

# **52° CONGRESSO NAZIONALE DELLA SOCIETÀ ITALIANA DI NEUROLOGIA**

**Milano, 3-6 Dicembre 2022**

**MiCo Milano Congressi**

**GATE 14 Via Gattamelata, 5**

## **RAZIONALE**

La Società Italiana di Neurologia e la Neurologia milanese sono liete di ospitare il 52° Congresso della Società Italiana di Neurologia a Milano presso MiCo Congressi dal 3 al 6 Dicembre 2022, in presenza! Stiamo vivendo come Neurologia un periodo di ineguagliabile sviluppo grazie a nuove strategie diagnostiche, al progresso delle Neuroscienze e delle “omiche” che hanno oggi reso possibile non solo diagnosi tempestive, ma hanno anche favorito lo sviluppo di strategie terapeutiche volte a risolvere efficacemente malattie un tempo ritenute incurabili.

In questa ottica Milano e la Lombardia sono sede di centri neurologici universitari e ospedalieri con poli di eccellenza per la ricerca di base costituendo un’area strategica in Italia nel settore della Neurologia clinica e delle Neuroscienze. Una rete altamente interattiva garantisce omogeneità di formazione per i giovani fornendo l’assistenza più qualificata al paziente neurologico.

La crescita continua delle conoscenze precliniche ha avviato di fatto una transizione alla clinica: tale processo sta raggiungendo oggi la maturità con risultati spesso entusiasmanti che richiedono rapidi adeguamenti culturali, strutturali e assistenziali. Nuove tecnologie trovano spesso proprio nella Neurologia la prima applicazione in Medicina; anche per questo motivo l’impulso del PNRR deve essere colto in tutta la potenzialità per il miglioramento ulteriore di una Neurologia già internazionalmente competitiva. Lo sguardo al Mediterraneo come verso altri continenti deve consolidare collaborazioni fattive nella consapevolezza di una tradizione di eccellenza.

La realtà clinica e scientifica della Neurologia italiana, e in particolare della Neurologia lombarda, nel contesto di una trasformazione post-COVID, richiedono scelte avveniristiche e forgiate per il futuro ispirate da una solida tradizione culturale.

Milano ha visto negli anni recenti una crescita culturale, urbanistica ed economica ineguagliabile rendendola città attraente e piacevole. Il Centro Congressi, recentemente rinnovato, offre infrastrutture e servizi degni di una capitale europea: un soggiorno piacevole e allettante è garantito dalle svariate risorse che Milano può offrire dalla moda alla cultura, dal design alla ristorazione.

## **PROFESSIONI ALLE QUALI SI RIFERISCE L’EVENTO FORMATIVO:**

PSICOLOGO PSICOTERAPIA; PSICOLOGIA;

MEDICO CHIRURGO: GERIATRIA; MEDICINA E CHIRURGIA DI ACCETTAZIONE E DI URGENZA; MEDICINA FISICA E RIABILITAZIONE; MEDICINA INTERNA; NEUROLOGIA; NEUROPSICHIATRIA INFANTILE; PEDIATRIA; PSICHIATRIA; RADIOTERAPIA; CHIRURGIA GENERALE; NEUROCHIRURGIA; OFTALMOLOGIA; MEDICINA LEGALE; MEDICINA NUCLEARE; NEUROFISIOPATOLOGIA; NEURORADIOLOGIA; RADIODIAGNOSTICA; IGIENE, EPIDEMIOLOGIA E SANITÀ PUBBLICA; MEDICINA GENERALE (MEDICI DI FAMIGLIA); CONTINUITÀ ASSISTENZIALE; PEDIATRIA (PEDIATRI DI LIBERA SCELTA); PSICOTERAPIA; CURE PALLIATIVE; EPIDEMIOLOGIA;

## **3 Dicembre 2022**

**Ore 13.00 – 17.30 CORSO DI AGGIORNAMENTO 1**

***Neuroimaging della prevenzione, diagnosi e monitoraggio del paziente neurologico cronico***

**PRIMA PARTE**

Moderatori: M. FILIPPI (*Milano*), G. TEDESCHI (*Napoli*)

- Malattie vascolari  
A. BOZZAO (*Roma*)
- Vasculiti del sistema nervoso centrale  
P. PREZIOSA (*Milano*)
- Sclerosi Multipla  
A. GALLO (*Napoli*)
- NMO<sup>46</sup> spectrum disorders  
R. CORTESE (*Siena*)

**SECONDA PARTE**

Moderatori: F. AGOSTA (*Milano*), N. DE STEFANO (*Siena*)

- Tumori  
A. CASTELLANO (*Milano*)
- Eemicranie  
R. MESSINA (*Milano*)
- Malattia di Alzheimer e demenza fronto-temporale  
F. AGOSTA (*Milano*)
- Epilessia  
A. LABATE (*Messina*)

**Ore 13.00 – 15.30 CORSO DI AGGIORNAMENTO 2**

***La progressione della malattia nella Sclerosi Multipla: un paradigma che cambia***

Moderatori: G. COMI (*Milano*), C. GASPERINI (*Roma*)

- Il contributo della neuropatologia  
R. MAGLIOZZI (*Verona*)
- Il contributo della RMN<sup>61</sup>  
N. DE STEFANO (*Siena*)
- Il contributo dei biomarkers: meccanismi biologici e progressione  
M. SALVETTI (*Roma*)
- Traiettorie cliniche di progressione: come cambia il paradigma  
M. TROJANO (*Bari*)
- Strategie terapeutiche: come cambia il paradigma

M.P. AMATO (*Firenze*)

**Ore 13.00 – 17.30 CORSO DI AGGIORNAMENTO 3**

***Aggiornamento sui Disordini del Movimento: dalla fisiopatologia alla terapia***

**PRIMA PARTE**

Moderatori: P. BARONE (*Salerno*), L. LOPIANO (*Torino*)

- Gangli della base, cervelletto e corteccia cerebrale nei disordini del movimento  
M. BOLOGNA (*Roma*)
- Le neuroimmagini (fisiopatologia e diagnosi differenziale) nei disordini del movimento  
A. TESSITORE (*Napoli*)
- Levodopa nella malattia di Parkinson: vecchi miti e nuove acquisizioni  
M. ZAPPIA (*Catania*)
- Discinesie da levodopa e coree: inquadramento clinico  
G. FABBRINI (*Roma*)

**SECONDA PARTE**

Moderatori: A. ALBANESE (*Milano*), M. ZAPPIA (*Catania*)

- Diagnosi clinica e strumentale dei parkinsonismi atipici  
M.T. PELLECCIA (*Salerno*)
- Tremori - inquadramento clinico e fisiopatologia  
A. BERARDELLI (*Roma*)
- Distonie - inquadramento clinico  
G. DEFAZIO (*Cagliari*)
- I disturbi del movimento di natura funzionale  
M. TINAZZI (*Verona*)

**Ore 13.00 – 17.30 CORSO DI AGGIORNAMENTO 4**

***Percorso diagnostico-terapeutico nelle urgenze neurologiche: opinioni a confronto***

**PRIMA PARTE**

Moderatori: P. CORTELLI (*Bologna*), M. DEL SETTE (*Genova*)

Complicanze neurologiche della terapia CAR T

- Il parere del neurologo  
M. GUARINO (*Bologna*)
- Il parere dell'ematologo  
F. BONIFAZI (*Bologna*)

Sindrome da ipotensione liquorale

- Il parere del neurologo  
P. TORELLI (*Parma*)
- Il parere del neuroradiologo  
L. CHIAPPARINI (*Milano*)

**SECONDA PARTE**

Moderatori: M. SILVESTRINI (*Ancona*), A. ZINI (*Bologna*)

Emorragie cerebrali: la fase iperacuta

- Il parere del neurologo  
V. CASO (*Perugia*)
- Il parere del neurochirurgo  
R. STEFINI (*Legnano, MI*)

Le trombosi venose cerebrali

- Il parere del neurologo  
A. CAVALLINI (*Pavia*)
- Il parere del neuroradiologo  
A. CONSOLI (*Paris, FR*)

#### **Ore 13.00 – 15.30 CORSO DI AGGIORNAMENTO 5**

##### ***Nuove prospettive nella terapia farmacologica e non farmacologica delle cefalee primarie***

Moderatori: P. CALABRESI (*Roma*), C. TASSORELLI (*Pavia*)

- Prevenire l'emicrania con farmaci vecchi e nuovi: quando e per chi  
A. RUSSO (*Napoli*)
- Monoterapia e politerapia a confronto: pro e contro  
R. ORNELLO (*L'Aquila*)
- Nuove prospettive nel trattamento della cefalea da uso eccessivo di farmaci sintomatici  
I. CORBELLI (*Perugia*)
- Cefalea a grappolo e altre TACs<sup>84</sup>: cosa c'è di nuovo?  
R. DE ICCO (*Pavia*)
- Oltre i farmaci: neuromodulazione, blocchi nervosi e terapia comportamentale  
G. COPPOLA (*Latina*)

#### **Ore 13.00 – 15.30 CORSO DI AGGIORNAMENTO 6**

##### ***La valutazione del Sistema Nervoso Vegetativo: dalla clinica al laboratorio***

Moderatori: G. MICIELI (*Pavia*), G.F. PARATI (*Milano*)

- Sindrome ipotensione/ipertensione  
G. CALANDRA BUONAURA (*Bologna*)
- Sistema cardiovascolare  
G.F. PARATI (*Milano*)
- Sistema gastro-enterico  
R. DE GIORGIO (*Ferrara*)
- Sistema genito-urinario  
G. PELLICIONI (*Ancona*)
- Sonno e ritmi circadiani  
C. LOMBARDI (*Milano*)

**Ore 13.00 – 15.30 CORSO DI AGGIORNAMENTO 7**

***Come cambiano diagnostica e terapia in Miologia***

Moderatori: G. SICILIANO (*Pisa*), A. TOSCANO (*Messina*)

- Quanto la genetica ha migliorato la tempestività della diagnosi  
G. SICILIANO (*Pisa*)
- Come l'imaging muscolare può aiutare nella diagnosi  
G. TASCA (*Roma*)
- Nuovi indirizzi terapeutici nelle distrofie muscolari  
G.P. COMI (*Milano*)
- Innovazione in tema di miopatie metaboliche  
O. MUSUMECI (*Messina*)
- Innovazione in tema di terapie nelle malattie della giunzione  
R. LIGUORI (*Bologna*)

**Ore 13.00 – 15.30 CORSO DI AGGIORNAMENTO 8**

***La SLA<sup>85</sup>: una malattia multisistemica***

Moderatori: A. CHIÒ (*Torino*), V. SILANI (*Milano*)

- Strategie terapeutiche innovative nelle malattie del motoneurone  
J. MANDRIOLI (*Modena*)
- Le alterazioni cognitivo/comportamentali, extrapiramidali e metaboliche della SLA<sup>85</sup>  
A. CALVO (*Torino*)
- Un'unificante neuropatologia: TDP-43  
E. BURATTI (*Trieste*)
- La genetica della SLA<sup>85</sup>: geni patogenetici e modificatori per diverse patologie neurodegenerative  
N. TICOZZI (*Milano*)
- Verso una terapia condivisa per SLA<sup>85</sup> e demenza fronto-temporale?  
V. LA BELLA (*Palermo*)

**Ore 13.00 – 15.30 CORSO DI AGGIORNAMENTO 9**

***Update sui tumori cerebrali e linfomi primitivi del SNC<sup>86</sup>***

Moderatori: E. MARCHIONI (*Pavia*), R. SOFFIETTI (*Torino*)

- Nuova Classificazione istologico-molecolare WHO 2021 dei tumori cerebrali: cosa cambia per il clinico?  
R. SOFFIETTI (*Torino*)
- Linfomi cerebrali primitivi nell'anziano: le nuove sfide di un'entità a crescente incidenza  
A. SILVANI (*Milano*)
- I gliomi di basso grado: dalla personalizzazione del trattamento oncologico alla gestione dell'epilessia

R. RUDÀ (*Treviso*)

- Modelli di assistenza integrata ospedale-territorio: valutazione a lungo termine

A. PACE (*Roma*)

- Complicanze neurologiche dei linfomi sistemici: dalle sindromi paraneoplastiche alle CarT cell

E. MARCHIONI (*Pavia*)

### **15.30-17.30 WORKSHOP 1**

#### ***Sessualità e sclerosi multipla***

Moderatori: S. BONAVIDA (*Napoli*), A. LUGARESI (*Bologna*)

- Fisiopatologia ed aspetti clinici

F. PATTI (*Catania*)

- Come diagnosticare le disfunzioni sessuali nelle persone con sclerosi multipla

A. CAROTENUTO (*Napoli*)

- La gestione dei disturbi sessuali nella sclerosi multipla

C. LEONE (*Ragusa*)

- Impatto delle disfunzioni sessuali sulla qualità della vita e sul benessere psicologico delle persone con Sclerosi Multipla

R. LANZILLO (*Napoli*)

### **15.30-17.30 WORKSHOP 2**

#### ***NeuroCOVID: passato presente e futuro***

Moderatori: C. FERRARESE (*Milano*), A. PRIORI (*Milano*)

- NeuroCOVID: patogenesi e neuropatologia

T. BOCCI (*Milano*)

- Risultati dello studio SIN<sup>87</sup> NeuroCOVID

S. BERETTA (*Monza*)

- Sequele cognitive post-COVID

A. CAGNIN (*Padova*)

- COVID-19 e futuro: ipotesi sugli effetti dell'infezione e delle vaccinazioni sull'epidemiologia delle malattie neurologiche del XXI secolo

G. REMUZZI (*Milano*)

### **15.30-17.30 WORKSHOP 3**

#### ***La MrgFUS<sup>98</sup>: dalla neuro modulazione al trattamento***

Moderatori: R. ELEOPRA (*Milano*), M. TINAZZI (*Verona*)

- Dalla ricerca di base al trattamento

F. PRADA (*Milano*)

- Tecnica e targeting neuroradiologico

G. KENNETH RICCIARDI (*Verona*)

- Tremore Essenziale: risultati a lungo termine

M. D'AMELIO (*Palermo*)

- Altri tremori e nuove indicazioni

R. ELEOPRA (*Milano*)

#### **15.30-17.30 WORKSHOP 4**

##### ***Sonno: quale ruolo nelle malattie neurodegenerative?***

Moderatori: L. FERINI-STRAMBI (*Milano*), G. PLAZZI (*Bologna*)

- Insonnia e neurodegenerazione

B.M. GUARNIERI (*Pescara*)

- OSA<sup>88</sup> e malattia di Alzheimer

C. LIGUORI (*Roma*)

- Ipersonnia e malattia di Parkinson

M. TERZAGHI (*Pavia*)

- Disordini del sonno REM<sup>80</sup> e sinucleinopatie

E. ANTELMINI (*Verona*)

#### **15.30-17.30 WORKSHOP 5**

##### ***Immunoterapia della miastenia gravis con anticorpi monoclonali***

Moderatori: G. ANTONINI (*Roma*), A. EVOLI (*Roma*)

- Inibitori dell'attivazione del complemento. Risultati dei trial e real-world evidence

S. PREVITALI (*Milano*)

- Razionale del blocco del recettore neonatale Fc e risposta terapeutica

F. HABETSWALLNER (*Napoli*)

- Deplezione B linfocitaria. Evidenze e controversie

C. RODOLICO (*Messina*)

- È possibile una terapia della miastenia senza steroidi

G. ANTONINI (*Roma*)

#### **15.30-17.30 WORKSHOP 6**

##### ***Strategie di integrazione tra neurologia e medicina palliativa***

Moderatori: E. PUCCI (*Fermo*), A. SOLARI (*Milano*)

- Perché è necessario integrare neurologia e medicina palliativa

D. OLIVER (*UK*)

- Un modello di integrazione per la Malattia di Parkinson

S. LORENZI (*DE*)

- Una esperienza italiana sulla SLA<sup>85</sup>

C. MOGLIA (*Torino*)

- Quali strategie per la Sclerosi Multipla ad alta disabilità

S. VERONESE (*Torino*)

#### **17.30-18.00 PAUSA CAFFÈ**

#### **18.00 CERIMONIA DI INAUGURAZIONE**

18.00 Saluti delle Autorità

18.30 Neurologi artificiali: l'impatto della AI (artificial intelligence) sulla professione  
Stefano Quintarelli (Roma)

19.00 Il futuro è delle macchine coscienti?  
Federico Faggin (California, USA)

## 4 Dicembre 2022

### **08.30-10.30 SESSIONE PLENARIA**

#### *Intelligenza artificiale e neurologia*

Moderatori: S. CAPPA (*Pavia*), V. SILANI (*Milano*)

- Intelligenza artificiale per neurologi  
S. FIGINI (*Pavia*)
- Intelligenza artificiale e Alzheimer  
G. FRISONI (*Ginevra, CH - Brescia*)
- Intelligenza artificiale e Neuroimaging  
M.A. ROCCA (*Milano*)
- Intelligenza artificiale e Neuroprostetica  
S. MICERA (*Pisa - Losanna, CH*)

### **10.30-11.00 PAUSA CAFFÈ**

### **11.00-13.00 COMUNICAZIONI ORALI SCLEROSI MULTIPLA 1**

MODERATORI: C. POZZILLI (Roma) – S. BONAVIDA (Napoli)

#### **IS IT TIME FOR OCRELIZUMAB EXTENDED INTERVAL DOSING IN RELAPSING REMITTING MULTIPLE SCLEROSIS? EVIDENCE FROM AN ITALIAN MULTICENTRE EXPERIENCE DURING COVID-19 PANDEMIC**

E. D'AMICO (*Foggia*)

#### **COGNITIVE RESERVE MODULATES THE IMPACT OF FRONTAL LOBE DAMAGE ON EXECUTIVE FUNCTIONING IN MULTIPLE SCLEROSIS**

P. PREZIOSA (*Milano*)

#### **SILENT PROGRESSION AND "HIDDEN" SYMPTOMS IN RELAPSING-ONSET MULTIPLE SCLEROSIS PATIENTS**

E. PORTACCIO (*Firenze*)

#### **LEPTOMENINGEAL ENHANCEMENT IN PROGRESSIVE MULTIPLE SCLEROSIS IS ASSOCIATED WITH HIGHER RISK OF FUTURE DISABILITY PROGRESSION AND PERSISTS ON LONG TERM FOLLOW-UP DESPITE HIGH EFFICACY THERAPIES**

P. GARELLI (*Torino*)

**HIGH CORTICAL LESION LOAD AT DIAGNOSIS PREDICTS CONVERSION TO SECONDARY PROGRESSIVE MULTIPLE SCLEROSIS AND LONG-TERM DISABILITY ACCUMULATION**

G. M. SCHIAVI (*Verona*)

**PROGRESSION INDEPENDENT OF RELAPSE AND RELAPSE ASSOCIATED WORSENING ACCORDING TO AGE IN MULTIPLE SCLEROSIS**

P. IAFFALDANO (*Bari*)

**CEREBROSPINAL FLUID B CELL AND NEUROAXONAL DAMAGE BIOMARKERS: CORRELATION WITH RELAPSES AND LONG-TERM DISABILITY IN MULTIPLE SCLEROSIS**

K. SMOLIK (*Modena*)

**EVALUATING CENTRAL VEIN SIGN IN PEDIATRIC ONSET MULTIPLE SCLEROSIS (POMS) DIAGNOSIS**

V. D. BOCCIA (*Genova*)

**DISABILITY AND RELAPSE-RATE TRAJECTORIES IN NAÏVE PATIENTS ON ORAL DRUGS: RESULTS FROM THE ITALIAN MULTIPLE SCLEROSIS REGISTER**

A. MANNI (*Bari*)

**OCRELIZUMAB EFFECT ON HUMORAL AND CELLULAR IMMUNITY IN MULTIPLE SCLEROSIS AND ITS CLINICAL CORRELATES: A 3-YEAR OBSERVATIONAL STUDY**

N. CAPASSO (*Napoli*)

**IN PATIENTS WITH MULTIPLE SCLEROSIS RETINAL HYPER-REFLECTIVE FOCI ASSOCIATES WITH CORTICAL PATHOLOGY**

M. PUTHENPARAMPIL (*Padova*)

**THE CENTRAL VEIN SIGN TO DIFFERENTIATE MULTIPLE SCLEROSIS FROM MIGRAINE**

C. LAPUCCI (*Genova*)

**11.00-13.00 COMUNICAZIONI ORALI CASI CLINICI 1**

MODERATORI: S. MONACO (*Verona*) – P. MANGANOTTI (*Trieste*)

**EVOLUTION OF POLYSOMNOGRAPHIC FEATURES IN A PATIENT WITH CASPR-2 ANTIBODY ASSOCIATED LIMBIC ENCEPHALITIS**

V. DE FRANCO (*Siena*)

**A CASE OF HEIDENHEIN VARIANT OF CREUTZFELDT-JACOB DISEASE PRESENTING WITH CEREBRAL VASOCONSTRICTION**

I. (*San Fermo della Battaglia-CO*)

**A NOVEL GRN MUTATION IN AN ITALIAN PATIENT WITH NON-FLUENT VARIANT OF PRIMARY PROGRESSIVE APHASIA AT ONSET: A LONGITUDINAL CASE REPORT**

V. CASTELNOVO (*Milano*)

**COVID-19 COURSE AND OUTCOMES AFTER THREE MRNA VACCINE DOSES IN MULTIPLE SCLEROSIS PATIENTS TREATED WITH HIGH EFFICACY DMTs**

A. GALLO (*Napoli*)

**AN ATYPICAL ADRENOLEUKODYSTROPHY: A CASE REPORT**

S. FALLETTI (*Roma*)

**BRAIN PARENCHYMA SONOGRAPHY AS A USEFUL TOOL IN DETECTING PATIENTS WITH ESSENTIAL TREMOR AT RISK TO DEVELOP PARKINSON'S DISEASE: A CASE REPORT**

C. FRAU (*Sassari*)

**SPINAL DURAL ARTERIOVENOUS FISTULA PRESENTING AS ACUTE AREFLEXIC BILATERAL LIMB WEAKNESS**

P. ZOLEO (*Catanzaro*)

**GIANT PERIVASCULAR VIRCHOW-ROBIN SPACES: A RARE CAUSE OF ADULT ONSET PROGRESSIVE SPASTIC PARAPARESIS**

C. MAROTTA (*Napoli*)

**LONG-COURSE OF SPORADIC CREUTZFELDT-JAKOB DISEASE MIMICKING STEROID-RESPONSIVE ENCEPHALOPATHY ASSOCIATED WITH AUTOIMMUNE THYROIDITIS**

A. SARACENO (*Catanzaro*)

**A STROKE DUE TO SPONTANEOUS CAROTID DISSECTION IN A WOMAN WITH C.2371C>T HETEROZYGOUSE MUTATION OF COL4A3 GENE: A CASE REPORT**

P. A. RIZZO (*Roma*)

**BRAIN STRUCTURAL ABNORMALITIES AND COGNITIVE CHANGES IN A PATIENT WITH 17Q21.31 MICRO-DUPLICATION AND EARLY ONSET DEMENTIA: A CASE REPORT**

M. LEOCADI (*Milano*)

**MILD ENCEPHALOPATHY WITH REVERSIBLE SPLENIAL LESION (MERS): A RARE ETIOLOGY OF A RARE SYNDROME**

A. DE FALCO (*Napoli*)

**11.00-13.00 COMUNICAZIONI ORALI CEFALEE 1**

MODERATORI: S. SACCO (L'Aquila) – I. RAINERO (Torino)

**AN ALTERED HYPOTHALAMIC-PONTINE FUNCTIONAL INTERPLAY COULD AFFECT MIGRAINE DISEASE PROGRESSION OVER THE YEARS**

R. MESSINA (*Milano*)

**THE CHRONIC MIGRAINE PHENOTYPE: ROLE OF POTENTIAL PERIPHERAL BIOCHEMICAL BIOMARKERS AND SPECIFIC CLINICAL FEATURES**

L. AHMAD (*Pavia*)

**THE HYPOTHALAMUS IN CHRONIC CLUSTER HEADACHE: INVOLVEMENT OF THE IPSILATERAL HYPOTHALAMIC PARAVENTRICULAR NUCLEUS AND PREOPTIC AREA**

A. NIGRI, *(Milano)*

**THE HYPOTHALAMUS PLAYS A ROLE IN MODULATING MIGRAINE ATTACK DURATION: INSIGHTS FROM A MICROSTRUCTURAL AND FUNCTIONAL MRI STUDY**

G. SEBASTIANELLI *(Latina)*

**MICROEMBOLIC SIGNALS IN EMBOLIC STROKE OF UNDETERMINED SOURCE AND MIGRAINE AURA**

C. ALTAMURA *(Roma)*

**RESTING-STATE EEG<sup>16</sup> FUNCTIONAL CONNECTIVITY IN THE INTER-ICTAL PHASE OF MIGRAINE WITH AURA**

M. RUSSO *(Chieti)*

**WHAT HAPPENS TO HEADACHE FEATURES DURING ERENUMAB RESUMPTION AFTER MANDATORY INTERRUPTION? ASSESSMENT IN CHRONIC MIGRAINE PATIENTS TAKING A PREVENTIVE THERAPY**

G. VAGHI *(Pavia)*

**DISABILITY AND IMPACT OF HEADACHE INFLUENCE SOMATOSENSORY ELECTROCORTICAL RESPONSES IN PATIENTS WITH MEDICATION-OVERUSE HEADACHE**

F. CASILLO *(Latina)*

**OBSESSIVE-COMPULSIVE TRAITS AMONG CHRONIC MIGRAINE PATIENTS: GENDER DIFFERENCES**

G. VITICCHI *(Ancona)*

**EVALUATION OF CEREBRAL VASOREACTIVITY IN MIGRAINE PATIENTS: A TRANSCRANIAL DOPPLER STUDY**

G. DE VANNA *(Milano)*

**DIFFERENT PERSONALITY PROFILES IN PATIENTS WITH CHRONIC CLUSTER HEADACHE: A DATA-DRIVEN APPROACH**

A. TELESKA *(Milano)*

**HEADACHE AND COVID-19 VACCINATION: DATA FROM ONLINE QUESTIONNAIRE IN PATIENTS WITH MIGRAINE**

I. OROLOGIO *(Napoli)*

**11.00-13.00 COMUNICAZIONI ORALI MALATTIE CEREBROVASCOLARI 1**

MODERATORI: C. ZANFERRARI (MILANO) – M. DEL SETTE (GENOVA)

**INTERNAL CAROTID ARTERY PATENCY AFTER MECHANICAL THROMBECTOMY FOR STROKE DUE TO OCCLUSIVE DISSECTION: IMPACT ON OUTCOME**

G. SCOPELLITI *(Lille-F)*

**META-ANALYSIS OF THE EFFICACY/EFFECTIVENESS AND SAFETY OF REPERFUSION/RECANALIZATION TREATMENTS IN YOUNG PATIENTS WITH ACUTE ISCHEMIC**

**STROKE: COULD STROKE VOLUME THRESHOLDS AND TIME INTERVALS BE RELATED AND ADJUSTED TO PATIENT AGE CLASS?**

S. LORENZANO (*Roma*)

**THE ROLE OF BETA-AMYLOID, TAU, AND ALFA-SYNUCLEIN PROTEINS AS PUTATIVE BLOOD BIOMARKERS IN PATIENTS WITH CEREBRAL AMYLOID ANGIOPATHY**

M. C. CASELLI (*Pisa*)

**THE UNMET NEEDS IN THE ACUTE PHASE TREATMENT OF INTRACEREBRAL HEMORRHAGE: DATA FROM A POPULATION-BASED STUDY**

F. CONVERSI (*L'Aquila*)

**BLOOD UREA NITROGEN TO CREATININE RATIO AS A PROGNOSTIC BIOMARKER IN ISCHEMIC STROKE PATIENTS WITH NEW ONSET ATRIAL FIBRILLATION**

M. BURATTINI (*Pesaro*)

**THE POTENTIAL OF SMART DEVICES FOR SECONDARY PREVENTION OF CEREBROVASCULAR DISEASE: A PROOF-OF-PRINCIPLE STUDY**

F. MOTOLESE (*Roma*)

**INTRACRANIAL CAROTID ARTERY CALCIFICATION PATTERNS IN DIVERSE ETIOLOGICAL SUBTYPES OF ISCHEMIC STROKE**

F. MAZZACANE (*Pavia*)

**PREDICTORS AND PROGNOSTIC IMPACT OF HEMATOMA EXPANSION IN INFRATENTORIAL CEREBRAL HEMORRHAGE**

D. PEZZINI (*Brescia*)

**CAPSULAR WARNING SYNDROME: FEATURES, RISK PROFILE AND PROGNOSIS IN A LARGE PROSPECTIVE TIA COHORT**

M. FOSCHI (*Ravenna*)

**DUAL ANTIPLATELET THERAPY FOR SECONDARY PREVENTION IN INTRACRANIAL ATHEROSCLEROTIC DISEASE: A NETWORK METANALYSIS**

A. ZAULI (*Roma*)

**THROMBOLYSIS AFTER DABIGATRAN REVERSAL: A NATION-WIDE ITALIAN MULTICENTRE STUDY AND META-ANALYSIS**

M. ROMOLI (*Cesena*)

**MECHANICAL THROMBECTOMY IN MINOR STROKE DUE TO ISOLATED M2 OCCLUSION: A MULTICENTER RETROSPECTIVE MATCHED ANALYSIS**

F. COLÒ (*Roma*)

**11.00-13.00 COMUNICAZIONI ORALI MALATTIE DEGENERATIVE**

MODERATORI: N.B. MERCURI (ROMA) – B. BORRONI (BRESCIA)

**THE ADDED VALUE OF PRION CSF RT-QUIC TO THE DIAGNOSIS OF CREUTZFELDT-JAKOB DISEASE: A TEN-YEAR STUDY**

A. MASTRANGELO (*Bologna*)

**APOE GENOTYPE AND BLOOD-BRAIN BARRIER PERMEABILITY IN NEURODEGENERATIVE DISEASES: IMPLICATIONS FOR BLOOD-BASED BIOMARKERS?**

I. LIBRI (*Brescia*)

**EFFECTS OF GENETIC VARIATIONS OF NGFR/P75NTR GENE ON ALZHEIMER'S DISEASE**

F. BRUNO (*Lamezia Terme-CZ*)

**CSF<sup>89</sup> MOLECULAR CHARACTERIZATION OF PARKINSON'S DISEASE WITH MILD COGNITIVE IMPAIRMENT**

F. PAOLINI PAOLETTI (*Perugia*)

**GLIAL, MICROGLIAL AND APOE CONTRIBUTIONS ALONG THE ALZHEIMER'S CONTINUUM: CSF<sup>89</sup> STREM-2, GFAP AND B-S100 IN SYMPTOMATIC SPORADIC AD**

C. G. BONOMI (*Roma*)

**VISUAL HALLUCINATIONS IN LEWY BODY DISEASE: PATHOPHYSIOLOGICAL INSIGHTS FROM PHENOMENOLOGY**

F. D'ANTONIO (*Roma*)

**THE ROLE OF MOTOR RESERVE IN SPINOCEREBELLAR ATAXIA TYPE 2**

L. SICILIANO, G. OLIVITO, N. URBINI, M. C. SILVERI, M. LEGGIO (*Roma, Milano*)

**GUT MICROBIOME ALTERATIONS IN LEWY BODY SPECTRUM**

A. PILOTTO (*Brescia*)

**DE NOVO PARKINSON'S DISEASE WITH CONSTIPATION: PRESENTING PHENOTYPE, BIOCHEMICAL SIGNATURE, AND CLINICAL PROGRESSION**

P. GRILLO (*Roma*)

**AWARENESS IN NEURODEGENERATIVE DISORDERS: A SYSTEMATIC MRI REVIEW**

M. LEOCADI (*Milano*)

**LONG-TERM EFFICACY AND SAFETY OF IDEBENONE IN PATIENTS WITH LHON IN THE CHRONIC PHASE: RESULTS FROM THE LEROS STUDY**

C. LA MORGIA (*Bologna*)

**EYE MOVEMENTS ABNORMALITIES AS EARLY BIOMARKER OF ALZHEIMER'S DISEASE**

A. ZANGROSSI (*Padova*)

**11.00-13.00 COMUNICAZIONI ORALI MALATTIE DEL MOTONEURONE**

MODERATORI: F. MANGANELLI (NAPOLI) – A. UNCINI (CHIETI)

**BETA AMYLOID AND TAU CONTRIBUTION TO MOTOR AND COGNITIVE MANIFESTATIONS IN AMYOTROPHIC LATERAL SCLEROSIS IN RELATION TO APOE HAPLOTYPE: A RETROSPECTIVE CLINICAL STUDY**

A. MARANZANO (*Milano*)

**ALTERATION OF INTEROCEPTIVE SENSITIVITY: EXPANDING THE SPECTRUM OF BEHAVIOURAL DISORDERS IN AMYOTROPHIC LATERAL SCLEROSIS**

F. P. AUSIELLO (*Napoli*)

**CSF<sup>89</sup> SERPINA1 LEVELS INCREASED IN RAPIDLY PROGRESSING ALS PATIENTS**

A. GHEZZI (*Modena*)

**STRUCTURAL AND FUNCTIONAL CONNECTOME ALTERATIONS ACROSS KING'S STAGES IN AMYOTROPHIC LATERAL SCLEROSIS**

E. G. SPINELLI (*Milano*)

**INVESTIGATING THE ROLE OF P.F46C-SOD1 VARIANT IN A SPORADIC ALS PATIENT**

B. PERRONE (*Arcavata di Rende-CS*)

**SERUM LEVELS OF NEUROFILAMENT LIGHT CHAIN (NFL) IN A LARGE COHORT OF PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS**

F. VERDE (*Milano*)

**EXPLORING POTENTIAL MARKERS OF PRE-DEMENTIA RISK STATES IN MOTOR NEURON DISEASES: A LONGITUDINAL STUDY OF MILD BEHAVIORAL IMPAIRMENT AND ITS RELATION TO COGNITION**

P. M. FERRARO (*Genova*)

**PRESYMPTOMATIC GEOGRAPHICAL DISTRIBUTION OF PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS: A POPULATION-BASED CLUSTER ANALYSIS**

R. VASTA (*Torino*)

**BRAIN METABOLIC DIFFERENCES BETWEEN PURE BULBAR AND PURE SPINAL ALS<sup>1</sup>: A 18F-FDG<sup>90</sup>-PET<sup>58</sup> STUDY**

A. CANOSA (*Torino*)

**LONELINESS IN ALS IS LINKED TO BEHAVIORAL CHANGES AND THINNING OF BILATERAL FRONTOPARIETAL CORTEX**

M. CONSONNI (*Milano*)

**PHASE 2 CLINICAL TRIAL OF RAPAMYCIN FOR AMYOTROPHIC LATERAL SCLEROSIS**

J. MANDRIOLI (*Modena*)

**A CLUSTER-BASED APPROACH USING MAGNETIC RESONANCE IMAGING METRICS TO EVALUATE PATTERNS OF NEURODEGENERATION AND CLINICAL IMPLICATIONS IN AMYOTROPHIC LATERAL SCLEROSIS**

G. MILELLA (*Bari*)

**11.00-12.00 COMUNICAZIONI ORALI NEUROGENETICA**

MODERATORI: E.M. VALENTE (PAVIA) – M. MANCUSO (PISA)

**ALEXANDER DISEASE IN ADULTS: CHARACTERIZATION OF A LARGE ITALIAN COHORT**

C. BENZONI (*Milano*)

**CLINICOPATHOLOGIC AND MOLECULAR SPECTRUM OF MGME1-RELATED MITOCHONDRIAL DISEASE IN A COHORT OF ADULT PATIENTS FROM THE ITALIAN NETWORK**

D. RONCHI (*Milano*)

**HEREDITARY SPASTIC PARAPARESIS TYPE 46 (SPG46): AN ITALIAN CASE SERIES AND REVIEW OF THE LITERATURE**

E. CIOFFI (*Roma*)

**NEURODEGENERATION WITH BRAIN IRON ACCUMULATION (NBIA): NEW CANDIDATE GENES**

C. SCUDERI (*Troina-EN*)

**HTRA1 ACCUMULATION IN SMALL ARTERIES OF CADASIL PATIENTS**

L. G. PRADOTTO (*Torino*)

**CEREBELLAR ATAXIA, SENSORINEURAL DEAFNESS, AND HYPOGONADISM: CLUES TO A RARE DISEASE**

G. M. I. FALCONE (*Messina*)

**11.00-12.00 COMUNICAZIONI ORALI NEUROPSICOLOGIA CLINICA**

MODERATORI: C. PAPAGNO (MILANO) – M. VALERIANI (ROMA)

**HIPPOCAMPAL MICROSTRUCTURAL INTEGRITY AND SPEED OF INFORMATION PROCESSING IN MULTIPLE SCLEROSIS**

D. MISTRI (*Milano*)

**VISUOSPATIAL DEFICITS ARE SPECIFIC FOR PISA SYNDROME BUT NOT FOR CAMPTOCORMIA IN PARKINSON DISEASE**

E. MONTANARO (*Torino*)

**DISENTANGLING EXECUTIVE DYSFUNCTION FROM SLOW PROCESSING SPEED DUE TO MOTOR DISABILITY IN AMYOTROPHIC LATERAL SCLEROSIS: ITALIAN NORMATIVE VALUES OF VERBAL FLUENCY INDICES**

V. CASTELNOVO (*Milano*)

**COGNITIVE RESERVE PREDICTS THE BASAL GANGLIA VOLUME IN THE EARLY PARKINSON'S DISEASE**

S. DI TELLA (*Milano*)

**DETERMINANTS OF COUNTERFACTUAL THINKING IN ALS<sup>1</sup>: AN EXPLORATIVE STUDY**

B. POLETTI (*Milano*)

**NEUROPSYCHOLOGICAL PROFILE IN PATIENTS WITH TEMPORAL LOBE EPILEPSY PLUS PSYCHOGENIC NON EPILEPTIC SEIZURES**

I. MARTINO(*Catanzaro*)

**12.00-13.00 SIMPOSIO**

***Ponesimod: agire sull'infiammazione per prevenire la degenerazione nella SM  
Con il contributo non condizionante di Janssen Cilag***

**Moderatori:** Massimo Filippi (*Milano*) - Maria Trojano (*Bari*)

Apertura e introduzione  
Maria Trojano (*Bari*)

Evidenze cliniche: efficacia e sicurezza  
Carlo Pozzilli (*Roma*)

Evidenze di neuroimaging: neuroinfiammazione e neurodegenerazione  
M. Rocca (*Milano*)

Discussione e conclusioni  
M. Filippi (*Milano*)

**13.00-14.30 PAUSA PRANZO**

**13.30-15.30 SIMPOSIO**

***E' tempo di innovare in Sclerosi Multipla  
Con il contributo non condizionante di Novartis***

Moderatori: M. Filippi (*Milano*) C. Gasperini (*Roma*)

- Introduzione e benvenuto

M. Filippi (*Milano*) C. Gasperini (*Roma*)

- From time to timing: la Sclerosi Multipla come continuum di malattia

M. Calabrese (*Padova*)

- Changes times: le ultime evidenze sugli HET e il trattamento precoce

D. Centonze (*Roma*)

- No time for compromise: ofatumumab: un viaggio nelle evidenze dalla ricerca alla pratica clinica

E. Cocco(*Cagliari*), M. Salvetti (*Roma*)

- The time is now: il riconoscimento precoce della progressione e il ruolo di siponimod

M. Clerico (*Torino*)

- Time will tell: come riconoscere i benefici del trattamento della progressione nella pratica clinica

S. Bonavita (*Napoli*)

Closing remarks

M. Filippi (*Milano*) – C. Gasperini (*Roma*)

#### **14.00-14.30 LETTURA**

***Sintomi motori e non motori nella malattia di parkinson: opzioni terapeutiche attuali e future  
Con il contributo non condizionante di Abbvie***

Moderatore: Alfredo Berardelli (*Roma*)

Relatore: Angelo Antonini (*Padova*)

#### **14.00-15.00 SIMPOSIO**

***Nuovi scenari nell'insonnia***

***Con il contributo non condizionante di IDORSIA***

Moderatore: L. Ferini Strambi (*Milano*)

- Insonnia cronica: un disturbo delle 24 ore con impatto sul funzionamento diurno

L. Ferini Strambi (*Milano*)

- Il sistema dell'orexina nella fisiologia del sonno

C. Liguori (*Roma*)

- Efficacia e sicurezza di daridorexant nel trattamento dell'insonnia cronica

L. Parrino (*Parma*)

#### **14.00-16.00 SIMPOSIO**

***Neurologia e territorio***

Moderatori: A. BERARDELLI (*Roma*), G. TEDESCHI (*Napoli*)

- La neurologia di prossimità nella riorganizzazione delle reti sanitarie

R. QUATRALE (*Mestre, Venezia*)

- La rete dei servizi nella gestione delle malattie neurodegenerative

V. TOZZI (*Milano*)

- I nuovi livelli strutturali delle reti ospedaliere

A. GAUDIOSO (*Roma*)

- La neurologia nei DM<sup>91</sup> 70 E DM<sup>91</sup> 71

F. BOLOGNA (*Roma*)

**14.00-16.00 SIMPOSIO**

***Nuovi approcci di ricerca traslazionale per la terapia dell'ictus ischemico  
in collaborazione con la Società Italiana di Neuroscienze (SINS)***

Moderatori: P. CALABRESI (Roma), C. FERRARESE (Monza, MI)

- Neuroinfiammazione e ictus ischemico  
S. FUMAGALLI (Milano)
- Condizionamento ischemico e miRNA<sup>92</sup>  
G. PIGNATARO (Napoli)
- Potenziamiento dei circoli collaterali nell'ictus ischemico  
S. DIAMANTI (Monza, MI)
- Intelligenza artificiale e ictus  
M. MONFORTE (Roma)

**14.00-15.30 SIMPOSIO**

***Il contributo lombardo alla storia della neurologia e delle neuroscienze***

Moderatori: F. BRIGO (Merano, BZ), L. LORUSSO (Milano)

- Introduzione  
F. BRIGO (Merano, BZ), L. LORUSSO (Milano)
- Il contributo all'istologia e alla neuroanatomia  
P. MAZZARELLO (Pavia)
- Il contributo alla neurologia clinica  
F. BRIGO (Merano, BZ), L. LORUSSO (Milano)
- Il contributo all'assistenza delle persone con malattie neurologiche  
A. PORRO (Milano)
- Il contributo della neurologia milanese  
S. ZAGO (Milano)

**14.30-15.00 LETTURA**

***Efgartigimod nel panorama terapeutico della Mitenia Gravis  
Con il contributo non condizionante di Argenx***

F. Saccà (Napoli)

**15.30-16.00 LETTURA**

***Cognition in epilepsy  
Con il contributo non condizionante di Livanova***

G. Di Gennaro (Pozzilli, IS)

**15.30-16.30 SIMPOSIO**

*If you think MS<sup>37</sup> is silent... you are not listening*  
*Con il contributo non condizionante di Sanofi*

Moderatori: M. Filippi (Milano) C. Gasperini (Roma)

- Turning up the volume on smouldering disease

M. Di Filippo (Perugia)

- Should we target the «invisible»?

R. Bergamaschi (Pavia)

- How the invisible becomes visible

M. Rocca (Milano)

**15.30-16.30 SIMPOSIO**

*Fremanezumab: cosa è cambiato in un anno?*  
*Con il contributo non condizionante di Teva*

Moderatore: A. Ambrosini (Pozzilli, IS)

- Posologia mensile versus posologia trimestrale di fremanezumab: quali sono le opportunità?

P. Geppetti (Firenze)

- Efficacia vs<sup>93</sup> effectiveness: passato, presente e futuro di fremanezumab

A. Russo (Napoli)

- Studio real-world PEARL: risultati dalla prima analisi ad interim italiana

C. Tassorelli (Pavia)

**15.30-16.30 TAVOLA ROTONDA**

*Innovazione tecnologica in sanità: riflessioni, side e opportunità*  
*Con il contributo non condizionante di Biogen*

Moderatore: P. Gallo (Padova)

Discussant: Elisabetta Ravot, Isabella Castiglioni, Silvia Stefanelli, Andrea Aliverti, Shibeshih Belachew

**15.30-17.30 SIMPOSIO**

*Cognitività: interfaccia tra neurologia e psichiatria*

Moderatori: A. BERARDELLI (Roma), M. MAJ (Napoli)

- Network italiano per la ricerca sulle psicosi

S. GALDERISI (Napoli)

- Interventi di riabilitazione cognitiva in patologie psichiatriche

A. VITA (*Brescia*)

- Funzioni cognitive e sintomi psichiatrici nei disordini del movimento

P. BARONE (*Salerno*)

- Neuroimmagini e cognizione

M. CORBETTA (*Padova*)

#### **16.00-17.00 SIMPOSIO**

*La gestione olistica del paziente con Epilessia;*

*Perampanel: l'importanza della terapia precoce e delle comorbidità*

*Con il contributo non condizionante di EISAI*

Moderatori: Giancarlo Di Gennaro (Pozzilli), Emilio Russo (Catanzaro)

- Comorbidità: sonno ed emicrania

Claudio Liguori (Roma)

- Il paziente anziano

Giada Pauletto (Udine)

- Lo studio PEROC

Edoardo Ferlazzo (Reggio Calabria)

#### **16.30-17.00 LETTURA**

*Dalla prevenzione alla fase acuta dell'emicrania: il concetto di pain freedom*

*Con il contributo non condizionante di ELI LILLY*

Moderatore: P. Calabresi (Roma)

Relatore: C. Tassorelli (Pavia)

#### **16.30-17.30 SIMPOSIO**

*Ozanimod: Early and long-term efficacy impacting physical and cognitive results, since the onset of the RRMS<sup>81</sup>*

*Con il contributo non condizionante di BMS/CELGENE*

Moderatori: M.P. Amato (Firenze) C. Gasperini (Roma)

- Ozanimod: Central Mechanism of Action

D. Centonze (Roma)

- Short and long-term efficacy of Ozanimod (traditional and novel endpoints)

M. Calabrese (Padova)

- Efficacy of Ozanimod on cognitive functions

M. Rocca (Milano)

#### **17.00-17.30 PAUSA CAFFÈ**

**17.30-19.30 *Ground Round in neurologia: la SIN<sup>87</sup> per i giovani***

Moderatori: F. DI LORENZO (*Roma*), A. BOMBACI (*Torino*)

- **Caso Clinico Sistema Nervoso Periferico:**

verrà sottolineata l'importanza della semeiotica delle neuropatie integrata con gli esami strumentali (elettroencefalografia ed elettromiografia) utili per l'approccio diagnostico

L. SANTORO (*Napoli*)

- **Caso Clinico Miopatie:**

verrà presentato un paziente affetto da una malattia che colpisce principalmente i distretti muscolari su base genetica che avrà anche la presenza di altri sintomi neurologici e sistemici. La valutazione clinica, congiuntamente con i reperti elettromiografici e quelli biotici, guideranno il clinico alla formulazione della diagnosi

S. SERVIDEI (*Roma*)

- **Caso Clinico Sistema extrapiramidale:**

verranno illustrati quali sono i reperti importanti nell'inquadramento clinico di un paziente affetto da un disturbo del sistema extrapiramidale, con un'importante attenzione ai riferimenti anamnestici che possono aiutare il clinico nella formulazione diagnostica

A. TESSITORE (*Napoli*)

- **Caso Clinico Demenze:**

verrà presentato un caso clinico di un paziente affetto da una malattia neurodegenerativa che colpisce le funzioni cognitive superiori con associati altri sintomi minori afferenti ad altri sistemi neurologici. Il colloquio con il paziente ed una breve intervista forniranno già indicazioni utili per la valutazione cognitiva e verrà poi integrata la storia clinica con gli esami strumentali radiologici che aiuteranno nell'inquadramento diagnostico

A.C. BRUNI (*Lamezia Terme, CZ*)

**17.30-19.30 WORKSHOP 7**

***Ictus: che futuro per le terapie di rivascolarizzazione?***

Moderatori: E.C. AGOSTONI (*Milano*), L. PANTONI (*Milano*)

- **Trombectomia diretta verso bridging therapy**

A. ZINI (*Bologna*)

- **Le occlusioni arteriose distali: trombolisi sistemica o trombectomia meccanica?**

M. LONGONI (*Forlì-Cesena*)

- **L'impatto del Tenecteplase nell'ictus ischemico**

D. TONI (*Roma*)

- **Modelli organizzativi sostenibili e intelligenza artificiale**

S. VIDALE (*Varese*)

**17.30-19.30 WORKSHOP 8**

***L'epilessia nell'anziano: uno sguardo "dentro" e "intorno" alle crisi***

Moderatori: G. DI GENNARO (*Roma - Pozzilli, IS*), A. MORANO (*Roma*)

- **Le peculiarità dell'epilessia nell'anziano, tra fragilità e comorbidità**

A. GAMBARDELLA (*Catanzaro*)

- Crisi ed epilessia nello stroke  
E. CERULLI IRELLI (*Roma*)
- Crisi ed epilessia nelle demenze  
E. NARDI CESARINI (*Fano, PU*)
- Crisi ed epilessia nell'encefalite autoimmune  
A. VOGRIG (*Udine*)

### **17.30-19.30 WORKSHOP 9**

***La diagnosi differenziale delle neuropatie ottiche a presentazione acuta: quando la clinica può essere ingannevole***

Moderatori: A. PADOVANI (*Brescia*), M. ROMANO (*Palermo*)

- Neuriti demielinizzanti  
C. CORDANO (*San Francisco, USA*)
- Neuriti ottiche atipiche  
F. BANDINI (*Genova*)
- Neuropatia ottica ischemica  
S. BIANCHI MARZOLI (*Milano*)
- Neuropatia ottica ereditaria di Leber  
C. LA MORGIA (*Bologna*)

### **17.30-19.30 WORKSHOP 10**

***Idrocefalo occulto normoteso: ritardo diagnostico ed implicazioni per le opzioni terapeutiche***

Moderatori: S. BONAVIDA (*Napoli*), A. FALINI (*Milano*)

- Perché l'idrocefalo occulto normoteso è difficile da diagnosticare e trattare?  
M. TODISCO (*Pavia*)
- Markers liquorali dell'idrocefalo occulto normoteso  
T. SCHIRINZI (*Roma, Pavia*)
- Imaging dell'idrocefalo occulto normoteso  
A. FALINI (*Milano*)
- L'iter terapeutico dell'idrocefalo occulto normoteso:  
il parere del neurochirurgo  
G. PALANDRI (*Bologna*)

### **17.30-19.30 WORKSHOP 11**

***Atrofia Muscolare Spinale: meccanismi molecolari e terapie innovative***

Moderatori: G.P. COMI (*Milano*), N. TICOZZI (*Milano*)

- Eziopatogenesi della SMA<sup>94</sup>  
S. CORTI (*Milano*)
- I processi patologici delle diverse forme di malattia del motoneurone  
N. RIVA (*Milano*)
- Le novità terapeutiche nella SMA<sup>94</sup> di tipo I  
V. SANSONE (*Milano*)

- Le novità terapeutiche nelle SMA<sup>94</sup> di tipo II e III  
S. MESSINA (*Messina*)

### **17.30-19.30 WORKSHOP 12**

#### ***Mieliti: nuove prospettive***

Moderatori: S. FERRARI (*Verona*), L. MASSACESI (*Firenze*)

- Inquadramento generale delle mieliti  
E. MARCHIONI (*Pavia*)
- Mieliti infettive  
S. MONACO (*Verona*)
- Mieliti disimmuni  
R. IORIO (*Roma*)
- Aspetti radiologici delle mieliti  
E. SECHI (*Sassari*)

### **17.30-19.30 WORKSHOP 13**

#### ***Tecniche di stimolazione cerebrale non invasive nelle malattie neurodegenerative***

Moderatori: V. DI LAZZARO (*Roma*), L. LEOCANI (*Milano*)

- Meccanismi di azione della neuromodulazione non invasiva  
V. DI LAZZARO (*Roma*)
- La neuromodulazione nella malattia di Parkinson  
A. GUERRA (*Roma*)
- La neuromodulazione nella malattia di Alzheimer  
B. BORRONI (*Brescia*)
- La neuromodulazione nell'ictus  
F. CAPONE (*Roma*)

### **17.30-19.30 WORKSHOP 14**

#### ***Traslazione clinica della ricerca sperimentale in Neurologia***

Moderatori: D. CENTONZE (*Roma*), A. PISANI (*Pavia*)

- Traslazione clinica della ricerca sui canali ionici  
M. TAGLIALATELA (*Napoli*)
- Traslazione clinica della ricerca sui recettori per il glutammato  
F. NICOLETTI (*Roma*)
- Il ruolo della ricerca di base per la comprensione e la terapia della malattia di Alzheimer  
M. DI LUCA (*Milano*)
- Il ruolo della ricerca di base per la comprensione e la terapia della Sclerosi Multipla  
A. UCCELLI (*Genova*)

### **17.30-19.30 WORKSHOP 15**

**Fragilità biologica nelle malattie neurodegenerative e neuroinfiammatorie**

Moderatori: D. CENTONZE (Roma), A. CONTE (Roma)

- Fragilità: cosa è e come misurarla  
M. CESARI (Milano)
- Fragilità e malattie neurodegenerative  
M. CANEVELLI (Roma)
- Fragilità e malattie neuroinfiammatorie  
A. CONTE (Roma)
- Fragilità e neurocovid  
A. PILOTTO (Brescia)

**17.30-19.30 WORKSHOP 16**

**Applicazioni e prospettive dell'uso integrato della stimolazione magnetica transcranica e dell'elettroencefalogramma (TMS<sup>72</sup>-EEG<sup>16</sup>) in ambito neurologico**

Moderatori: C. MINIUSSI (Trento), M. ROSANOVA (Milano)

- Basi neurofisiologiche e metodologiche della TMS<sup>72</sup>-EEG<sup>16</sup>  
P. BELARDINELLI (Trento)
- Applicazioni cliniche della TMS<sup>72</sup>-EEG<sup>16</sup>  
L. ROCCHI (Cagliari)
- TMS<sup>72</sup>-EEG<sup>16</sup> nei disordini del movimento  
G. LEODORI (Roma)
- Prospettive della TMS<sup>72</sup>-EEG<sup>16</sup> nello studio della connettività cerebrale in condizioni fisiologiche e patologiche  
M. BORTOLETTO (Brescia)

## **5 Dicembre 2022**

**08.30-10.30 SESSIONE PLENARIA**

**Medicina di precisione in neurologia: uno scenario possibile?**

Moderatori: A. BERARDELLI (Roma), A.C. BRUNI (Lamezia Terme, CZ)

- Evidenze e incognite nell'approccio e presa in carico del deterioramento cognitivo  
A.C. BRUNI (Lamezia Terme, CZ)
- Malattia di Parkinson: i diversi sottotipi di malattia  
R. CERAVOLO (Pisa)
- La medicina di precisione: dall'utopia alla realtà per la diagnosi e il trattamento del paziente con sclerosi multipla  
M. FILIPPI (Milano)
- NMOSD: comprendere la fisiopatologia per migliorare la diagnosi e sviluppare nuovi trattamenti  
C. TORTORELLA (Roma)

**10.30-11.00 PAUSA CAFFÈ**

**10.30-11.30 ASSEMBLEA DEI SOCI SIN<sup>87</sup>**

**11.00-13.00 COMUNICAZIONI ORALI SCLEROSI MULTIPLA 2**

MODERATORI: G.L. MANCARDI (GENOVA) – I. SIMONE (BARI)

**SPINAL CORD RESERVE AND DISABILITY WORSENING OVER TIME IN PATIENTS WITH MULTIPLE SCLEROSIS**

S. RUGGIERI (*Roma*)

**RISK OF INFLAMMATORY REACTIVATION FOLLOWING SARS-COV-2 VACCINE IN A LARGE COHORT OF MULTIPLE SCLEROSIS PATIENTS**

D. LANDI (*Roma*)

**EVALUATION OF PARAMAGNETIC RIM LESIONS AS A MARKER OF DISABILITY**

R. NISTRI (*Firenze*)

**FUNCTIONAL CONNECTIVITY MODIFICATIONS IN MONOAMINERGIC CIRCUITS OCCUR IN FATIGUED MS PATIENTS TREATED WITH FAMPRIDINE AND AMANTADINE**

M. A. ROCCA (*Milano*)

**PREDICTION OF THE INFORMATION PROCESSING SPEED PERFORMANCE IN MULTIPLE SCLEROSIS USING A MACHINE LEARNING APPROACH IN A LARGE MULTI-CENTER MRI DATASET**

A. D'AMBROSIO (*Napoli*)

**HIPPOCAMPAL ATROPHY IN PATIENTS WITH EARLY MULTIPLE SCLEROSIS AND ITS CORRELATION TO MEMORY IMPAIRMENT**

D. PLANTONE (*Siena*)

**ANTERIOR AND POSTERIOR VISUAL PATHWAY INVOLVEMENT IN MYELIN OLIGODENDROCYTE GLYCOPROTEIN ANTIBODY DISORDERS (MOGAD) PATIENTS: AN OCT<sup>95</sup> AND MRI<sup>36</sup> STUDY**

L. BOLLO (*Bari*)

**NON-RANDOM LOCALIZATION OF CORTICAL LESIONS IN FUNCTIONAL NETWORKS IS RELATED TO COGNITIVE AND PHYSICAL IMPAIRMENT IN MULTIPLE SCLEROSIS**

A. BAJRAMI (*Verona*)

**DIFFERENTIATING MS<sup>37</sup> LESIONS WITH OR WITHOUT PARAMAGNETIC RIM WITH ADVANCED MRI<sup>36</sup>**

F. TAZZA (*Genova*)

**INTRATHECAL IGM<sup>96</sup> SYNTHESIS AS PROGNOSTIC BIOMARKER IN MULTIPLE SCLEROSIS**

M. FONDERICO (*Firenze*)

**MANAGEMENT OF OCRELIZUMAB IN MS<sup>37</sup> PATIENTS DURING THE COVID-19 PANDEMIC: AN OBSERVATIONAL REGISTRY-BASED STUDY**

A. BISECCO (*Napoli*)

**HUMORAL AND T-CELL RESPONSE TO SARS-COV-2 MRNA VACCINE IN MULTIPLE SCLEROSIS PATIENTS TREATED WITH DISEASE MODIFYING THERAPIES**

S. BARONE (*Catanzaro*)

**11.00-13.00 COMUNICAZIONI ORALI CASI CLINICI 2**

MODERATORI: P. PALUMBO (PRATO) – R. CARMELO (MESSINA)

**MIND THE JERK: RECURRENT FALLS MAY BE THE ONLY CLINICAL SIGN OF CORTICAL-SUBCORTICAL MYOCLONUS**

J. ROSSI (*Modena*)

**TREMOR SYNDROMES IN THE ELDERLY: THREE CASES**

P. SANGINARIO (*Roma*)

**BING NEEL SYNDROME (BNS). NEURORADIOLOGICAL FINDINGS OF CNS<sup>9</sup> INVOLVEMENT IN WALDENSTRÖM MACROGLOBULINEMIA (WM)**

C. REGNA-GLADIN (*Milano*)

**A CASE OF MISDIAGNOSED POEMS SYNDROME WITH ONSET AFTER SARS-COV-2 INFECTION AND CENTRAL NERVOUS SYSTEM MANIFESTATIONS**

C. FANCIULLI (*Bologna*)

**COMPLEX MOTOR BEHAVIOUR DURING SLEEP: A RARE CASE OF PAROXYSMAL HYPNOGENIC DYSKINESIA**

P. PROSERPIO (*Milano*)

**CHILDHOOD CASE OF GLYCOGENOSIS TYPE 2 WITH ABNORMAL CAPILLARIES AND AUTOPHAGY BLOCK**

C. ANGELINI (*Padova*)

**COVID-19 VACCINE-RELATED GUILLAIN-BARRÉ SYNDROME IN LIGURIA, REGION OF ITALY: A MULTICENTER CASE SERIES**

F. GERMANO (*Genova*)

**PROGRESSIVE COGNITIVE DECLINE IN AN ATYPICAL NEURO-SJOGREN'S SYNDROME: A CASE REPORT**

A. MONTINI (*Bologna*)

**A NOVEL VARIANT IN TBCD GENE ASSOCIATED WITH DISTAL MOTONEURONOPATHY AND CORPUS CALLOSUM HYPOPLASIA**

M. CAPUTO (*Modena*)

**ACUTE DISSEMINATED ENCEPHALOMYELITIS (ADEM) AS CLINICAL PRESENTATION OF ANTI-MYELIN OLIGODENDROCYTE GLYCOPROTEIN ANTIBODIES DISEASE (MOG-AD) AFTER SARS COV2 VACCINATION**

D. DEGAN (*Bassano Del Grappa-VI*)

**RECRUDESCENCE OF MYOCARDITIS AFTER COVID-19 VACCINE IN PATIENT WITH PREVIOUS MYOCARDITIS AND PARAINFECTIONOUS GUILLAIN-BARRÉ SYNDROME RELATED TO INFLUENZA A H1N1**

D. CERNE (*Genova*)

**SUCCESSFUL TREATMENT OF CHRONIC MIGRAINE COMORBIDS WITH MYASTHENIA GRAVIS AND ARTHRITIS WITH MONOCLONAL ANTIBODY AGAINST CGRP: A CASE REPORT**

C. ABAGNALE (*Latina*)

**11.00-13.00 COMUNICAZIONI ORALI CEFALEE 2**

MODERATORI: P. CALABRESI (ROMA) – A. RUSSO (NAPOLI)

**EFFECTIVENESS AND SAFETY OF CGRP<sup>7</sup>-MABS IN MENSTRUAL RELATED MIGRAINE: A REAL-WORLD EXPERIENCE**

M. SILVESTRO (*Napoli*)

**ONABOTULINUMTOXINA TREATMENT IN OLDER PATIENTS WITH CHRONIC MIGRAINE AND A LONG DISEASE HISTORY**

C. ALTAMURA (*Roma*)

**ABILITY OF A SET OF TRUNK ACCELERATION-DERIVED GAIT INDEXES TO CHARACTERIZE GAIT IMBALANCE IN SUBJECTS WITH MIGRAINE**

S. F. CASTIGLIA (*Latina*)

**ROLE OF THE DEFAULT MODE NETWORK IN EPISODIC CLUSTER HEADACHE: CEREBRAL CONNECTIVITY ANALYSIS WITH HD-EEG**

M. CORRADO (*Pavia*)

**GALCANEZUMAB EFFECT ON “WHOLE PAIN BURDEN” AND MULTIDIMENSIONAL OUTCOMES IN MIGRAINE PATIENTS WITH PREVIOUS UNSUCCESSFUL TREATMENTS: A REAL-WORLD EXPERIENCE**

M. SILVESTRO (*Napoli*)

**THE INFLUENCE OF SMALL INTESTINAL BACTERIAL OVERGROWTH (SIBO) IN MIGRAINE**

C. DI LORENZO (*Latina*)

**BRAIN CONNECTIVITY MODIFICATIONS INDUCED BY MONOCLONAL ANTIBODIES TARGETING THE CGRP PATHWAY IN MIGRAINE PATIENTS: A PROSPECTIVE HD-EEG<sup>16</sup>, OPEN-LABEL, STUDY**

R. DE ICCO (*Pavia*)

**SUBCLINICAL CEREBRAL LESIONS IN MIGRAINE AND PLATELET AGGREGATION**

I. MAESTRINI (*Roma*)

**EFFECTIVENESS, SAFETY AND IMPACT ON BLOOD PRESSURE OF ERENUMAB AND FREMANEZUMAB AMONG OVER-60 MIGRAINE PATIENTS**

D. MASCARELLA (*Bologna*)

**MIGRAINE CHRONIFICATION AS AN ALLOSTATIC DISORDER: ASSESSMENT OF THE BOLOGNA ALLOSTATIC LOAD INDEX (BALI)**

C. CALABRO' (*Bologna*)

**HOW MUCH DISABLED ARE VERY DISABLED MIGRAINE PATIENTS? A COHORT ANALYSIS IN CHRONIC MIGRAINE PATIENTS WITH MULTIPLE PREVENTIVE TREATMENT FAILURES**

F. VERNIERI (*Roma*)

**HEADACHE IN MINORS LIVING WITH HIV IN SUB-SAHARAN AFRICA**

L. GIANI (*Milano*)

**11.00-13.00 COMUNICAZIONI ORALI DISORDINI DEL MOVIMENTO 1**

MODERATORI: F. STOCCHI (ROMA) – A. STEFANI (ROMA)

**RISK AND PROTECTION FACTORS IN PARKINSON'S DISEASE: A PROSPECTIVE POPULATION STUDY**

M. I. DE BARTOLO (*Pozzilli-IS*)

**DEVELOPMENT AND VALIDATION OF AUTOMATED MR<sup>97</sup> PARKINSONISM INDEX 2.0 TO DISTINGUISH PSP-P FROM PD<sup>50</sup>**

A. QUATTRONE (*Catanzaro*)

**NEUROPHYSIOLOGICAL ASSESSMENT OF JUVENILE PARKINSONISM DUE TO PRIMARY MONOAMINE NEUROTRANSMITTER DISORDERS**

M. PASSARETTI (*Roma*)

**DIVERGENT SEX-SPECIFIC FUNCTIONAL STRIATAL CONNECTIVITY IN DRUG-NAÏVE PATIENTS WITH PARKINSON'S DISEASE**

S. SATOLLI (*Napoli*)

**PHOSPHORYLATED A-SYNUCLEIN IN SKIN NON-MYELINATING SCHWANN CELLS: A NEW BIOMARKER FOR MULTIPLE SYSTEM ATROPHY**

V. DONADIO (*Bologna*)

**DIFFERENT PATTERNS OF ACUTE SACCADIC RESPONSES TO LEVODOPA CHALLENGE TEST IN DE NOVO PARKINSON'S DISEASE: POSSIBLE PROGNOSTIC IMPLICATIONS**

C. TERRAVECCHIA (*Catania*)

**DYSAUTONOMIA AND CLINICAL OUTCOMES IN PARKINSON'S DISEASE: A 5-YEAR PROSPECTIVE STUDY EVALUATING THE INDIVIDUAL IMPACT OF AUTONOMIC DOMAINS**

A. ROMAGNOLO (*Torino*)

**FUNCTIONAL REORGANIZATION OF THE MOTOR CONNECTOME AFTER MRGFUS<sup>98</sup> VIM<sup>99</sup> THALAMOTOMY: A RESTING STATE FMRI<sup>100</sup> STUDY ON 30 PATIENTS**

M. STANZIANO (*Milano*)

**PROKINETICIN-2 EXPRESSION IS INCREASED IN OLFACTORY NEURONS OF PATIENTS WITH PARKINSON'S DISEASE AND DIRECTLY CORRELATES WITH A-SYNUCLEIN OLIGOMERS ACCUMULATION**

T. SCHIRINZI (*Roma*)

**LONGITUDINAL EVALUATION OF PATIENTS WITH DYSTONIC AND ESSENTIAL TREMOR TREATED WITH MRGFUS<sup>98</sup> THALAMOTOMY: ONE YEAR OUTCOME AND ADVERSE EVENTS PROFILE**

N. GOLFRE' ANDREASI (*Milano*)

**DIAGNOSTIC AND PROGNOSTIC VALUE OF EXTERNAL ANAL SPHINCTER EMG<sup>17</sup> PATTERNS IN MULTIPLE SYSTEM ATROPHY**

M. TODISCO (*Pavia*)

**STRUCTURAL CONNECTIVITY CHANGES IN ESSENTIAL TREMOR WITH REM<sup>80</sup> SLEEP BEHAVIOUR DISORDER**

M. SALSONE (*Milano*)

**11.00-13.00 COMUNICAZIONI ORALI DEMENZE E INVECCHIAMENTO 1**

MODERATORI: S. SORBI (FIRENZE) – M. BOZZALI (TORINO)

**EUROPEAN INTER-SOCIETAL DELPHI CONSENSUS FOR THE BIOMARKER-BASED ETIOLOGICAL DIAGNOSIS OF NEUROCOGNITIVE DISORDERS**

M. COTTA RAMUSINO (*Pavia*)

**BIOMARKERS RELATED TO SYNAPTIC DYSFUNCTION TO DISCRIMINATE ALZHEIMER'S DISEASE FROM OTHER NEUROLOGICAL DISORDERS**

F. GRAZIANO (*Palermo*)

**CURRENT EVIDENCE AND CONCERNS ON THE USE OF DEEP BRAIN STIMULATION (DBS) IN COGNITIVE DISORDERS: A SCOPING REVIEW**

G. REMOLI (*Milano*)

**FROM RETINA TO VISUAL CORTEX: CHANGES OF VISUAL PATHWAY IN LEWY BODY DEMENTIA**

G. ZORZI (*Padova*)

**FUNCTIONAL CONNECTIVITY FROM DISEASE EPICENTERS IN FRONTOTEMPORAL DEMENTIA**

E. G. SPINELLI (*Milano*)

**TENÈPSIA: A TELE-NEUROPSYCHOLOGY PLATFORM FOR THE REMOTE ASSESSMENT OF MILD COGNITIVE IMPAIRMENT**

S. CAPPA (*Pavia*)

**EXECUTIVE-CENTRAL AND FRONTO-PARIETAL NETWORKS ABNORMALITIES ACCOUNT FOR COGNITIVE COMPLAINS REPORTED BY SUBJECTIVE COGNITIVE DECLINE**

L. SERRA (*Roma*)

**BAROMETER ALZHEIMER: REFLECTIONS ON THE FUTURE OF DIAGNOSIS AND TREATMENT OF ALZHEIMER'S DISEASE**

G. TEDESCHI (*Napoli*)

**LATE-ONSET AFFECTIVE AND PSYCHOTIC DISORDERS: THE CHALLENGE OF DISENTANGLING NEURODEGENERATIVE DISEASES WITH PSYCHIATRIC ONSET FROM PRIMARY PSYCHIATRIC DISORDERS**

G. ZORZI (*Padova, Teolo-PD*)

**ALZHEIMER'S DISEASE CSF<sup>89</sup> BIOMARKER PROFILES IN IDIOPATHIC NORMAL PRESSURE HYDROCEPHALUS**

F. EMILIANI (*Firenze*)

**LOCUS COERULEUS MRI<sup>36</sup> PREDICTS MILD COGNITIVE IMPAIRMENT PROGRESSION TO DEMENTIA**

A. GALGANI (*Pisa*)

**CSF<sup>89</sup> Aβ<sub>42</sub>/Aβ<sub>40</sub> RATIO PREDICTS A DIFFERENT METABOLIC PATTERN ALONG THE ALZHEIMER'S DISEASE CONTINUUM: A CSF<sup>89</sup> AND 18FDG-PET<sup>52</sup> STUDY**

M. G. DI DONNA (*Roma*)

**11.00-12.00 COMUNICAZIONI ORALI NEUROFISIOLOGIA CLINICA 1**

MODERATORI: R. CANTELLO (NOVARA) – A. ROSSI (SIENA)

**ABNORMAL SENSORIMOTOR CORTEX AND THALAMO-CORTICAL NETWORKS IN FAMILIAL ADULT MYOCLONIC EPILEPSY TYPE 2: PATHOPHYSIOLOGY AND DIAGNOSTIC IMPLICATIONS**

G. SENERCHIA (*Napoli*)

**CORTICO-CORTICAL SIGNAL TRANSMISSION AND BRAIN CONNECTIVITY IN HEALTHY INDIVIDUALS AS A MODEL FOR STUDYING ALZHEIMER'S DISEASE: A MULTIMODAL APPROACH OF TMS<sup>72</sup>-EEG<sup>16</sup> AND ADVANCED MRI<sup>36</sup>**

E. CANU (*Milano*)

**ELECTROKINESIOGRAPHIC STUDY OF OROPHARYNGEAL SWALLOWING IN PATIENTS WITH NEUROGENIC DYSPHAGIA**

G. COSENTINO (*Pavia*)

**NEUROPLASTICITY IN PEOPLE AFFECTED BY CHRONIC MAJOR UPPER LIMB AMPUTATION: A TMS<sup>72</sup> STUDY**

E. FALATO (*Roma*)

**IS FATIGUE A DISORDER OF MOVEMENT PREPARATION? A NEUROPHYSIOLOGICAL STUDY**

I. A. DI VICO (*Verona*)

**"ALL TIBIAL FOOT": A NEUROPHYSIOLOGICAL AND NEURORADIOLOGICAL STUDY**

A. BATTIATO (*Catania*)

**12.00-13.00 COMUNICAZIONI ORALI NEUROIMMAGINI**

MODERATORI: A. FALINI (MILANO) – R. LODI (BOLOGNA)

**INVESTIGATING GREY MATTER ATROPHY AND ITS RELATIONSHIP WITH WHITE MATTER LESIONS IN MS<sup>37</sup>, MOGAD AND AQP4-NMOSD<sup>47</sup>**

R. CORTESE (*Siena*)

**QUANTIFICATION OF THALAMIC VOLUME IN MULTIPLE SCLEROSIS: FROM THE MULTICENTER INNI DATASET TOWARDS THE CLINICAL APPLICATION**

L. STORELLI (*Milano*)

**BASAL GANGLIA HYPERMETABOLISM AS A POSSIBLE FDG<sup>90</sup>-PET<sup>52</sup> SIGNATURE OF AUTOIMMUNE ENCEPHALITIS**

F. E. POZZI (*Monza*)

**A LATENT DIMENSIONAL FRAMEWORK FOR BRAIN DIFFUSION PROPERTIES IN HEALTHY AND STROKE**

L. PINI (*Padova*)

**CLINICAL AND PROGNOSTIC RELEVANCE OF SINGLE-SUBJECT BRAIN METABOLISM PATTERNS IN AMYOTROPHIC LATERAL SCLEROSIS MUTATION CARRIERS**

G. TONDO (*Vercelli*)

**THE FUNCTIONAL ANATOMY OF ANTON'S SYNDROME AND ITS RELATIONSHIP WITH ANOSOGNOSIA FOR HEMIPLEGIA**

F. PALACINO (*Trieste*)

**11.00-13.00 COMUNICAZIONI ORALI NEUROCOVID**

MODERATORI: C. FERRARESE (MILANO) – A. PRIORI (MILANO)

**COVID-19 NEUROPATHOLOGY: EVIDENCE FOR SARS-COV-2 INVASION OF HUMAN BRAINSTEM NUCLEI**

A. EMMI (*Padova*)

**NEUROLOGICAL LONG-COVID IN THE OUTPATIENT CLINIC: TWO SUBTYPES, TWO COURSES**

S. G. GRISANTI (*Genova*)

**SERUM NEUROFILAMENT LIGHT CHAIN LEVELS IN COVID-19 PATIENTS WITHOUT MAJOR NEUROLOGICAL MANIFESTATIONS**

F. VERDE (*Milano*)

**BRAIN NEURONAL AND GLIAL DAMAGE DURING ACUTE COVID INFECTION IN ABSENCE OF CLINICAL NEUROLOGICAL MANIFESTATIONS**

D. PLANTONE (*Siena*)

**NEURO-COVAX: AN ITALIAN POPULATION-BASED STUDY OF NEUROLOGICAL COMPLICATIONS AFTER COVID-19 VACCINES**

M. SALSONE (*Milano*)

**COGNITIVE IMPAIRMENT FOLLOWING COVID-19 INFECTION. CLINICAL CHARACTERISTICS AND BIOMARKERS LONGITUDINAL PROFILING**

G. PELLITTERI (*Udine*)

**LONG-TERM OUTCOME IN COVID-19 RELATED CRITICAL ILLNESS POLYNEUROPATHY**

C. SCHENONE (*Genova*)

**IMPACT OF COVID-19 VACCINATIONS ON HOSPITAL ADMISSIONS FOR ISCHEMIC STROKE, TIAS, CEREBRAL HAEMORRHAGE AND CEREBRAL VENOUS THROMBOSIS IN THE LOMBARDIA OVER-12 POPULATION. PRELIMINARY DATA FROM A SELF-CONTROLLED CASE SERIES ANALYSIS**

A. SALMAGGI (*Milano*)

**NEUROLOGICAL DISORDERS THROUGHOUT ACUTE SARS-COV2 INFECTION: A COMPARATIVE STUDY BETWEEN VACCINATED AND NON-VACCINATED PATIENTS**

V. CRISTILLO (*Brescia*)

**MUSK MYASTHENIA GRAVIS AFTER SARS-COV2 INFECTION IN A CMT<sup>101</sup> PATIENT: A CASE REPORT**

P. E. ALBOINI (*San Giovanni Rotondo-FG*)

**PERSISTENT OLFACTORY DYSFUNCTION IN COVID-19: NEUROPSYCHOLOGICAL PROFILE, BRAIN MORPHOMETRY, AND GRAPH-BASED ANALYSIS OF RESTING-STATE FUNCTIONAL MRI<sup>36</sup>**

L. MUCCIOLI (*Bologna*)

**MANAGING NEURO-COVID AND POST-INTENSIVE CARE SYNDROME SYMPTOMATOLOGY AMONG SEVERE SARS-COV2 SURVIVORS: THE EXPERIENCE OF THE FOLLOW-UP OUTPATIENT SERVICE TEAM FROM THE NORTH-WESTERN TUSCANY LOCAL HEALTH UNIT, LUCCA, ITALY**

F. BOSINELLI(*Lucca*)

**11.00-12.00 COMUNICAZIONI ORALI RIABILITAZIONE NEUROLOGICA**

MODERATORI: L. PROVINCIALI (ANCONA) – G. JOLASCON (NAPOLI)

**ABNORMAL THALAMIC FUNCTIONAL CONNECTIVITY CORRELATES WITH CARDIORESPIRATORY FITNESS AND PHYSICAL ACTIVITY IN PROGRESSIVE MULTIPLE SCLEROSIS**

F. ROMANÒ (*Milano*)

**ACTION OBSERVATION AND MOTOR IMAGERY IMPROVE MOTOR IMAGERY ABILITIES IN PATIENTS WITH PARKINSON'S DISEASE – A FUNCTIONAL MRI<sup>36</sup> STUDY**

E. SARASSO (*Milano*)

**THE ROLE OF THE SERUM BIOMARKERS NF-L AND GFAP IN PREDICTING ISCHEMIC STROKE PATIENTS' OUTCOME**

F. FERRARI (*Pavia*)

**USING HOME-BASED EXERGAMES TO IMPROVE COGNITIVE FUNCTION IN MULTIPLE SCLEROSIS: A MULTICENTER, RANDOMIZED, SINGLE-BLIND NON- INFERIORITY TRIAL (THE EXTREMUS STUDY)**

S. RUGGIERI (*Roma*)

**FUNCTIONAL OUTCOME AND DEATH THREE YEARS AFTER DISCHARGE FROM AN INTENSIVE REHABILITATION HOSPITAL IN MODERATE SEVERE STROKE PATIENTS**

C. BARBATO (*Firenze*)

**POST STROKE DEPRESSION: A RETROSPECTIVE OBSERVATIONAL STUDY IN AN ITALIAN REHABILITATION WARD**

E. MATTEONI (*Torino*)

**11.00-13.00 COMUNICAZIONI ORALI EPILESSIA**

MODERATORI: U. AGUGLIA (CATANZARO) – C. DI BONAVENTURA (ROMA)

**PATIENT SELF-COLLECTED VERSUS NURSE-COLLECTED FINGERPRICK VOLUMETRIC ABSORPTIVE MICROSAMPLING FOR ANTISEIZURE MEDICATION THERAPEUTIC MONITORING**

C. CANCELLERINI (*Bologna*)

**ADVANCED NEUROIMAGING ALTERATIONS IN PATIENTS WITH EPILEPSY WITH AUDITORY FEATURES**

F. FORTUNATO (*Catanzaro*)

**CLINICAL INTERACTIONS IN PATIENTS WITH ATRIAL FIBRILLATION TREATED WITH NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS (NOACS) AND ANTI-SEIZURES MEDICATIONS (ASMS): THE INTERNOAS STUDY**

C. CALVELLO (*Perugia*)

**INCIDENCE OF EPILEPSY IN PATIENTS WITH DEMENTIA IN UMBRIA: POPULATION STUDY BASED ON ADMINISTRATIVE REGIONAL HEALTH DATA**

E. NARDI CESARINI (*Fano-PU*)

**CLINICAL AND INSTRUMENTAL CHARACTERIZATION OF PATIENTS WITH LATE-ONSET EPILEPSY**

J. C. DI FRANCESCO (*Monza*)

**INTRAOPERATIVE ELECTROCORTICOGRAPHY IN EPILEPSY SURGERY: DATA FROM THE EPILEPSY CENTER OF MODENA**

E. MICALIZZI (*Modena*)

**RESILIENCE AND EPILEPSY: IMPACT ON PSYCHOSOCIAL FACTORS AND STIGMA**

M. TOMBINI (*Roma*)

**SHORT-TERM OUTCOMES AND PREDICTORS OF ACUTE POSTOPERATIVE SEIZURES IN PATIENTS UNDERGOING SUPRATENTORIAL CRANIOTOMY**

S. M. LAZZARIN (*Rozzano-MI*)

**RISK OF HOSPITALIZATION AND DEATH FOR COVID-19 IN PERSONS WITH EPILEPSY OVER A 20-MONTH PERIOD: THE EPI LINK BOLOGNA COHORT, ITALY**

L. TARUFFI (*Bologna*)

**GLUT1-DEFICIENCY SYNDROME WITH EXTREME PHENOTYPIC VARIABILITY IN A FIVE-GENERATION FAMILY CARRYING A NOVEL SLC2A1 MUTATION**

A. GIUGNO (*Catanzaro*)

**THE ROLE OF MOLECULAR BIOMARKERS OF BRAIN TUMORS IN SYMPTOMATIC TUMOR-RELATED EPILEPSY. A PRELIMINARY STUDY ON 149 CASES**

A. DONNIAQUIO (*Genova*)

**SUBCLINICAL SEIZURES: 24-H PERIODICITY AND SLEEP-WAKE CYCLE**

A. PAGANO (*Roma*)

**12.00-14.00 SIMPOSIO**

*Personalised healthcare in CNS<sup>9</sup> neuroimmunological disorders: experience and innovation con il contributo non condizionante di ROCHE*

Moderatori: M. Filippi (*Milano*), M. Trojano (*Bari*)

- Personalised healthcare in Multiple Sclerosis: today and tomorrow

M. Calabrese (*Padova*)

- Ocrelizumab and long-term efficacy: the role of treatment personalization

C. Pozzilli (*Roma*)

- Personalised healthcare in neuromyelitis optica spectrum disorders: the satralizumab patient profile

M. Gastaldi (*Pavia*)

**13.30-14.30 PAUSA PRANZO**

**14.00-14.30 LETTURA**

*Dalla pratica clinica alle nuove sfide in SM<sup>37</sup>: il paradigma di natalizumab con il contributo non condizionante di BIOGEN*

Moderatore: R. Lanzillo (*Napoli*)

Relatore N. De Rossi (*Montichiari, BS*)

**14.00-14.30 LETTURA**

*Il ruolo della tossina botulinica nel nuovo scenario della terapia dell'emicrania con il contributo non condizionante di ALLERGAN*

Moderatore: Paolo Calabresi (*Roma*)

Relatore: Maria Albanese (*Roma*)

**14.00-15.00 SIMPOSIO**

***Come cambiare la storia di malattia in miastenia gravis e neuromielite ottica: l'inibizione della porzione terminale della cascata del complemento con il contributo non condizionante di ALEXION***

Moderatore A. Uccelli (Genova)

- NMOSD<sup>47</sup>

Carla Tortorella (Roma)

- gMG<sup>76</sup>

Francesco Habetswallner (Napoli)

**14.00-16.00 SIMPOSIO**

***Amyotrophic Lateral Sclerosis: new waves toward a new era? con il contributo non condizionante di AMYLIX***

Moderatori: S. H. Appel (Houston, USA) - V. Silani (Milano)

- ALS<sup>1</sup>: the past, the present and the future

S.H. Appel (Houston, USA)

- Pathogenesis of ALS<sup>1</sup>. Clinical and therapeutic implication

A.C. Ludolph (Ulm, Germany)

- The role of biomarkers

V. Silani (Milano)

- A new era in the discovery of <sup>ALS</sup> treatments

S. Paganoni (Harvard, USA)

**14.30-15.30 SIMPOSIO**

***Diroximel fumarato, trattamento di nuova generazione per il paziente SM<sup>37</sup>: evidenze dagli studi registrativi e dalla pratica clinica con il contributo non condizionante di BIOGEN***

Moderatore: M. Filippi (Milano)

- Introduzione

Massimo Filippi (Milano)

- Diroximel fumarato: meccanismo d'azione e razionale di sviluppo

Marinella Clerico (Torino)

- Esperienza clinica con Diroximel fumarato

Lucia Moiola (Milano)

**14.30-15.00 LETTURA**

*The biological transition of early diagnosis in Alzheimer's Disease: are we ready for the revolution?  
con il contributo non condizionante di ROCHE*

Moderatore: G. Tedeschi (Napoli)

Relatore: A. Padovani (Brescia)

**14.00-16.00 SIMPOSIO**

*The Italian contribution to the EAN<sup>102</sup> International Guidelines*

Chairmen: A. BERARDELLI (Roma)

- Diagnosis and treatment of chronic inflammatory demyelinating polyradiculoneuropathies (CIDP)

E. NOBILE-ORAZIO (Milano)

- Management of narcolepsy in adults and children

C. BASSETTI (Bern, CH), G. PIAZZI (Bologna)

- Parkinson's disease: invasive therapies

A. ANTONINI (Padova), G. FABBRINI (Roma)

- The EAN<sup>102</sup> ALS<sup>1</sup> management guidelines

A. CHIÒ (Torino), V. SILANI (Milano)

- IperCKemia

A. TOSCANO (Messina), G. SICILIANO (Pisa)

**14.30-15.30 CONFERENZA**

*Attualità della neurosonologia in ambito cerebrovascolare*

Moderatori: R. BELLA (Catania), M. DEL SETTE (Genova)

- Una trombectomia riuscita è sinonimo di successo? Monitoraggio neurosonologico nel paziente con ictus ischemico da occlusione di grosso vaso

R. TASSI (Siena)

- Novità in tema di stenosi carotidee

S. RICCI (Città di Castello, Branca - PG)

- La neurosonologia nell'aging

G. LANZA (Catania)

**15.00-16.00 SIMPOSIO**

*Cenobamato: nuovi orizzonti nel trattamento dell'epilessia  
con il contributo non condizionante di Angelini*

Moderatori: G. Di Gennaro (Pozzilli, IS) – A. Morano (Roma)

Unmeets e nuove prospettive nell'epilessia focale dell'adulto

E. Rosati (Firenze)

Evidenze di efficacia e sicurezza: overview dei trial clinici su cenobato

S. Lattanzi (Ancona)

Prime esperienze con cenobato in Italia: cosa abbiamo imparato?

A. D'Aneillo (Pozzilli, IS)

**15.30-16.00 LETTURA**

*Turning on the lights to stop neurodegeneration: the new clinical frontiers in Alzheimer Disease  
con il contributo non condizionante di ROCHE*

Relatore: F. Agosta (Milano)

**15.30-16.30 SIMPOSIO**

*Teriflunomide: fisheye perspective  
con il contributo non condizionante di SANOFI*

Moderatori: A. Conte (Roma), M. Inglese (Genova)

- Impronta terapeutica sul sistema immunitario

Giuseppe Matarese (Napoli)

- La soluzione in evoluzione

Lorena Lorefice (Cagliari)

- La cultura del prendersi cura

Paola Perini (Padova)

**16.00 – 17.00 CONFERENZA**

*L'impatto dei deficit cognitivi nella prognosi del paziente post - ictus*

Moderatore: C. CERAMI (Pavia)

- I disturbi cognitivo - comportamentali dopo ictus dei lobi frontali

A. MAZZUCCHI (Parma)

- L'impatto dei disturbi del linguaggio

G. MICELI (Trento)

- L'impatto dell'emeinellenza spaziale

M. MANCUSO (Grosseto)

**15.30-17.00 SIMPOSIO**

*Neurologia e riabilitazione neurologica*

Moderatori: G. JOLASCON (Napoli), G. TEDESCHI (Napoli)

- Nuove Frontiere nella gestione riabilitativa nelle malattie neuromuscolari

G. JOLASCON (Napoli)

- Appropriatazza dei percorsi riabilitativi per la persona con malattia neurologica

G. BERETTA (Milano)

- Fabbisogno, appropriatazza ed efficacia della neuro- riabilitazione post-ictale

S. PAOLUCCI (Roma)

**15.30-17.30 SIMPOSIO**

***Neurologia e neurochirurgia***

Moderatori: V. ESPOSITO (*Roma*), L. LOPIANO (*Torino*)

Epilessia

- Punto di vista del neurochirurgo

M. COSSU (*Milano*)

- Punto di vista del neurologo

C. DI BONAVENTURA (*Roma*)

Parkinson

- Punto di vista del neurochirurgo

S. SARUBBO (*Trento*)

- Punto di vista del neurologo

L. LOPIANO (*Torino*)

**16.00-17.00 SIMPOSIO**

***Sessione Istituti di Ricovero e Cura a Carattere Scientifico (IRCCS)***

- Un IRCCS<sup>103</sup> neurologico pubblico, tra desideri e realtà

G. LAURIA PINTER (*Milano*)

- Nuove prospettive di assistenza, ricerca ed innovazione per i pazienti affetti da malattie neurologiche in un IRCCS<sup>103</sup> di neuro riabilitazione

C.F. CALTAGIRONE (*Roma*)

- La Rete IRCCS<sup>103</sup> delle Neuroscienze e Neuroriabilitazione (RIN)

R. LODI (*Bologna*)

- Verso il riordino della disciplina degli IRCCS<sup>103</sup>

G. IPPOLITO (*Roma*)

**16.30-17.30 SIMPOSIO**

***Mito o Reality? Dall'efficacia rapida di Galcanezumab al Re-Treatment con il contributo non condizionante di ELI LILLY***

Moderatore: Innocenzo Rainero (*Torino*)

Farmaci specifici e vecchie sinergie: miglioriamo la qualità di vita nell'emicrania

Simona Sacco (*L'Aquila*)

Update di dati di real life: Galcanezumab rapido ed efficace

Sabina Cevoli (*Bologna*)

Gestione a lungo termine e Re-Treatment: quali vantaggi dai dati di real life?

Fabrizio Vernieri (*Roma*)

**16.30-18.30 SIMPOSIO**

***Dall'efficacia terapeutica alla qualità di vita del paziente con Sclerosi Multipla: esperienze di real life con Cladribina compresse  
con il contributo non condizionante di MERCK SERONO***

Moderatori: M. Filippi (Milano), M. Trojano (Bari)

- Immunoricostituzione ed efficacia a lungo termine di Cladribina compresse  
L. Battistini (Roma)
- *Sharing clinical practices*: casistiche di esperienza clinica *long term* in Italia  
C. Pozzilli (Roma), P. Annovazzi (Gallarate, VA)
- *Sharing clinical practices*: International real world experience on retreatment with Cladribine tablets  
C. Oreja-Guevara (Madrid, E)
- La ricerca di un'alta qualità di vita nel paziente SM<sup>37</sup>: le risposte di Cladribina compresse  
L. Moiola (Milano)

**16.00-17.00 SIMPOSIO**

***Verso una nuova era per la NMOSD<sup>47</sup>  
con il contributo non condizionante di HORIZON Therapeutics***

Moderatori: M.A. Battaglia (Genova), M. Filippi (Milano)

- La diagnostica differenziale, le caratteristiche cliniche e radiologiche della NMOSD<sup>47</sup>  
D. Centonze (Roma) – M. Rocca (Milano)
- Il ruolo centrale del CD19 nella deplezione dei linfociti B nella NMOSD<sup>47</sup>  
M. Salvetti (Roma)

Discussione, domande dall'audience e closing remarks

- M.A. Battaglia (Genova), M. Filippi (Milano), D. Centonze (Roma), M. Rocca (Milano), M. Salvetti (Roma)

**16.30-17.00 LETTURA**

***Colchicina: protezione del cervello oltre che del cuore  
con il contributo non condizionante di ACARPIA***

Moderatore L. Provinciali (Ancona)

Relatore A.P. Maggioni (Milano)

**16.30-17.30 SIMPOSIO**

***Innovazione nella SMA<sup>94</sup>: la terapia genica con onasemnogene abeparvovec  
con il contributo non condizionante di Novartis Gene Therapies***

Moderatore: C. Bruno (Genova)

- La terapia genica nel paziente asintomatico

R. Masson (Milano)

- La terapia genica per il trattamento della SMA<sup>94</sup>: uno studio osservazionale di pratica clinica

A. Varone (Napoli)

#### **17.00-17.30 PAUSA CAFFÈ**

#### **17.30-19.30 WORKSHOP 17**

##### ***Big Data nelle malattie neurologiche***

Moderatori: M. FILIPPI (Milano), M.A. ROCCA (Milano)

- Reti nazionali per la raccolta di Big Data: l'esperienza delle Reti degli Istituti  
F. TAGLIAVINI (Milano)
- I Big Data clinici in neurologia: l'esperienza del registro Sclerosi Multipla  
P. IAFFALDANO (Bari)
- I Big Data di Neuroimaging in neurologia  
L. STORELLI (Milano)
- I Big Data di laboratorio in neurologia  
M. GASTALDI (Pavia)

#### **17.30-19.30 WORKSHOP 18**

##### ***Accesso universale alle cure in Africa: epilessia e stroke***

Moderatori: F. IODICE (Roma), M. LEONE (Milano)

- Il Ministero della Salute, le patologie neurologiche di "importazione" e programmi sanitari in Africa  
G. REZZA (Roma)
- Accesso alle cure per l'epilessia e altre malattie neurologiche in Africa nei prossimi 10 anni  
M. PUGLIATTI (Ferrara)
- Accesso alle cure per epilessia e stroke in Africa e nei paesi in via di sviluppo: presente e futuro della telemedicina  
M. BARTOLO (Roma)
- L'Intersectoral Global Action Plan 2022-2031 in Africa e i giovani neurologi  
M. TAPPATÀ (Bologna)

#### **17.30-19.30 WORKSHOP 19**

##### ***Resilienza in Neurologia: teoria e aspetti pratici***

Moderatori: M. CORBETTA (Padova), A. PADOVANI (Brescia)

- Resilienza cerebrale e reti encefaliche  
R. BURIONI (Parma)
- Il Cervello Resiliente nell'Uomo: meccanismi e strategie  
L. PARRINO (Parma)
- Resilienza e Resistenza Cerebrale nell'Invecchiamento e nella Malattia di Alzheimer  
A. POGGESI (Firenze)

- Il contributo della TMS<sup>72</sup> e TMS<sup>72</sup>-EEG<sup>16</sup> nella comprensione dei meccanismi della Resilienza Cerebrale  
F. FERRERI (*Padova*)

### **17.30-19.30 WORKSHOP 20**

#### ***Tossina botulinica e disordini del movimento: quando, come e dove le iniezioni di tossina botulinica***

Moderatori: M.C. ALTAVISTA (*Roma*), F. BONO (*Catanzaro*)

- La tossina botulinica: meccanismi d'azione  
D. BELVISI (*Roma*)
- Nei disordini del movimento ipercinetici  
R. ERRO (*Salerno*)
- Nella malattia di Parkinson e nei Parkinsonismi  
A.R. BENTIVOGLIO (*Roma*)
- Nella spasticità dell'adulto  
N. SMANIA (*Verona*)

### **17.30-19.30 WORKSHOP 21**

#### ***Le atassie acquisite ed ereditarie***

Moderatori: G. DE MICHELE (*Napoli*), F. SANTORELLI (*Pisa*)

- Update sulle atassie ereditarie  
A. BRUSCO (*Torino*)
- Atassie degenerative non-ereditarie  
F. SANTORELLI (*Pisa*)
- Atassie paraneoplastiche e disimmuni  
C. COLOSIMO (*Terni*)
- Nuove prospettive terapeutiche nelle atassie ereditarie  
C. MARIOTTI (*Milano*)

### **17.30-19.30 WORKSHOP 22**

#### ***Aspetti controversi nelle malattie muscolari***

Moderatori: M. FILOSTO (*Brescia*), T. MONGINI (*Torino*)

- Il percorso diagnostico delle iperCKemie  
M. FILOSTO (*Brescia*)
- Statine e malattie muscolari  
A. TOSCANO (*Messina*)
- Miopatie infiammatorie: immunomodulatori o immunosoppressori?  
T. MONGINI (*Torino*)
- Correlazioni clinico-genetiche nella Distrofia Facio-Scapolo-Omerale  
G. RICCI (*Pisa*)

### **17.30-19.30 WORKSHOP 23**

#### ***Neuropatie: nuovi scenari di diagnosi e terapia***

Moderatori: C. BRIANI (*Padova*), G. LAURIA PINTER (*Milano*)

- Neuropatie infiammatorie: impatto dei nuovi criteri diagnostici nella pratica clinica

E. NOBILE-ORAZIO (*Milano*)

- Polineuropatie assonali croniche idiopatiche: un capitolo da rivisitare

G.M. FABRIZI (*Verona*)

- Neuropatie genetiche: novità dal gene discovery e nuove prospettive terapeutiche

C. PISCIOTTA (*Milano*)

- Neuropatia delle piccole fibre: un problema urgente

M. NOLANO (*Napoli*)

### **17.30-19.30 WORKSHOP 24**

#### ***Approccio al paziente con ictus monogenico***

Moderatori: M. MANCUSO (*Pisa*), M. SILVESTRINI (*Ancona*)

- CADASIL

A. BERSANO (*Milano*)

- Malattia di Fabry

A. BURLINA (*Bassano del Grappa, VI*)

- MELAS

C. LAMPERTI (*Milano*)

- Algoritmo diagnostico

M. MANCUSO (*Pisa*)

### **17.30-19.30 WORKSHOP 25**

#### ***Medicina predittiva ed identificazione di varianti di significato incerto (VUS) in neurologia***

Moderatori: V. SILANI (*Milano*), E.M. VALENTE (*Pavia*)

- Variante a significato incerto: di cosa si tratta?

A. DI FONZO (*Milano*)

- Refertazione di una VUS<sup>104</sup>: quando, come, perché?

E.M. VALENTE (*Pavia*)

- La comunicazione di un referto genetico al paziente ed ai familiari

P. MANDICH (*Genova*)

- Genetica e medicina predittiva in neurologia

E.S. BERTINI (*Roma*)

### **17.30-19.30 WORKSHOP 26**

#### ***Diagnostica e terapia del dolore neuropatico***

Moderatori: M. DE TOMMASO (*Bari*), R. LIGUORI (*Bologna*)

- Linee-guida congiunte EAN<sup>102</sup>-EFIC<sup>105</sup>-NeuPSIG<sup>106</sup> sulla diagnostica del dolore neuropatico

A. TRUINI (*Roma*)

- La diagnosi di neuropatia delle piccole fibre e il ruolo del danno neuroperiferico nella fibromialgia

V. DONADIO (*Bologna*)

- La terapia farmacologica del dolore neuropatico. Recenti evidenze su efficacia e sicurezza dei farmaci ad uso consolidato e nuove prospettive terapeutiche

N. ATTAL (*Paris, FR*)

- Dolore neuropatico farmacoresistente. Quali indicazioni per le procedure di neurostimolazione

M. LACERENZA (*Milano*)

## **6 Dicembre 2022**

### **9.00-11.00 COMUNICAZIONI ORALI SCLEROSI MULTIPLA 3**

MODERATORI: M.P. AMATO (FIRENZE) – N. DE STEFANO (SIENA)

#### **FUNCTIONAL CORRELATES OF INTELLIGENCE QUOTIENT AND COGNITIVE ABILITIES VARY ACCORDING TO MATURATION IN PEDIATRIC MS<sup>37</sup>**

L. CACCIAGUERRA (*Milano*)

#### **PREGNANCY OUTCOMES AFTER EXPOSURE TO DIMETHYL FUMARATE IN AN ITALIAN MULTICENTRIC COHORT OF WOMEN WITH MULTIPLE SCLEROSIS**

D. LANDI (*Roma*)

#### **PROGRESSION INDEPENDENT OF RELAPSE ACTIVITY IN PEDIATRIC-ONSET MULTIPLE SCLEROSIS**

E. PORTACCIO (*Firenze*)

#### **ASSOCIATION BETWEEN CEREBRAL BLOOD FLOW AND CLINICAL DISABILITY IN PROGRESSIVE MULTIPLE SCLEROSIS IN THE MS<sup>37</sup>-OPT<sup>107</sup> TRIAL BASELINE DATA**

A. BIANCHI (*London-UK*)

#### **DISABILITY ACCRUAL IS MAINLY DETERMINED BY PROGRESSION INDEPENDENT OF RELAPSE ACTIVITY IN A REAL-WORLD COHORT OF RELAPSING-ONSET MULTIPLE SCLEROSIS PATIENTS**

A. BELLINIA (*Firenze*)

#### **DETERMINANTS OF RELAPSE ASSOCIATED WORSENING IN AN ITALIAN REGISTRY COHORT: THE ROLE OF AGE AND PYRAMIDAL PHENOTYPE**

E. D'AMICO (*Foggia*)

#### **ASSESSING PREDICTORS OF NEDA-3 STATUS ACHIEVEMENT IN RELAPSING REMITTING MULTIPLE SCLEROSIS: A SINGLE CENTER EXPERIENCE**

T. GUERRA (*Bari*)

#### **A REDUCED SPECIFIC HUMORAL AND T-CELL RESPONSE TO THE THIRD DOSE OF MRNA COVID-19 VACCINE IN MULTIPLE SCLEROSIS PATIENTS UNDER IMMUNOSUPPRESSIVE THERAPIES**

F. DOMINELLI (*Roma*)

#### **INTRATHECAL INFLAMMATION AND CORTICAL DAMAGE ASSOCIATE WITH DISABILITY PROGRESSION INDEPENDENT OF RELAPSES IN EARLY MULTIPLE SCLEROSIS**

D. MARASTONI (*Verona*)

#### **PROFILING THE RISK OF SEVERE ADVERSE EVENTS DURING SEQUENCING THERAPIES IN PATIENTS WITH MULTIPLE SCLEROSIS: PRELIMINARY DATA FROM AN OBSERVATIONAL COHORT ANALYSIS BASED ON ITALIAN MULTIPLE SCLEROSIS REGISTRY**

D. PAOLICELLI (*Bari*)

#### **IMPACT OF HIGHLY ACTIVE IMMUNOTHERAPY ON ACUTE AND CHRONIC NEUROINFLAMMATION IN AGGRESSIVE MULTIPLE SCLEROSIS**

G. BOFFA (*Genova*)

**INTEGRATION OF THE EXPANDED DISABILITY STATUS SCALE WITH AMBULATION, VISUAL AND COGNITIVE TESTS, IMPROVES ASSESSMENT OF DISABILITY**

F. SACCÀ (*Napoli*)

**9.00-11.00 COMUNICAZIONI ORALI CASI CLINICI 3**

MODERATORI: M. ONOFRJ (CHIETI) – G. GIGLI (UDINE)

**LATE-ONSET MYASTHENIA GRAVIS AFTER COVID-19 VACCINE**

F. PIRRO (*Milano*)

**BASELINE SUBTLE NEUROLOGICAL SIGNS PREDICT FUTURE IMMUNE EFFECTOR CELL-ASSOCIATED NEUROTOXICITY SYNDROME (ICANS) IN PATIENTS WITH DIFFUSE LARGE B-CELL LYMPHOMA (DLBCL) TREATED WITH CAR-T THERAPY TISAGENLECLEUCEL**

L. FONTANELLI (*Pisa*)

**INCIDENT ANTI-LGI1 AUTOIMMUNE ENCEPHALITIS DURING DEMENTIA WITH LEWY BODIES: WHEN OCCAM RAZOR IS A DOUBLE-EDGED SWORD**

M. LOSA (*Genova*)

**INTRACRANIAL HYPERTENSION ASSOCIATED WITH IGG4-RELATED AUTOIMMUNE PANCREATITIS. IS IT A DIFFERENT SIDE OF THE SAME COIN?**

A. DE MARTINO (*Catanzaro*)

**A LIFE-THREATENING, NOVEL MUTATION, DELIVERY INDUCED, CARBAMOYL PHOSPHATE SYNTHETASE-1 DEFICIENCY ENCEPHALOPATHY TREATED BY DECOMPRESSIVE CRANIECTOMY**

S. CAPRONI, E. SENSI (*Terni*)

**CHOREA AND BASAL GANGLIA HYPERMETABOLISM AS INDICATORS OF APS<sup>107</sup> AND PROBABLE-APS<sup>107</sup>**

E. DALMATO SCHILKE (*Monza*)

**A CASE REPORT OF FAVA SYNDROME IN A YOUNG WOMAN CARRYING PIK3CA GENE MUTATION**

A. COSTAGLIOLA (*Siena*)

**ATYPICAL PRESENTATION OF NMDA-R ENCEPHALITIS OVERLAPPING CENTRAL NERVOUS SYSTEM DEMYELINATING SYNDROME: A CASE REPORT**

S. LANDOLFO (*Bari*)

**MULTIFOCAL CONTRAST-ENHANCING BRAIN LESIONS IN A PATIENT WITH RECENT SARS-COV 2 INFECTIONS: A CHALLENGING CASE**

E. G. TORRIGIANI (*Perugia*)

**CASE SERIES OF ANTI-MYELIN OLIGODENDROCYTE GLYCOPROTEIN SERUM POSITIVITY: IS THE CULPRIT THE INFECTION OR THE AUTOIMMUNE ATTACK?**

M. CACCAMO (*Bari*)

**ORGANIZATION AND IMPLEMENTATION OF A NOVEL OUTPATIENT CLINIC DEDICATED TO PATIENTS WITH UNDIAGNOSED DISEASES**

R. FANCELLU (*Genova*)

**PSYCHOGENIC NON-EPILEPTIC SEIZURES (PNES) IN THE COVID-19 PANDEMIC ERA: A SYSTEMATIC REVIEW WITH INDIVIDUAL PATIENT DATA ANALYSIS**

L. VELENO (*Chieti*)

**SUCCESSFUL TREATMENT OF CHRONIC MIGRAINE COMORBIDS WITH MYASTHENIA GRAVIS AND ARTHRITIS WITH MONOCLONAL ANTIBODY AGAINST CGRP: A CASE REPORT**

C. ABAGNALE (*Latina*)

**9.00-11.00 COMUNICAZIONI ORALI MALATTIE CEREBROVASCOLARI 2**

MODERATORI: E. AGOSTONI (MILANO) – L. PANTONI (MILANO)

**CEREBRAL SMALL VESSEL DISEASE MARKERS ARE ASSOCIATED WITH LESS TISSUE SALVAGE IN ACUTE ISCHEMIC STROKE TREATED WITH INTRAVENOUS THROMBOLYSIS**

S. FERRETTI (*Firenze*)

**CHARACTERISTICS AND OUTCOMES IN NON-ANEURYSMAL COMPARED WITH ANEURYSMAL SUBARACHNOID HEMORRHAGE IN A POPULATION-BASED STUDY**

C. RAGAGLINI (*L'Aquila*)

**THE PRESTO STUDY: A PUBLIC AWARENESS CAMPAIGN FOR RAPID RECOGNITION OF STROKE SYMPTOMS**

I. GANDOGLIA, (*Genova*)

**THROMBECTOMY IN CERVICAL ARTERY DISSECTION RELATED STROKE: A CHALLENGE OR AN OPPORTUNITY?**

F. FAVRUZZO (*Padova*)

**CLINICAL AND SUBCLINICAL ATHEROSCLEROSIS IN PATIENTS WITH MIGRAINE WITH AURA IN A COHORT OF YOUNG PATIENTS WITH STROKE**

M. MARCOSANO (*Roma*)

**CLINICAL AND RADIOLOGIC FEATURES OF TREATED PATIENTS WITH ACUTE ISCHEMIC STROKE DUE TO MEDIUM VESSELS OCCLUSIONS**

F. RIZZO (*Barcelona-E*)

**EFFICACY AND SAFETY OF REPERFUSION TREATMENTS IN DISABLING VERSUS NON-DISABLING MILD STROKE DUE TO ANTERIOR CIRCULATION VESSEL OCCLUSION: A PROPENSITY SCORE MATCHED ANALYSIS**

G. SCHWARZ (*Milano*)

**NON CONTRAST COMPUTED TOMOGRAPHY PREDICTORS OF INTRACEREBRAL HEMORRHAGE EXPANSION: THE EFFECT OF ONSET-TO-SCAN TIME**

V. MAZZOLENI (*Brescia*)

**PROPRANOLOL FOR THE TREATMENT OF FAMILIAL CAVERNOUS MALFORMATIONS: THE TREAT\_CCM<sup>109</sup> STUDY**

S. LANFRANCONI (*Milano*)

**DYNAMIC BRAIN STATES IN SPATIAL NEGLECT AFTER STROKE**

A. DIGIOVANNI (*Chieti*)

**VALIDATION OF COMBINED SCORE ASSESSING ASPECTS AND COLLATERAL VESSEL STATUS FOR OUTCOME PREDICTION IN LARGE-VESSEL OCCLUSION ACUTE ISCHEMIC STROKE**

M. VABANESI (*Milano*)

**THE IMPACT OF REPERFUSION TREATMENTS ON OUTCOME OF MIDDLE-OLD AND OLDEST-OLD STROKE PATIENTS**

G. VITICCHI (*Ancona*)

**9.00-11.00 COMUNICAZIONI ORALI DISORDINI DEL MOVIMENTO 2**

MODERATORI: A. NICOLETTI (CATANIA) – M. TINAZZI (VERONA)

**SENSITIVITY AND SPECIFICITY OF CLINICAL AND KINEMATIC MEASURES OF BRADYKINESIA IN PATIENTS WITH PARKINSON'S DISEASE AND ESSENTIAL TREMOR AND IN ELDERLY HEALTHY SUBJECTS**

G. PAPARELLA (*Pozzilli-IS*)

**NEUROIMAGING AS A POTENTIAL TOOL FOR DRIVING DBS<sup>110</sup> STIMULATION IN PD<sup>50</sup>**

C. CAMPISI (*Torino*)

**CORRELATION OF OBJECTIVE GAIT AND BALANCE MEASURES WITH COGNITIVE PERFORMANCE IN PARKINSON'S DISEASE**

C. A. ARTUSI (*Torino*)

**CORRELATION BETWEEN COGNITIVE IMPAIRMENT AND OLFACTORY DISORDER IN PATIENTS WITH PARKINSON'S DISEASE**

T. ERCOLI (*Cagliari*)

**MOBILE HEALTH TECHNOLOGY IDENTIFIES GAIT IMPAIRMENT IN NEWLY DIAGNOSED PARKINSON'S DISEASE**

C. ZATTI (*Brescia*)

**ASYMMETRY OF BRADYKINESIA FEATURES IN PARKINSON'S AND INTERHEMISPHERIC INHIBITION IMBALANCE**

M. DE RIGGI (*Roma*)

**VALIDATION OF NEW DIAGNOSTIC CRITERIA FOR FATIGUE IN PATIENTS WITH PARKINSON'S DISEASE**

M. SICILIANO (*Napoli*)

**NEURODEGENERATION AND INFLAMMATION IN PARKINSON'S DISEASE: AN INSIGHT FROM BLOOD BIOMARKERS**

G. DI LAZZARO (*Roma*)

**CORTICAL THINNING IN PATIENTS WITH VASCULAR PARKINSONISM: PRELIMINARY FINDINGS FROM CORTICAL THICKNESS EVALUATION**

F. NOVELLINO (*Catanzaro*)

**THE PHENOMENON OF SPREAD TO AN ADDITIONAL BODY SITE IN PATIENTS WITH FUNCTIONAL MOTOR DISORDERS**

T. ERCOLI (*Cagliari*)

**MRGFUS<sup>98</sup> THALAMOTOMY MAY SPARE DOPAMINERGIC THERAPY IN EARLY-STAGE TREMOR-DOMINANT PD<sup>50</sup>: A PILOT STUDY**

N. GOLFRE' ANDREASI (*Milano*)

**ASYMMETRY AND SIDE CONCORDANCE OF REST TREMOR AND BRADYKINESIA IN PATIENTS WITH ESSENTIAL TREMOR**

L. ANGELINI (*Roma*)

**10.00-11.00 COMUNICAZIONI ORALI DEMENZA E INVECCHIAMENTO 2**

MODERATORI: S. CAPPÀ (PAVIA) – G. SORRENTINO (NAPOLI)

**DIFFERENT RELATIONSHIP BETWEEN CEREBROSPINAL FLUID ATN BIOMARKERS AND NEUROFILAMENT LIGHT CHAIN (NFL) IN ALZHEIMER'S DISEASE AND FRONTOTEMPORAL LOBAR DEGENERATION SPECTRUM**

G. M. GIUFFRÈ (*Roma*)

**LATE ONSET FRONTAL SYNDROME: DIFFERENTIATION BETWEEN FRONTOTEMPORAL DEMENTIA AND PRIMARY PSYCHIATRIC DISORDER USING VISUAL RATING SCALES OF ATROPHY**

G. G. FUMAGALLI (*Milano*)

**EEG<sup>16</sup> CORRELATES IN THE THREE VARIANTS OF PRIMARY PROGRESSIVE APHASIA**

G. CECCHETTI (*Milano*)

**PLASMA NEUROFILAMENT LIGHT CHAIN PREDICTS ALZHEIMER'S PATHOLOGY AND PROGRESSION OF COGNITIVE DECLINE IN PATIENTS WITH SUBJECTIVE COGNITIVE DECLINE AND MILD COGNITIVE IMPAIRMENT**

S. MAZZEO (*Firenze*)

**UNRAVELLING NEUROTRANSMITTERS IMPAIRMENT IN PRIMARY PROGRESSIVE APHASIAS**

I. MATTIOLI (*Brescia*)

**EYE MOVEMENTS ABNORMALITIES IN ALZHEIMER'S DISEASE AND DEMENTIA WITH LEWY BODIES**

S. MOZZETTA (*Padova*)

**9.00-11.00 COMUNICAZIONI ORALI NEUROIMMUNOLOGIA E NEUROINFETTIVOLOGIA**

MODERATORI: E. NOBILE-ORAZIO (MILANO) – L. MASSACESI (FIRENZE)

**SIGNIFICANCE OF MOG<sup>40</sup> ANTIBODIES IN CSF<sup>89</sup>: A RETROSPECTIVE MULTICENTRE STUDY**

S. CARTA (*Verona*)

**ASSESSMENT OF DIFFERENT CLINICAL DIAGNOSTIC CRITERIA FOR ATYPICAL CHRONIC INFLAMMATORY DEMYELINATING POLYRADICULONEUROPATHY**

A. DE LORENZO (*Rozzano-MI*)

**EFFECT OF NATIONAL SHORTAGE OF IVIG<sup>111</sup> ON PATIENTS WITH CHRONIC IMMUNE MEDIATED PERIPHERAL NEUROPATHIES?**

J. PEPYS (*Milano*)

**SPATIAL ASSOCIATION BETWEEN GENE EXPRESSION AND BRAIN DAMAGE IN NEUROMYELITIS OPTICA SPECTRUM DISORDERS**

L. CACCIAGUERRA (*Milano*)

**LABORATORY DIAGNOSTIC STRATEGIES FOR IDENTIFICATION OF ANTIBODIES AGAINST NEURONAL SURFACE ANTIGENS IN AUTOIMMUNE ENCEPHALITIS**

S. MASCIOCCHI (*Pavia*)

**COMPARISON OF FIXED AND LIVE CELL-BASED ASSAY FOR THE DETECTION OF ACHR<sup>112</sup> AND MUSK ANTIBODIES IN MYASTHENIA GRAVIS**

V. DAMATO (*Firenze*)

**BIOMARKERS OF NEURONAL AND GLIAL DAMAGE IN SUSAC SYNDROME**

D. PLANTONE (*Siena*)

**CENTRAL NERVOUS SYSTEM IMMUNE-RELATED DISORDERS AFTER SARS-COV-2 VACCINATION: A MULTICENTER STUDY**

S. TARTAGLIA (*Udine*)

**SIX-MONTH HUMORAL AND CELLULAR RESPONSE TO MRNA SARS-COV-2 VACCINES IN PATIENTS WITH AUTOIMMUNE NEUROLOGICAL DISORDERS AND ROLE OF THE THIRD DOSE**

M. P. GIANNOCARO (*Bologna*)

**NEUROFILAMENT LIGHT-CHAIN AND CSF PARAMETERS DO NOT CHANGE AFTER SARS-COV-2 VACCINATION**

S. IACONO (*Palermo*)

**PACHYMENINGITIS IN GRANULOMATOSIS WITH POLYANGIITIS: A CASE REPORT**

C. GALLO (*Novara*)

**AGE RELATED PROGNOSIS AND RE-CHALLENGE IN NEUROLOGICAL COMPLICATIONS OF IMMUNE CHECKPOINT INHIBITORS (ICI)**

J. PEPYS (*Milano*)

**9.00-11.00 COMUNICAZIONI ORALI MALATTIE NEUROMUSCOLARI**

MODERATORI: A. SCHENONE (GENOVA) – G.P. COMI (MILANO)

**RISK OF RELAPSE AFTER COVID-19 VACCINATION IN PATIENTS WITH CHRONIC INFLAMMATORY NEUROPATHIES AND SAFETY AND TOLERABILITY OF THE COVID-19 VACCINES**

P. E. DONEDDU (*Milano*)

**HELIOS-A: STUDY OF VUTRISIRAN IN PATIENTS WITH HATTR AMYLOIDOSIS**

L. P. OBICI (*Pavia*)

**PATISIRAN GLOBAL OPEN-LABEL EXTENSION STUDY AT 36 MONTHS: EFFECT OF LONG-TERM TREATMENT ON MORTALITY AND AMBULATORY FUNCTION IN PATIENTS WITH HATTR AMYLOIDOSIS WITH POLYNEUROPATHY**

M. LUIGETTI (*Roma*)

**HEREDITARY TRANSTHYRETIN AMYLOIDOSIS IN THE NEUROLOGIC CLINIC: WHEN SHOULD WE THINK ABOUT IT? THE RESULTS FROM 24 MONTHS OF SYSTEMATIC SCREENING**

V. DI STEFANO (*Palermo*)

**X-LINKED EMERY-DREIFUSS MUSCULAR DYSTROPHY: A MULTICENTER ITALIAN COHORT STUDY**

A. ELKOUSH (*Milano*)

**IMAGING OF NEURALGIC AMYOTROPHY IN THE ACUTE PHASE**

P. RIPELLINO (*Lugano-CH*)

**ELEVATED SERUM NEUROFILAMENT LIGHT CHAIN (NFL) AS A POTENTIAL BIOMARKER OF NEUROLOGICAL INVOLVEMENT IN MYOTONIC DYSTROPHY TYPE 1 (DM1)**

S. ROSSI (*Roma*)

**ITALIAN DATABASE ON MULTIFOCAL MOTOR NEUROPATHY (IDAM): DATA FROM THE FIRST 100 INCLUDED PATIENTS**

E. NOBILE ORAZIO (*Milano*)

**TREATMENT OF REFRACTORY GMG<sup>76</sup> PATIENTS WITH ECUZUMAB AND EFGARTIGIMOD: A CASE SERIES**

N. CUOMO (*Napoli*)

**PRIMARY MITOCHONDRIAL MYOPATHY: 12-MONTH FOLLOW-UP RESULTS OF AN ITALIAN COHORT**

V. MONTANO (*Pisa*)

**CLINICAL AND NEUROPHYSIOLOGICAL RECOVERY OF CHRONIC MOTOR NEUROPATHY DUE TO ACUTE INTERMITTENT PORPHYRIA AFTER GIVOSIRAN TREATMENT. THE CASE OF A 12-YEAR-OLD PATIENT WITH CHILDHOOD-ONSET DISEASE**

M. MAZZOLI (*Modena*)

**PREVALENCE AND CHARACTERISTICS OF PERIPHERAL NEUROPATHY IN PATIENTS WITH PSORIASIS AND PSORIATIC ARTHRITIS**

F. CARTA (*Rozzano-MI*)

**10.00-11.00 COMUNICAZIONI ORALI NEUROONCOLOGIA**

MODERATORI: A. MAURO (TORINO) – E. MARCHIONI (PAVIA)

**STAT3 EXPRESSION IN BRAIN METASTASES FROM BREAST CANCER: CORRELATIONS WITH DIFFERENT MOLECULAR SUBTYPES AND CLINICAL OUTCOME**

A. PELLERINO (*Torino*)

**CLINICAL CHARACTERISTICS, TREATMENT MODALITIES, AND OUTCOME OF A COHORT OF 42 ADULT PATIENTS WITH EPENDYMAL TUMOURS OF THE BRAIN: A PILOT ANALYSIS WITHIN MOLECULAR SUBGROUPS**

F. BRUNO (*Torino*)

**PATIENT AND CARER INVOLVEMENT IN THE FORMULATION OF THE CLINICAL QUESTIONS: THE GUIDELINE ON PALLIATIVE CARE IN ADULTS WITH GLIOMA**

A. SOLARI (*Milano*)

**PLASMA CFDNA LIQUID BIOPSY IN THE FOLLOW-UP OF HIGH-GRADE GLIOMAS**

V. PIERI (*Milano*)

**CAR-T RELATED NEUROTOXICITY: A SINGLE CENTER EXPERIENCE AND APPLICATION OF MULTIVARIABLE PREDICTIVE SCORES**

B. RISI (*Brescia*)

**WHITE MATTER DENSITY PREDICTS OVERALL SURVIVAL IN GLIOBLASTOMA: A NEW CONNECTIVITY FRAMEWORK FOR BRAIN TUMORS**

A. SALVALAGGIO (*Padova*)

**10.00-11.00 COMUNICAZIONI ORALI SONNO**

MODERATORI: L. FERINI-STRAMBI (MILANO) – G. PLAZZI (BOLOGNA)

**CEREBROSPINAL-FLUID BIOMARKERS OF NEURODEGENERATION AND BLOOD-BRAIN BARRIER DYSFUNCTION MAY BE USEFUL TO PREDICT THE PHENOCONVERSION TO ALPHA-SYNUCLEINOPATHIES IN PATIENTS WITH ISOLATED REM SLEEP BEHAVIOUR DISORDER**

C. CALVELLO (*Roma*)

**DEFINITION OF SLEEP MACRO AND MICROSTRUCTURE OF PATIENTS WITH A SELECTIVE STROKE OF THE BASAL GANGLIA CONSEQUENT TO SUCCESSFUL MECHANICAL THROMBECTOMY: AN OBSERVATIONAL, COHORT STUDY**

I. SCALA (*Roma*)

**CYCLIC ALTERNATING PATTERN IN TEMPORAL LOBE EPILEPSY WITH OR WITHOUT OBSTRUCTIVE SLEEP APNEA SYNDROME**

A. ROMIGI (*Pozzilli-IS*)

**SEX-RELATED DIFFERENCES IN SYMPTOMS AND IMPAIRMENT IN PATIENTS WITH NARCOLEPSY: FINDINGS FROM THE TENAR PROJECT**

F. INGRAVALLO (*Bologna*)

**THE COMBINATION OF REBOXETINE AND HYOSCINE BUTYLBROMIDE GREATLY IMPROVES COGNITION IN OBSTRUCTIVE SLEEP APNEA PATIENTS. AN OBSERVATIONAL REAL-WORLD 3-MONTHS FOLLOW-UP STUDY**

S. GIROLAMI (*Sulmona-AQ*)

**EPIGENETIC CLOCKS SUGGEST ACCELERATED AGEING IN PATIENTS WITH ISOLATED REM<sup>80</sup> SLEEP BEHAVIOR DISORDER**

L. BALDELLI (*Bologna*)

**11.00-11.30 PAUSA CAFFÈ****11.30-13.30 SESSIONE PLENARIA*****Diagnosi e prognosi dei disturbi protratti della coscienza***

Moderatori: M. MASSIMINI (*Milano*), G. TEDESCHI (*Napoli*)

- Diagnosi e stratificazione fisiopatologica

M. MASSIMINI (*Milano*)

- Evoluzione clinica e indici prognostici

A. ESTRANEO (*Nola, NA*)

- Strategie innovative per una valutazione multimodale diagnostica e prognostica

A. SODDU (*Western Ontario, CAN*)

- Approcci riabilitativi e terapeutici

R. FORMISANO (*Roma*)

**13.30 CHIUSURA DEI LAVORI CONGRESSUALI**

**SIGLE PRESENTI NEL PROGRAMMA:**

|    |                                                                |
|----|----------------------------------------------------------------|
| 1  | ALS Amyotrophic Lateral Sclerosis                              |
| 2  | BDNF Brain-derived neurotrophic factor                         |
| 4  | BPAN neurodegenerazione associata alla proteina beta-propeller |
| 5  | BUN blood urea nitrogen                                        |
| 7  | CGRP Calcitonin Gene Related Peptide                           |
| 9  | CNS Central Nervous System                                     |
| 10 | CIS Sindrome Clinicamente Isolata                              |
| 12 | CT Computed Tomography                                         |
| 13 | DTI risonanza magnetica (RM) con tensore di diffusione         |
| 14 | FTD Fronto Temporal Disease                                    |
| 16 | EEG elettroencefalografia                                      |
| 17 | EMG Elettromiografia                                           |
| 18 | DMD Disease Modifying Drugs                                    |
| 29 | GAA Glucogenic Ammino Acids                                    |
| 30 | IMNM Immune-Mediated Necrotizing Myopathy                      |
| 31 | GNE glucosamine                                                |
| 32 | NIH National Institutes of Health                              |
| 35 | MAGNIMS Magnetic Resonance Imaging in MS                       |
| 36 | MRI Magnetic Resonance Imaging                                 |
| 37 | MS Multiple Sclerosis                                          |
| 38 | MOG-IgG myelin oligodendrocyte glycoprotein antibody           |
| 39 | NODDI neurite orientation dispersion and density imaging       |
| 40 | MOG myelin oligodendrocyte glycoprotein                        |
| 41 | NEDA no evidence of disease activity                           |
| 42 | NEXMIF Neurite Extension And Migration Factor                  |
| 43 | Nfl neurofilament light                                        |
| 44 | NGS NEXT-GENERATION SEQUENCING                                 |
| 45 | NMDAr N-Methyl-D-Aspartate Receptor                            |
| 46 | NMO neuromielite ottica                                        |
| 47 | NMOSD disturbo dello spettro della neuromielite ottica         |
| 48 | NMDA N-Methyl-D-Aspartate                                      |
| 50 | PD Parkinson Disease                                           |
| 52 | PET positron emission tomography                               |
| 57 | PNES convulsioni psicogene non epilettiche                     |
| 58 | PS Pronto Soccorso                                             |
| 60 | RM Risonanza magnetica                                         |
| 61 | RMN Risonanza Magnetica Nucleare                               |
| 63 | RTCs riflesso tonico asimmetrico cervicale                     |
| 66 | SM Sclerosi Multipla                                           |
| 68 | SSN Servizio Sanitario Nazionale                               |
| 69 | FUS Focused Ultrasound                                         |
| 72 | TMS Transcranial Magnetic Stimulation                          |
| 73 | TTR transtiretina                                              |
| 74 | CLN6 proteina neuronale 6 ceroide-lipofuscinosi                |

|     |                                                                  |
|-----|------------------------------------------------------------------|
| 75  | TIA attacchi ischemici transitori                                |
| 76  | gMG miastenia grave generalizzata                                |
| 77  | RWE Real World Evidence                                          |
| 78  | PDTA Percorsi Diagnostico Terapeutici Assistenziali              |
| 79  | HCV Hepatitis C Virus                                            |
| 80  | REM Rapid Eye Movements                                          |
| 81  | RRMS sclerosi a placche dirimessa                                |
| 82  | MOGAD Myelin Oligodendrocyte Glycoprotein Antibody Disorders     |
| 83  | TSA tronchi sovraortici                                          |
| 84  | TAC Tomografia assiale computerizzata                            |
| 85  | SLA Sclerosi Lateral Amiotrofic                                  |
| 86  | SNC Sistema nervoso centrale                                     |
| 87  | SIN Società Italiana di Neurologia                               |
| 88  | OSA Obstructive Sleep Apnea                                      |
| 89  | CSF Cerebral Spinal Fluid                                        |
| 90  | FDG Fluorodesossiglucosio                                        |
| 91  | DM Decreto Ministeriale                                          |
| 92  | miRNA - micro RiboNucleic Acid                                   |
| 93  | vs Versus                                                        |
| 94  | SMA atrofia muscolare spinale                                    |
| 95  | OCT Tomografia Ottica                                            |
| 96  | IGM Immunoglobuline M                                            |
| 97  | MR Magnetic Risonance                                            |
| 98  | MRgFUS Magnetic Resonance guided Focused Ultrasound Surgery      |
| 99  | VIM nucleo ventrale intermedio                                   |
| 100 | FMRI Risonanza Magnetica Funzionale                              |
| 101 | CMT Charcot-Marie-Tooth                                          |
| 102 | EAN European Accademy of Neurology                               |
| 103 | IRCCS Istituti di Ricovero e Cura a Carattere Scientifico        |
| 104 | VUS Variante Significato Incerto                                 |
| 105 | EFIC European Pain Federation                                    |
| 106 | NeuPSIG Neuropathic Pain SIG                                     |
| 107 | OPT ortopantomografia                                            |
| 108 | APS Antiphospholipid syndrome                                    |
| 109 | Treat-ccm clinical trial-a multicenter randomized clinical trial |
| 110 | DBS Deep Brain Stimulation                                       |
| 111 | IVIG immunoglobuline per uso endovenoso                          |
| 112 | (AChR) Anticorpi anti-recettore dell'acetilcolina                |

## DESCRIZIONE CASI CLINICI 1, 2, 3

### EVOLUTION OF POLYSOMNOGRAPHIC FEATURES IN A PATIENT WITH CASPR-2 ANTIBODY-ASSOCIATED LIMBIC ENCEPHALITIS

Background: Antibodies to neuronal surface protein contactin associated protein like 2 (CASPR-2) are related to a broad spectrum of disorders, including Morvan's syndrome, limbic encephalitis (LE) and acquired neuromyotonia. Hallmarks of these syndromes are sleep disorders such as insomnia, REM behavioral disorders, agrypnia excitata or hypersomnia. We describe here the evolution of the polysomnographic (PSG) pattern in a patient with CASPR-2 LE related insomnia. Clinical Case: A 63-year-old man referred to our Department with a 1-year history of epileptic seizures, mnesic deficiency, mood changes with increased anxiety and irritability and, most of all, with a remarkable daytime sleepiness (23/24 Epworth Sleepiness Scale). Medical history was silent except for vocal cord leucoplakia surgically removed 2 years earlier. Brain MRI did not show significant abnormalities. The first polysomnography showed Total Sleep Time (TST) of 4 hours and 47 minutes: REM sleep was undetectable; NREM sleep was highly fragmented and undifferentiated, with the absence of vertex sharp waves, K complexes and sleep spindles. There was no clear organization in sleep cycles and only two longer periods of sleep were recorded (one in the morning and the other at night), of 64 and 72 minutes, respectively. Laboratory investigations showed positive anti CASPR-2 antibodies in both serum and liquor. CSF analysis showed increased IgG index. Brain PET showed slight reduction of cortical metabolism in the right mesial temporal lobe and upper parietal regions, with increased uptake of striated nuclei. Based on these results, patient was treated with Solumedrol 1 g / day for 5 days, followed by administration of IVIG 2 gr/kg once a month for three cycles. After the treatment patient referred mnesic and mood improvement while daytime sleepiness gradual decreases. The fourth IVIG administration was interrupted for an adverse event and at that time we performed a second polysomnography. This showed a slight improvement: we observed a reorganization in cycles with the reappearance of REM sleep (7% of TST) and of sleep physiological figures, with N2 representing 51.5 % of TST. A new polysomnography is planned after 1 year. Discussion and conclusion: In a treated patient with CASPR-2 antibody-associated limbic LE, PSG showed recovery of sleep structures in parallel with a remarkable general clinical improvement of the patient, who returned to normal working activities. PSG studies may provide interesting data to increase the awareness regard this rare condition and to better understand the role of CASPR2 in CNS.

### A CASE OF HEIDENHEIN VARIANT OF CREUTZFELDT-JACOB DISEASE PRESENTING WITH CEREBRAL VASOCONSTRICTION

Background and aims Creutzfeldt-Jacob Disease (CJD) is a rare neurodegenerative disorder caused by abnormal deposits of misfolded prion protein (PrP); its tumultuous course and variable clinical characteristics constitute a diagnostic challenge in initial stages. To our knowledge, there are no reports describing the copresence of cerebral vasoconstriction, even if there are evidences of PrP deposits around cerebral vessels and altered cerebral vasoreactivity: by describing our case, we could give impulse to further investigate this association. Methods and Results A 54-year-old woman with a 3-year history of recurrent severe headaches followed by dizziness and nausea was hospitalized complaining unremitting and worsening symptomatology and exhibiting a brain MRI showing FLAIR and DWI hyperintensity of multiple bilateral cortical gyri in parieto-occipital and frontal regions suspected for strokes. Her neurological examination showed bilateral ataxia, hyperreflexia, fragmented speech and movements. EEG evidenced generalized theta-delta activity with runs of epileptic waves, while chemical, microscopic and bacterial CSF examination was normal. General blood test, thrombophilic, autoimmune, viral and neoplastic screening were unremarkable. Carotid duplex, transcranial Doppler ultrasound and MRI angiography showed normal findings. She was submitted to cerebral angiography, bilaterally showing a threadlike appearance of the distal tract of anterior, middle and posterior cerebral arteries and posterior inferior cerebellar arteries. Steroid and later vasodilative therapies (supposing a primary cerebral vasculitis and a cerebral vasoconstriction syndrome respectively) were not effective, while patient's condition steeply worsened in the first two weeks, with Balint and Gerstmann syndrome, bradykinesia, diplopia, nystagmus and bilateral Babinski sign. In a second MRI slight swelling and hyperintensity of right caudate and lenticular nuclei appeared. The high suspicion of CJD was supported by a new EEG, revealing more pronounced delta

activity, interrupted by triphasic waves sequences. A cerebral 18F-FDG PET showed marked cortical hypometabolism, mostly in posterior regions. Completion of CSF analysis showed high levels of tau, low  $\beta$ -C1-42 amyloid and absent 14.3.3 protein, while RT-QuIC was positive for PrP. At the third week the patient appeared lethargic and abulic, with ophthalmoplegia, diffuse plastic hypertonia and dystonia, apraxia, ataxia and myoclonus; a follow-up EEG registered diffuse triphasic delta waves. The patients was eventually transferred to another facility, where her conditions progressively worsened until death. A post-mortem Western Blot analysis of the cerebral autaptic specimens was positive for PrP. Conclusion Our observations constitute the first report of cerebral vasoconstriction associated to CJD. More observations are needed in order to shed new light on the disease pathogenic mechanisms.

### **A NOVEL GRN MUTATION IN AN ITALIAN PATIENT WITH NON-FLUENT VARIANT OF PRIMARY PROGRESSIVE APHASIA AT ONSET: A LONGITUDINAL CASE REPORT**

**Objectives:** Progranulin gene (GRN) mutations are major causes of frontotemporal lobar degeneration. Here we report the clinical presentation and evolution of a case with a novel GRN mutation and non-fluent language disturbances. **Materials and Method:** A 60 years-old Caucasian right-handed woman was admitted to the Neurology Unit of the Azienda Sanitaria Locale of Vercelli. Her disturbances had one-year onset and were characterized by phonemic paraphasias, agrammatism, anomias, deficits in repetition and comprehension of sentences. Mild disturbances in computing calculations, verbal memory and executive functions were also present. She reported positive family history for cerebrovascular diseases. During hospitalization, she underwent neurological and neuropsychological examinations, positron emission tomography (PET) and cerebrospinal fluid (CSF) sample. At the hospital discharge she was addressed to San Raffaele Hospital in Milan, where she underwent blood sampling for genotyping, a 3T MRI scan, and a comprehensive neuropsychological assessment. These latter visits were carried out again after six months. **Results:** Genotyping revealed a new GRN p.H340Tfsx21 mutation. Comprehensive neuropsychological assessment, performed shortly after the first hospitalization, showed a worsening of speech and comprehension deficits, as well as the appearance of apraxia of speech, orofacial apraxia, and difficulties in the attribution of others' intentions and emotions. PET showed a pattern of hypometabolism in the left fronto-insular, fronto-temporal and temporo-lateral regions and in the basal-ganglia (left>right). The first MRI scan reported left sylvian-perisylvian and fronto-opercular atrophy and prevalent left frontal periventricular white matter hyperintensities (WMHs). CSF analysis showed slightly increased total tau with normal phosphorylated tau and amyloid  $\beta$  levels. At that time, she received a clinical diagnosis of nonfluent variant of primary progressive aphasia (nfvPPA). After six months, language deficits worsened (including also single-word comprehension deficits), together with attention and executive functions. She presented also with apathy, spontaneity, hyperorality and preference for sweet foods. MRI examination performed after six months revealed a progressive atrophy in the left frontal-opercular and temporo-mesial region. **Discussion:** The new GRN p.H340Tfsx21 mutation resulted in a case of nfvPPA characterized by fronto-insular, temporal and striatal hypometabolism and atrophy, typical frontal asymmetric WMHs, and a fast progression towards a widespread cognitive and behavioral impairment, which reflects a frontotemporal lobar degeneration. **Conclusions:** This is the first report of the occurrence of the GRN p.H340Tfsx21 mutation in PPA. Our findings extend the current knowledge of the phenotypic heterogeneity among GRN mutation carriers.

### **COVID-19 COURSE AND OUTCOMES AFTER THREE mRNA VACCINE DOSES IN MULTIPLE SCLEROSIS PATIENTS TREATED WITH HIGH EFFICACY DMTs.**

**Objectives:** High-efficacy (HE) disease-modifying therapies (DMTs) for Multiple Sclerosis (MS), such as anti-CD20 monoclonal antibodies - i.e., Ocrelizumab (OCR) and Rituximab - may worsen COVID-19 course. Preliminary data suggest that two doses of mRNA COVID-19 vaccine (RNA-Vax) reduce the risk of breakthrough/severe COVID-19 in patients with MS (pwMS) under treatment with HE-DMTs. Little is known about the protective effect of a third booster dose of RNA-Vax in pwMS treated with most commonly used HE-DMTs, such as Natalizumab (NTZ), Fingolimod (FNG), and OCR. The aim of our study was to compare COVID-19 course and outcomes in pwMS on NTZ, FNG, and OCR after receiving the third dose of RNA-Vax. **Methods:** Inclusion criteria were: >18 years old, being treated with NTZ/OCR/FNG since the first vaccine

dose, diagnosis of COVID-19 after a third booster dose of RNA-Vax, not being treated with steroids within the month prior to any vaccine dose or COVID-19. Results: 232 pwMS (63 NTZ, 106 OCR, 63 FNG) from 17 Italian MS centers were included in the analysis. pwMS on NTZ ( $37\pm 9$ ) were younger than those on OCR ( $42\pm 10$ ,  $p=0.026$ ) and FNG ( $43\pm 11$ ,  $p=0.006$ ); EDSS was higher in pwMS on OCR (3.0, IQR=1.5-5.5) than those on FNG (2.0, IQR=1.0-3.0,  $p=0.017$ ). COVID-19 was diagnosed  $65\pm 41$  days after receiving the third booster dose. PwMS on OCR compared with those on NTZ showed more frequently (p38°C (53.8% vs 20.6%), cough (67% vs 36.5%), dyspnea (18.9% vs 3.2%), longer symptoms duration ( $9.5\pm 8.7$  vs  $6\pm 4.6$  days), use of NSAIDs (74.5% vs 52.4%), oxygen (7.5% vs 0%), antibiotics (45.3% vs 14.3%). PwMS on OCR compared with those on FNG needed more frequently the use of oxygen (7.5% vs 1.6%,  $p=0.002$ ). PwMS on FNG compared with those on NTZ showed more frequently (p38°C (39.7% vs 20.6%), cough (65.1% vs 36.5%), dyspnea (15.9% vs 3.2%). There were no differences between the 3 groups of pwMS regarding: COVID-19 treatment with steroids or monoclonal antibodies, hospitalization, and full recovery or death (0%). Discussion: Breakthrough COVID-19 after a third booster dose of RNA-Vax was more symptomatic in pwMS on OCR and FNG than those on NTZ. Nevertheless, no deaths were reported and the Covid-19 course in terms of full recovery and hospitalization rates was not different across different HE-DMTs. Conclusions: These results support the efficacy of a third booster dose of RNA-Vax in preventing severe COVID-19 (with hospitalization/death) in pwMS treated with most common HE-DMTs.

### **AN ATYPICAL ADRENOLEUKODYSTROPHY: A CASE REPORT**

**INTRODUCTION** X-linked adrenoleukodystrophy (X-ALD) is a peroxisomal fatty acid beta-oxidation disorder, caused by mutation on the ABCD1 gene on Xq28, that results in accumulation of very-long-chain-fatty-acids in all body tissues and demyelination of the white matter. **CASE PRESENTATION** A 44 year-old man came to our attention in 2021 for worsening of a previous speech disorder, appeared in 2020 after an head trauma, and a new-onset cognitive impairment. He had a progressive gait disorder started in 2004. Two out of his four brothers suffered from spastic paraparesis. Neurological evaluation reported fluent aphasia, verbal reiteration, bilateral lower limbs dragging, hypertonus, brisk tendon reflexes, clonus and bilateral extensor plantars. MRI showed bilateral and asymmetric hyperintense signals in the parieto-temporal-frontal subcortical white matter, splenium of the corpus callosum and bilateral internal capsules. MR spectroscopy demonstrated a choline spike. Routine blood tests, autoimmune screening and cerebrospinal fluid were normal. A demyelination peripheral neuropathy was present on electrophysiological testing. Brain biopsy showed a lymphohistocytic inflammatory infiltrate and reactive gliosis. Clinical, familiar, radiological and biopsy findings raised the suspicion of an inherited leukoencephalopathy. The diagnosis of adrenoleukodystrophy was confirmed by identification of a pathogenic mutation in the ABCD1 gene: c.1847C>T. **DISCUSSION** The main phenotypes of ALD are: Addison-only (isolated adrenal insufficiency), Adrenomyeloneuropathy-AMN (a distal axonopathy characterized by progressive spastic paraparesis, sensory ataxia, sphincter dysfunction, impotence and pain), CerebralALD-CALD (presenting with rapid cognitive and neurological decline, dementia, ataxia, seizures, behavioural changes and death). Patients are asymptomatic at birth. Symptoms in male patients are usually adrenocortical insufficiency in childhood and AMN in adulthood. Infections or head trauma may trigger the onset of cerebral-ALD. Brain MRI typically shows bilateral and symmetric hyperintense signals in the corpus callosum and parieto-occipital-frontal white matter. Elevated VLCFAs are biomarkers of X-ALD and the diagnosis can be confirmed by sequencing of the ABCD1 gene. Our patient developed typical symptoms of AMN in lower limbs, even though he suffered from a demyelinating neuropathy and not from an axonal one, as the majority of patients. After years an insidious cognitive decline appeared. Brain MRI showed a demyelinating disease but the pattern was atypical, describing asymmetrical disease. **CONCLUSION** We described a case of an adult man who presented clinical features of cognitive deterioration and an atypical AMN with unusual findings brain-MRI of X-ALD. In such cases, a family and personal history, and radiographic images are fundamental to suspect the diagnosis and to provide a timely genetic counseling.

### **BRAIN PARENCHYMA SONOGRAPHY AS A USEFUL TOOL IN DETECTING PATIENTS WITH ESSENTIAL TREMOR AT RISK TO DEVELOP PARKINSON'S DISEASE: A CASE REPORT**

**Objectives:** Essential tremor (ET) is the most common cause of action tremor. ET patients have an increased risk of developing Parkinson's Disease (PD) during their lifetime. Single-photon emission computed

tomography (SPECT) with DaT has high specificity and sensitivity, but in early stage of disease can be negative. We underline the importance of Brain Parenchyma Sonography (BPS) as a useful tool in detecting patients with ET who have developed or are at risk to develop PD in routine clinical practice. Materials and methods: Case report Results: A female 76-years-old patient, suffering from ET from childhood developed tremor dominant PD, in the last year. Neurological examination revealed head and voice tremor, kinetic postural and rest tremor of upper limbs, greater on the left, bilateral bradykinesia and reduction of synkinesis. Dopaminergic treatment was started with resolution of bradykinesia and improvement of tremor at rest. Brain MRI showed only mild brain atrophy; a DaT SPECT was apparently normal; a BPS revealed a bilateral hyperechogenicity of the Substantia Nigra (SN, right 0,46 cm<sup>2</sup>, left 0,33 cm<sup>2</sup>). Discussion and conclusions: The clinical presentation led to a diagnosis of PD, that is more frequent in long-standing ET. The DaT SPECT was apparently negative and seemed to exclude a consistent damage of DaT presynaptic basal ganglia receptors. BPS revealed SN hyperechogenicity, detectable in more than 90% of patients with PD or at risk to develop it but not in ET. BPS may be a sensitive non-invasive diagnostic tool in doubtful clinical cases or in early stages of PD, as in this case.

### **SPINAL DURAL ARTERIOVENOUS FISTULA PRESENTING AS ACUTE AREFLEXIC BILATERAL LIMB WEAKNESS.**

**INTRODUCTION:** Spinal dural arteriovenous fistula (SDAVF) is an uncommon cause of myelopathy mostly affecting middle-aged men, in which anomalous arterio-venous connections develop at the level of dura mater with medullary edema deposition and venous congestion [1]. Symptoms often include lower limb weakness, variably associated with radicular-like-pain, sensory and sphincter-disturbances [1,2]. SDAVF can lead to permanent disability if left untreated; endovascular embolization represents the principal treatment option. **CASE:** A 71-year-old man presented to our attention complaining of lower leg weakness with acute-onset 10 days before. The symptom was associated to back pain and urinary incontinence without sensory involvement. Neurological examination showed difficult gait, possible with bilateral support, reduced proximal limb strength (ileo-psoas had value of 3/5 at Medical Research Council grading system), with normal distal leg strength. Lower-limb deep-tendon reflexes were absent. Upper limbs examination showed normal strength and reflexes. No sensory deficit was found. Blood tests were normal. Cerebrospinal fluid analysis revealed raised albumin levels with 27 white-blood-cells. Electromyography showed fibrillation potentials in the vastus medialis, anterior tibialis and gastrocnemius caput medialis muscles, bilaterally. Nerve conduction study in the four limbs showed decreased femoral, peroneal, and tibial Compound Muscle Action Potential amplitudes with absent tibial-peroneal F-response and tibial H-reflex. No sensitive abnormalities were found. Spine MRI showed longitudinal T2-Short-T1 Inversion Recovery (STIR) hyperintense columnar central-medullary edema extending from D5 to medullary cone with late phase contrast enhancement. Serpiginous dorsal and lumbosacral peri-medullary vessels were noted at T2-STIR sequences. Spinal angiography revealed a SDAVF at D12 level. Endovascular embolization treatment was performed with near complete limb weakness resolution over the course of 15 days. **DISCUSSION:** SDAVF is a rare neurological disease associated with misleading clinical presentation. Symptoms often develop insidiously, but acute/subacute presentations are rarely reported [1,2]. MRI often shows spinal T2-dependent hyperintense columnar edema with late contrast-enhancement and dilated serpiginous peri-medullary vessels with flow void signal [1,3]. SDAVF should be considered in the diagnostic evaluation of lower limb weakness when more common causes of spinal/nerve involvement have been excluded, especially in light of the potential reversibility when promptly treated [1,2]. Diagnosis can be especially challenging in case of SDAVF with acute presentation, potentially mimicking other causes of acute onset weakness such as Guillain-Barré syndrome or transverse myelitis. In these occasions a careful spinal MRI evaluation aimed to highlight SDAVF peculiar features can play a crucial role addressing the diagnosis [3].

### **GIANT PERIVASCULAR VIRCHOW-ROBIN SPACES: A RARE CAUSE OF ADULT ONSET PROGRESSIVE SPASTIC PARAPARESIS**

**Background and Aims:** adult-onset, chronic progressive spastic paraparesis may be due to a large number of causes and poses a diagnostic challenge. The differential diagnosis is broad and includes genetic diseases, rare neuro-metabolic diseases and hypovitaminosis. Here we report a case of a 47-year-old woman, with a family history of gait abnormalities, admitted to our Neurology Unit for the onset, 6 months earlier, of progressive lower limbs weakness and spasticity. Her medical history was remarkable for ventricular shunt

surgery for an idiopathic triventricular obstructive hydrocephalon at the age of 20 years. The surgery was followed by complete remission and subsequent shunt closure after few years. On admission, neurological examination showed spastic gait, right exotropia with pupillary anisocoria, mild dysarthria and lower limbs weakness with hyperreflexia. Methods: we performed blood tests, including deficiency screening, a brain and spinal cord MRI and a motor evoked potential (MEP) study. Results: blood tests were unremarkable. Brain MRI showed a diffuse presence of intraparenchymal perivascular cysts, mainly in the midbrain and diencephalon, with the largest one in the right midbrain. On diffusion tensor imaging the right corticospinal tract in the cerebral peduncle appeared significantly compressed in its antero-lateral portion. The MEP study confirmed impaired motor function of the lower limbs. Conclusions: patient was diagnosed with 'Paraparesis due to giant Virchow-Robin spaces (GVRS)', a rare cause of adult-onset paraparesis. GVRS is a medical condition of unknown origin, without a clear genetic background. The patient underwent ventricular shunt re-placement with progressive neurological recovery over months, as demonstrated both by clinical and MRI follow-up.

### **LONG-COURSE OF SPORADIC CREUTZFELDT-JAKOB DISEASE MIMICKING STEROID-RESPONSIVE ENCEPHALOPATHY ASSOCIATED WITH AUTOIMMUNE THYROIDITIS**

**Aims:** sporadic Creutzfeldt-Jakob disease (sCJD) is a fatal neurodegenerative syndrome, characterized by rapidly progressive cognitive decline, psychiatric manifestations, myoclonus and cerebellar ataxia[1]. Periodic sharp wave complexes (PSWCs) are characteristic in sCJD and may exceptionally disappear in the terminal stage of the disease, because of the flattening of EEG activity[2]. Inflammatory disorders of the central nervous system must be considered in the differential diagnosis, especially in young and middle-aged patients. We report a patient with long-course of sCJD mimicking steroid-responsive encephalopathy associated with autoimmune thyroiditis (SREAT). **Case:** a 53-year-old man had a four-month history of behavioural and personality changes with memory disturbances. Two years earlier, he already began to manifest severe depression and anxiety disorder. Neurological examination showed partial orientation in time and space with multi-domain cognitive impairment including verbal, short and long-term memory, executive and visuo-spatial functions with constructional apraxia. Blood tests were normal, except for high titer of thyroperoxidase antibodies (TPOAb) (>1300U/ml, n.v.:<60U/ml). Cerebrospinal fluid examination only revealed high proteins (480mg/dl, n.v.: 150-450mg/dl). EEG revealed PSWCs associated with diffuse slowing. Brain MRI revealed hyperintense signal in the bilateral caudate nuclei and putamina on FLAIR and to lesser extent DWI sequences. Because of history of subacute cognitive impairment, psychiatric disturbances, and elevation of TPOAb, highly suggestive of SREAT, we attempted a therapy with intravenous methylprednisolone (at the total dosage of 5 g), followed by a 5-day (0.4gr/kg/day) intravenous immunoglobulin. Afterwards, repeat EEG showed a remarkable improvement of brain activity with disappearance of PSWC. After 24 months from the clinical onset, patient's cognitive profile has remained stable, even if he developed complex visual hallucinations. A real-time quaking-induced conversion in cerebrospinal fluid was performed and tested positive. There was no mutation of PRP gene; a 129-codon Met-Val polymorphism was identified. According to CDC criteria[1], a diagnosis of probable sCJD was made. **Discussion:** the survival time of sCJD is about 6 months from diagnosis, although longer anecdotal cases have been described[3]. Our case emphasizes the need to consider CJD in the diagnostic panel of cognitive decline, even in long clinical course disease and subtle clinical presentations. The significance of the marked and persistent EEG improvement after immunotherapy remains uncertain. **Conclusion:** sCJD may occasionally have an atypical course with very slow progression. Diffusion-weighted imaging alongside other neuroimaging and cerebrospinal fluid real-time quaking induced conversion can aid diagnosis in atypical cases. The diagnosis of SREAT should only be considered after exclusion of other causes.

### **A STROKE DUE TO SPONTANEOUS CAROTID DISSECTION IN A WOMAN WITH C.2371C>T HETEROZYGOUS MUTATION OF COL4A3 GENE: A CASE REPORT**

Fibromuscular dysplasia is a systemic vascular disease, frequent in young women, commonly involving renal and carotid arteries, which represents a rare cause of juvenile stroke (1). Here we report a case of recurrent spontaneous vascular dissections in a woman with a mutation of COL4A3 gene. A 50-year-old woman, referred to our emergency department for a sudden onset of non-fluent aphasia. Brain CT scan did not

reveal ischemic or hemorrhagic lesions. Angio-CT scan showed an occlusion of the distal M1 tract of the left middle cerebral artery. Collaterally, a fibromuscular dysplasia of both carotid arteries and left vertebral artery and a dissection of the right internal carotid artery were found. Systemic intravenous thrombolysis was performed, with a complete remission of the symptoms. Carotid angiography was performed, showing a complete reperfusion of middle cerebral artery, with a distal micro-embolization which did not require endovascular treatment (TICI:2b). The patient was then admitted to our Stroke Unit. Past medical history revealed two myocardial infarctions, the second one due to a right coronary artery dissection, for which our proband undergone to coronary stenting and subsequent treatment with aspirin. Moreover, the patient presented familiarity for breast cancer (half sister) and stroke (her mother and maternal grandmother died prematurely at age 50 and 56 for cerebrovascular events, respectively). Blood and urine laboratory test were unremarkable. A whole-body angio-CT evidenced multiple alterations in mesenteric blood vessel walls. A breast nodule, studied by mammography and needle-biopsy, revealed a bilateral invasive ductal carcinoma. Based on the phenotype and the family history, an exome sequencing was performed and showed a heterozygous c.5266dupCp. pathogenic variant of BRCA1 gene and a heterozygous c.2371C>T pathogenic variant in COL4A3 gene, classified as probably pathogenic. After the discharge the patient underwent bilateral quadrantectomy with radiotherapy. She did not suffer from other vascular events. COL4A3 is a gene which codify for the alpha 3 chain of the type IV collagen. Mutations of this gene lead to Alport syndrome, a disease characterized by ocular disturbances, neurosensorial hearing loss, and prominent renal involvement (2). To date, only a study had reported a COL4A3 mutation in a patient with a spontaneous dissection of a cervical vessel (3), leading to the suspicion of a role of this gene in vascular integrity. This case report highlights the importance of a genetic work-up of cryptogenic stroke and spontaneous dissection, especially in young patients. Clinical exome sequencing is a useful tool for patients with suggestive clinical history.

#### **BRAIN STRUCTURAL ABNORMALITIES AND COGNITIVE CHANGES IN A PATIENT WITH 17Q21.31 MICRO-DUPLICATION AND EARLY ONSET DEMENTIA: A CASE REPORT**

**Objectives.** 17q21.31 microduplication is a rare, recently described condition frequently associated with psychomotor delay, behavioural disorders and poor social interaction. Here we described the pattern of brain structural damage and cognitive profile evolution of an adult patient with a normal intellectual development and a 17q21.31 microduplication. **Materials.** A.B., 57 years old, male, was admitted to the Neurology Unit of San Raffaele Hospital (Milan). His wife reported obsessive and repetitive behaviours, irritability, scarce hygiene and memory loss occurring one year prior to hospitalization. His father died at 68 years with similar behavioural symptoms, his living sister has behavioural disturbances, and his son was diagnosed with Lennox-Gastaut and Asperger syndromes. Blood and cerebrospinal fluid (CSF) samples, previously analysed, have revealed a 17q21.31 microduplication, the same held by the patient's sister and son, and pathological total and phosphorylated tau levels. During hospitalization, A.B. underwent an MRI scan, an FDG-PET, and a neuropsychological assessment. Cognitive evaluation was repeated seven months after hospital discharge. **Method.** For MRI examination, 16 age- and education-matched male healthy subjects were selected. Voxel-based morphometry (VBM) analysis to investigate gray matter (GM) volume differences between patient and healthy controls was performed adjusting for age, education, and total intracranial volume. VBM results were tested at  $p < 0.001$  uncorrected for multiple comparisons. **Results.** Compared to controls, A.B. had greater selective GM atrophy in the right hemisphere, involving amygdala, hippocampus, inferior and superior temporal gyri. He also showed smaller clusters of left parahippocampal and temporal atrophy. FDG-PET reported bilateral hypometabolism of parahippocampal, middle frontal and posterior cingulate cortices. During hospitalization, his behavioural profile was characterized by anosognosia, impulsivity, stereotypies, apathy, emotional indifference, irritability, and aggressiveness. His cognitive testing revealed main attentive-executive disturbances, and difficulties in understanding non-literal and pragmatic language. He received a diagnosis of early onset dementia. After 7 months, he developed empathy loss, perseverative behaviour, changes in his eating habits, and he significantly worsened in executive-attentive abilities. **Pag. 1 Brain structural abnormalities and cognitive changes in a patient with 17Q21.31 micro-duplication and early onset dementia: a case report Discussion.** In our patient, 17q21.31 microduplication was associated with a neurodegenerative condition characterized by prevalent right temporal damage, pathological CSF tau, behavioural disturbances, memory

impairment, attentive-executive and abstract language dysfunctions, and fast disease progression.

Patient's father and sister likely were affected by the same neurodegenerative condition, while the son displayed a mixed of neurological and psychiatric syndromes. Conclusions. 17q21.31 microduplication caused heterogeneous syndromes, reflecting the complex interaction between genetic substrate and clinical phenotypes.

### **MILD ENCEPHALOPATHY WITH REVERSIBLE SPLENIAL LESION (MERS): A RARE ETIOLOGY OF A RARE SYNDROME**

**Introduction** Mild encephalitis/encephalopathy with reversible splenial lesion (MERS) is a rare clinico-radiological syndrome generally presenting with mild central nervous system symptoms such as consciousness disturbance, seizures and headache recovering within a month. MERS is also called reversible splenial lesion syndrome (RESLES) or, according to the MR features, cytotoxic lesions of the corpus callosum (CLOCCs). MERS can be triggered by infections, antiepileptic drugs, malignancy, subarachnoid hemorrhage, metabolic abnormalities, trauma and other causes. Adult-onset MERS is relatively rare. Here we describe a case of MERS associated with covert HIV positivity. **Case report** The patient was a 24-year-old male without any relevant disease history. He presented to our ER for drowsiness, disorientation and slurred speech with onset after prolonged sun exposition. Neurological examination did not show focal abnormalities nor meningeal signs. Blood pressure and body temperature were normal. He underwent lumbar puncture for CSF examination which was normal. Film array on CSF for common encephalitis and meningitis viruses was negative. He tested negative at nasopharyngeal swab for SARS-COV2 and other respiratory viruses. Brain MR showed diffuse corpus callosum and corona radiata high-signal-intensity on T2, FLAIR, and DWI sequences and decreased ADC of the lesion on ADC maps without contrast enhancement. MR angiography was normal. Laboratory examination showed only mild lymphopenia. HIV screening resulted positive for HIV-RNA dosing. EBV and JCV RNA on CSF was negative. Patient quickly improved and after 3 days neurological examination was normal. He repeated brain MRI two weeks later which showed a dramatic improvement of previous findings. Patient was discharged with a diagnosis of MERS and followed by the HIV outpatient clinic. **Discussion** MERS is divided into two types according to the lesion location. MERS type I, the typical form, mostly involves the midline of the splenium of the corpus callosum, while MERS type II generally presents also symmetrical lesions in the cerebral white matter or in the anterior aspect of the corpus callosum as in our patient. Moreover, MR features in our patient are typical of a CLOCCs which is the radiological-based definition of MERS. MERS can occur in the context of infections including influenza virus, rotavirus, mumps virus, *Mycoplasma pneumoniae*, *Legionella pneumophila* and SARS-COV2 but HIV has never been described as a trigger of MERS. **Conclusion** MERS is a rare clinico-radiological syndrome associated with a variety of causes. Among these, HIV can represent a rare infectious etiology that clinicians should always consider in the diagnostic pathway.

### **MIND THE JERK: RECURRENT FALLS MAY BE THE ONLY CLINICAL SIGN OF CORTICAL-SUBCORTICAL MYOCLONUS**

**Background** Myoclonus is characterized by sudden, brief, involuntary jerks of a muscle or a group of muscles, caused by muscular contraction (positive myoclonus) or interruption of muscle activity (negative myoclonus). It can be classified into peripheral, spinal, subcortical, and cortical forms. Some authors use the term cortical-subcortical myoclonus to identify a specific type of myoclonus, which differs from classical cortical myoclonus in that the abnormal excessive neuronal activity spreads between cortical and subcortical circuits, producing diffuse excitation. As a result, the EEG shows generalized spike-and-wave discharges that correlate with the myoclonic jerks. **Materials and methods** We report the case of a 79-year-old patient with a history of right thalamic hemorrhagic stroke, with favorable evolution. Fifteen years later he was readmitted to the emergency department for episodes characterized by sudden falls without loss of consciousness. An EEG with EMG recording channel on the anterior tibialis muscle was performed, which documented frequent diffuse spike-wave and polyspike-wave discharges, temporally related to myoclonic jerks in the lower limbs. Brain MRI showed the persistence of a small right thalamic hemosiderin residue at the site of the previous hemorrhage. Antiepileptic treatment with levetiracetam up to 1000 mg/day was started, with rapid clinical and electroencephalographic improvement. After three years of follow-up,

Levetiracetam therapy was reduced to 500 mg/day in the absence of cortical myoclonus recurrence. Discussion and conclusion Our patient developed a clinical and neurophysiological picture resembling cortico-subcortical myoclonus, which is commonly found in genetic generalized epilepsies (GGE), including juvenile myoclonic epilepsy (JME). Recent multimodal MRI studies show the presence of structural and functional cortico-subcortical alterations in patients with generalized epilepsy, particularly at the level of the thalamus. Indeed, thalamocortical network alterations have been observed in patients with GGE, particularly in JME patients. These disfunctions may underlie the genesis of myoclonic and tonic-clonic seizures in GGE patients. Therefore, our case may represent a lesion model of generalized epilepsy with myoclonic seizures. However, our patient presented with lower limbs myoclonus, which is not the typical manifestation of myoclonic epilepsies, and is more commonly found in myoclonus of subcortical origin. Therefore, despite the presence of a consistent EEG correlate, we can assume that the axial-subcortical component was more represented. Finally, our Pag. 1 Mind the jerk: recurrent falls may be the only clinical sign of cortical-subcortical myoclonus case highlights that lower limb myoclonus of cortical-subcortical origin may be an underestimate cause of gait disturbances and postural instability. Then, it is reasonable to include the EEG in the diagnostic work-up of patients with recurrent falls.

### **TREMOR SYNDROMES IN THE ELDERLY: THREE CASES.**

**Targets:** We report three patients who presented a late onset, slowly progressive tremor syndrome associate to mild parkinsonian, cerebellar and psychiatric features. **Materials:** PATIENT 1: 82 years old man who presented with gait and balance disturbances associated with bilateral hand tremor, with onset 2 years ago. On examination, we can appreciate mild cerebellar ataxia, dysmetria of left arm and intentional tremor of both hands. PATIENT 2: 63 years old man who reports tremor of both hands, mild depressive symptoms and behavioral issues which started ten years ago. On examination, he showed bilateral rest and action tremor, mild clumsiness on finger tapping and difficulty in tandem gait walking. PATIENT 3: 60 years old woman generalized tremor syndrome, which started 8 years ago. On examination, she showed mild bradykinesia in finger tapping bilaterally and rest and action tremor on the four limbs, head and chin. She also reported anxiety and mild depression. **Methods:** The patients underwent Brain MRI, routine laboratory testing, neuropsychological assessment and FMR1 genetic test. **Results:** Laboratory workout showed normal findings. Neuropsychological and behavioral assessment of patient 2 reported a control disorder and decrease of motivation without cognitive issues. Brain imaging of patient 1 and 2 showed diffuse cerebellar atrophy and hyperintensity of middle cerebellar peduncles. MRI of patient 3 showed diffuse supratentorial atrophy associated with white matter hyperintensity. Therefore, they underwent genetic testing for Fragile X-associated tremor/ataxia syndrome (FXTAS), that revealed a CGG expansion in the permutation range in FMR1 gene (respectively 88, 106 and 100 CGG repeats). Only the third patient reported family history of fragile-X syndrome (FXS). **Discussion:** Fragile X-associated tremor/ataxia syndrome (FXTAS) is a late onset neurodegenerative disorder characterized by progressive ataxia, tremor, cognitive involvement, neuropathy, and autonomic dysfunction. The clinical features usually begin in the sixth decade with an action or intention tremor followed by cerebellar ataxia. Symptoms can mimic other movement disorders or neurodegenerative diseases, so misdiagnosis is frequent. Individuating the disorder is important also to identify the gene mutation in family members. **Conclusion:** The diagnosis of FXTAS should be considered in elderly patient who present these clinical features with or without family history for Fragile X syndrome (FXS). Brain MRI can provide an important support for diagnosis that must be confirmed by genetic test.

### **BING NEEL SYNDROME (BNS). NEURORADIOLOGICAL FINDINGS OF CNS INVOLVEMENT IN WALDENSTRÄM MACROGLOBULINEMIA (WM)**

**Objectives** To illustrate MRI findings in a case of WM with CNS involvement. **Methods-Results** 58 y.o. man affected by WM diagnosed in 03/22. Symptoms began in 2017 initially interpreted as MGUS. He had fatigue and fever; asymmetric sensorimotor polyneuropathy occurred in 2019 and visual deficits in 10/21. Brain MRI in 12/21 showed left occipital edematous lesion with mass effect. CSF revealed only a high protein amount. He underwent steroid treatment with neuroradiological improvement hypothesizing an inflammatory disease. A clinical worsening (fatigue, paresthesias, visual deficits) motivated brain and spine MRI in 03/22 showing progression of occipital lesion and bi-hemispheric, infra, supra-tentorial brain and

spinal lesions. Contrast-enhancement appeared in coronae radiatae, intraorbital optic nerves, extrinsic ocular muscles, sphenoid body. Thickening of the cervical spinal roots, cauda equina and left parietal dura coexisted. A direct infiltration of CNS by lymphoplasmacytic cells was suspected, suggesting a BNS. Further exams revealed serum anti-MAG+, presence of MYD88+ (L265P) mutation, 70% cellularity in bone marrow, diffuse interstitial infiltrate of B lymphocyte-like elements with plasmocytic differentiation. In CSF plasmocytic lymphocytes and MYD88+ mutation were found. BNS diagnosis was therefore formulated. He was treated with Methotrexate, Rituximab and repeated medicated lumbar punctures. Neurological symptoms improved progressively. Recurrence of gait disturbances and visual deficit were successfully treated with steroids. MRI in 04/22 showed bilateral subdural effusions, worsening of dural thickening, involvement of cavernous sinuses and sellar region, progression of the left occipital and right temporal lesions. Therefore he underwent brain biopsy in 05/22 which did not reveal malignant lymphoplasmacytic cells but abnormalities in white, gray matter and leptomeninges, perivascular infiltrates of T-cells with rare hystiocytes. Post-operative MRI in 06/22 showed edema regression and contrast-enhancement reduction, persistence of dural thickening and subdural fluid collections. The patient is still under treatment and follow-up in accordance with hematologists. Discussion-Conclusions BNS is a rare complication of WM seen in about 1% of patients, resulting from direct infiltration of CNS by malignant lymphoplasmacytic cells. The presence of MYD88+ (L265P) somatic mutation in CSF proved to be useful for the diagnosis and monitoring of the disease<sup>1</sup>. Definite diagnosis requires histological biopsy which may be biased by prior treatments, as in our case. Brain and spine MRI can highly support the diagnosis identifying two typical patterns: diffuse leptomeningeal thickening or tumor-like<sup>2,3</sup> thus allowing distinction from other possible diagnosis (ie CNS lymphoma, inflammatory or infective leukoencephalopathy).

#### **A CASE OF MISDIAGNOSED POEMS SYNDROME WITH ONSET AFTER SARS-COV-2 INFECTION AND CENTRAL NERVOUS SYSTEM MANIFESTATIONS**

**Aims:** We aim to describe a case of POEMS syndrome previously diagnosed as chronic inflammatory demyelinating polyneuropathy (CIDP) with onset after a paucisymptomatic SARS-CoV-2 infection and with associated central nervous system manifestations. **Methods:** The case was investigated with clinical, laboratory, and instrumental examinations at the Bellaria Hospital of Bologna. **Results:** A 46 years-old Mauritian man presented with subacute onset of distal bilateral weakness of lower limbs-right hand and thrombocytosis. Antiplatelet prophylaxis and treatment with hydroxycarbamide were started, and he was hospitalized in the Neurology ward of another department for further investigations. Electrophysiologic studies demonstrated chronic signs of demyelinating polyneuropathy, and CSF examination showed albumin-cytologic dissociation. Therefore, the diagnosis of CIDP was formulated and the patient underwent a cycle of intravenous immunoglobulin therapy followed by a cycle of plasmapheresis three weeks later. Both treatments had a poor clinical response. Subsequently, oral steroid therapy was initiated, with slight clinical improvement of symptoms. Eight months later, during a febrile episode the patient experienced two seizures and he was hospitalized. A pathologic fracture of the hip was found, with whole-body FDG PET showing hypermetabolism of the bone tissue. Surprisingly, an MRI of the brain showed punctiform leptomeningeal and cortical-subcortical multifocal lesions. He was discharged with suspected combined central and peripheral demyelination. He was later admitted in our hospital. Serum protein electrophoresis confirmed the presence of an M component IgA lambda-type. Dermatologic evaluation revealed upper body cherry angiomas and initial signs of nail clubbing. Blood tests disclosed hypothyroidism and hyperprolactinemia, and elevated serum levels of VEGF. Electrophysiology showed severe mixed demyelinating axonal polyneuropathy; MRI did not confirm central demyelinating lesions. Diagnosis of POEMS syndrome was consequently formulated. The patient is currently a candidate for autologous stem cell transplant and has already received a cycle of cyclophosphamide. **Discussion and conclusions:** This case illustrates the diagnostic pitfalls of POEMS syndrome which often lead to delayed diagnosis and treatment of the disease, if close attention is not paid to the details and to the atypical features of the presumed diagnosis of CIDP. Furthermore, although the involvement of central nervous system has been previously described, seizures are a rare and scarcely reported manifestation of the syndrome and should not exclude the diagnosis. Ultimately, the onset of the disease after SARS-CoV-2 infection is of particular interest and may represent a clue about the pathogenetic mechanism, possibly linked in this case to an infectious stimulus to the immune system.

## **COMPLEX MOTOR BEHAVIOUR DURING SLEEP: A RARE CASE OF PAROXYSMAL HYPNOGENIC DYSKINESIA**

**Introduction:** The most frequent etiologies of complex motor behaviour during sleep consist in epileptic or parasomnic events. The differential diagnosis between Sleep related Hypermotor Epilepsy (SHE) and NREM parasomnia is generally simple and in typical cases careful history taking can be sufficient for orienting the clinical diagnosis. However, the differentiation between some sleep-related seizures and paroxysmal non-epileptic motor events may still be a challenge and a cause of diagnostic uncertainty. Identifying the origin of sleep-related hypermotor manifestations properly is still important for correct treatment and prognosis. **Methods:** We describe clinical, video-polysomnographic (v-PSG), neuroimaging and genetic findings of atypical case of patient with complex motor behaviour during sleep. **Results:** A 35-year-old male, presented with abnormal movements occurring exclusively during sleep since he was eight. The episodes, consisting of stiffening and random flailing of the arms and legs, occurred three to ten times every night lasting for three to five minutes. At the beginning, he was given a diagnosis of epilepsy and was started on clonazepam, becoming free of episodes for 5 years. After drug withdrawal, the episodes reappeared, being than resistant to treatment with topiramate and carbamazepine. He was referred to C. Munari's Epilepsy Surgery Center with the hypothesis of a drug-resistant sleep related hypermotor epilepsy. His brain magnetic resonance imaging, cerebral 18FDG-PET and Next Generation Sequencing genetic panel for epilepsy were normal. An overnight video-polysomnography recording did not reveal any electroencephalographic (EEG) abnormalities and captured 8 sleep-related episodes characterized by choreoathetoid and dystonic movements involving primarily the upper extremities. During one manifestation he was tested being aware, oriented and able to answer. All the episodes occurred during NREM sleep and were characterized by EEG desynchronization without any epileptic discharge. On the basis of v-PSG findings, a diagnosis of suspected Paroxysmal Hypnogenic Dyskinesia was made and genetic panel for dyskinesia did not reveal any mutation. **Discussion:** Paroxysmal hypnogenic dyskinesia is a rare clinical entity characterized by dystonic and choreoathetoid movements occurring exclusively during sleep, that can be difficult to distinguish from parasomnic or epileptic events. V-PSG and possibly home-made video recordings of the episodes are paramount for a correct diagnosis.

## **CHILDHOOD CASE OF GLYCOGENOSIS TYPE 2 WITH ABNORMAL CAPILLARIES AND AUTOPHAGY BLOCK**

**Objective:** Childhood Pompe disease, OMIM # 232300, has been considered a muscle disorder (cardiac and/or skeletal). This study focuses on small vessel changes in the muscle, that may contribute to the concept of the multisystem nature of Pompe disease. **Case Report:** a 3-and-a-half-year-old girl with a childhood-onset of late-onset Pompe disease (LOPD), was hospitalized at the University Hospital of Ljubljana, (Slovenia) and had a diagnostic biopsy of vastus lateralis muscle that was studied in Padova. The electron microscopy study was done in Slovenia. at the time of biopsy, at 3 years and 8 months, the child was in mechanical ventilation, and therefore this could be considered a natural history study because she died at 4 years and 4 months, before ERT was available. but may contribute to the concept of the multisystem nature of Pompe disease. **Methods:** The biopsy was studied by immunohistochemistry, electron microscopy, and molecular forms of alpha-glucosidase were investigated on western blot, by immunohistochemistry as described by Nascimbeni et al (1). Autophagy markers in biopsy were investigated as previously described (2,3) **Results:** Muscle biopsy: by hematoxylin and eosin, there were many vacuolated fibers (70%), there was high variability in muscle fiber vacuolar degeneration, and many muscle fibers were positive with acid phosphatase stain, when stained with autophagic markers a high p62 quantity was detected in several vacuolated fibers due to a novel stop-codon GAA mutation (2227C to T in exon 16) and a missense mutation in exon 2 (14650 C to T) with mutant protein-protein interaction and autophagosome formation. Peculiar was the high level of precursor (95-110 kDa) of GAA protein in muscle as well as little mature forms (70-76 kDa) of GAA protein probably reaching lysosomes in less affected fibers. The level of acid-glucosidase was 29% of control. She had a novel missense mutation and a stop-codon mutation, what was peculiar is the high level of precursor (95-110K Da) in muscle and some 60-70KDa protein in muscle and high p62, similar to severe infantile cases, demonstrating the altered process of GAA inside the muscle and blocked autophagy. **Discussion:** These recent findings suggest that GAA deficiency causes lysosomal dysfunction, autophagy impairment, and an alteration in several signaling pathways that might contribute to muscle dysfunction and resistance The concept of diffuse vascular

involvement, including small vessels, in LOPD, may contribute to the multisystem nature of Pompe disease and may influence the efficacy of possible therapeutic interventions in Childhood-onset LOPD.

### **COVID-19 VACCINE-RELATED GUILLAIN-BARRÉ SYNDROME IN LIGURIA, REGION OF ITALY: A MULTICENTER CASE SERIES**

**BACKGROUND AND PURPOSE:** Guillain-Barré Syndrome (GBS) can follow COVID-19 vaccination, with clinical and paraclinical features still to be precisely assessed. We describe a cohort of patients who developed GBS after vaccination with different types of COVID-19 vaccines. **MATERIALS AND METHODS:** Patients with post-COVID-19 vaccination GBS, admitted to the six hospitals that cover the whole Liguria region, Northwestern Italy, from February 1st to October 30th 2021, were included. Clinical, demographic, and paraclinical data were retrospectively collected. Epidemiologic data about the vaccination campaign in the Liguria Region were obtained. **RESULTS:** Among the 13 patients with post-COVID-19 vaccination GBS (9 males; mean age, 64 year), 5 were vaccinated with Oxford-AstraZeneca, 7 with Pfizer-BioNTech, and one with Moderna. Mean time between vaccination and GBS onset was 11.5 days. Ten patients developed GBS after the first vaccination dose, 3 after the second dose. Acute inflammatory demyelinating polyradiculoneuropathy was the predominant GBS variant. Bilateral seventh cranial nerve involvement followed AstraZeneca vaccination in two cases. Three patients presented treatment-related fluctuations, and 4 mild symptoms that delayed treatments and negatively affected prognosis. Prognosis was poor (GBS-disability score,  $\geq 3$ ) in 5/13 patients, with a disability rate of 3/13. **DISCUSSION:** We outlined the clinical features of thirteen post-COVID-19 vaccination GBS patients admitted to the hospital network of the Liguria region, an area of about 1.5 million inhabitants, over a period that covers the mass vaccination campaign for COVID-19 in Italy. Our findings confirm that most post-COVID-19 vaccination GBS belong to the AIDP subtype and occur after the first vaccine dose, and sensory symptoms may represent a common feature in GBS post-SARS-CoV-2 vaccine. AstraZeneca-associated bilateral seventh cranial nerve involvement is not uncommon, as well as CSF pleocytosis. Particular clinical features of GBS, namely treatment-related fluctuations, and insidious diagnosis-delaying, mild symptoms at onset, affect prognosis and deserve prompt recognition. We compared the features of the GBS cases unrelated to COVID-19 vaccine that occurred during the same period covered by this study in the Liguria region. By comparing the two groups, there was no difference in age at onset, gender prevalence, prognosis, and mortality rate. Conversely, in the COVID-19 vaccine-unrelated GBS patients, the antecedent infectious events ( $p=0.001$ ), and the AMSAN-AMAN subtype ( $p=0.025$ ) were more frequent. **CONCLUSIONS:** Overall, our data contribute to fill a gap in the current literature on COVID-19 vaccines and describe the treatment related fluctuation as an element of distinction.

### **PROGRESSIVE COGNITIVE DECLINE IN AN ATYPICAL NEURO-SJOGREN'S SYNDROME: A CASE REPORT**

**Objectives:** to describe a subacute multidomain cognitive impairment in a case of Neuro-Sjogren's Syndrome (N-SS) with a central nervous system (CNS) presentation. **Materials and Methods:** a 51-year-old female was admitted to our Emergency Unit for an acute onset cerebellar syndrome (nausea, vomiting, subjective dizziness, and gait instability) and cranial nerve paralysis (ageusia, right hemifacial hypoesthesia). **Results:** vital signs were normal. Past medical and family history was unremarkable. Neurological examination showed anisocoria (right > left), horizontal and up-beating gaze evoked nystagmus, hypoesthesia in the right V territory, right central VII cranial nerve paralysis, left side limbs and gait ataxia requiring bilateral support. Brain MRI showed a left T2-hyperintense, T1-hypointense, DWI restricted ponto-cerebellar area, involving the superior and medium cerebellar peduncles, showing ring-enhancement and mass effect. Infectious, paraneoplastic, and neoplastic etiologies were excluded by blood and CSF analysis. She was treated with antibiotics without benefit, and a high-dose iv methylprednisolone course with partial remission. One month later, she complained of emotional lability and disinhibition. In the ensuing months, motor deficits improved, with a residual mild ataxic syndrome and Holmes tremor, while cognitive functions subacutely deteriorated. Neuropsychological tests showed a multidomain cognitive impairment, mainly in frontal functions. Follow-up brain MRI showed the disappearance of the ponto-cerebellar lesion but the appearance of a left hypertrophic olivary degeneration. No new or enlarged frontal lesions were detected. During follow-up serology for markers of autoimmune and paraneoplastic syndromes were repeated and high titer SSA/RoA and SSB/La were detected. Schirmer test was borderline.

Salivary gland ultrasound was normal. Salivary gland biopsy and 18-FDG brain PET have been planned. Discussion: our patient showed a peculiar clinical and neuroradiological presentation of N-SS with acute brainstem onset followed by progressive cognitive impairment. CNS involvement is common in N-SS, usually depicted as brain fog. Brain lesions usually show a multiple sclerosis-like pattern. In our case the degree of cognitive impairment was greater than the usual mild involvement of attention, short-term or long-term memory as well as executive and visuospatial domains. Conclusions: cognitive impairment in patients with N-SS can result from a multifactorial process. **Pag. 1** Progressive cognitive decline in an atypical Neuro-Sjogren's Syndrome: a case report disrupting pathways rather than related to structural damage in specific brain areas. Further studies are needed to better investigate the spectrum of involved cognitive domains. Neuropsychological testing should be routinely performed in these patients, during the disease course and treatment, to objectively demonstrate treatment efficacy on progression.

### **A NOVEL VARIANT IN TBCD GENE ASSOCIATED WITH DISTAL MOTONEURONOPATHY AND CORPUS CALLOSUM HYPOPLASIA**

Case Report A 17 years-old female presented with exercise intolerance and leg weakness upon effort from childhood. On history she had mild intellectual disability (IQ:59) and bilateral surgery for pes equinus. Her parents were consanguineous (first-degree cousins). The maternal aunt suffered from severe intellectual disability and motor impairment from infancy. A mother's first cousin was affected from autism and pes planus. Neurological examination showed mild distal weakness, hypotrophy in intrinsic muscles of the hand and in distal leg muscles, without visible fasciculations. Hoffman and Babinski were absent. No sensory or coordination impairment was noted. Reflexes were normal in upper limbs, absent in lower limbs. The patient was followed up till age 22; progressive worsening of segmental strength at distal limb muscles was noted. Her respiratory function is unaffected, she doesn't show bulbar involvement. She never presented seizures. Methods NCS reported a slight reduction in cMAP amplitude, still in normative range. EMG showed sporadic fibrillations potentials and PSW; MUP were of high amplitude and long duration, with sporadic polyphasic potentials. Decreased motor unit recruitment was observed. MEP revealed a prolongation in the peripheral motor conduction time. A second neurophysiological study after 4 years revealed a quantitative reduction in cMAP amplitude. Cervical MRI was unremarkable, whereas brain MRI showed thin corpus callosum. Treatable conditions were excluded. Slight elevated CK values were found (176 U/L); to exclude a multisystem condition, transthoracic cardiac, abdominal and thoracic ultrasound, plus eye examination were performed, without revealing any pathologic condition. Genetic testing for SMN1 and SMN2 was normal. NGS panel revealed a homozygous point mutation c.881G>A in TBCD gene, resulting with a codon substitution p.R294Q, confirmed by Sanger sequencing. CADD score was 25.40. Genetic testing throughout the family is still ongoing. Discussion and Conclusion Mutations in tubulin-specific chaperon D (TBCD) have been reported in early-onset progressive neurodegenerative disorder. This gene is primarily involved in tubulin heterodimer assembly pathway: its defects are known to cause a spectrum of diseases ranging from epileptic encephalopathy, microcephaly, motor disorders (1). Mutations at R942Q have been implicated in an atypical case of SMA associated with corpus callosum hypoplasia (2). We describe a variant in TBCD gene, c.881G>A, which was previously reported in heterozygosity in a patient with intractable focal epilepsy and developmental delay (3). This mutation results in alteration of protein conformation which may affect the protein function. Finally, this case strengthens the genotype-phenotype relationship between TBCD-mediated tubulinopathy and infantile neurodegenerative disorder.

### **ACUTE DISSEMINATED ENCEPHALOMYELITIS (ADEM) AS CLINICAL PRESENTATION OF ANTI-MYELIN OLIGODENDROCYTE GLYCOPROTEIN ANTIBODIES DISEASE (MOG-AD) AFTER SARS COV2 VACCINATION**

Objectives. We describe the case of a 17-year-old patient developing ADEM with anti-MOG antibodies positivity in close temporal correlation with the administration of the first dose of Pfizer-BioNTech COVID-19 vaccination. Materials and Methods. A 17-year-old male patient was admitted to our Emergency Department on 22 September 2021, presenting with right lateropulsion and imbalance on Romberg test, second-degree nystagmus in the primary gaze to the left, and urinary retention progressively evolved in 1 month. His past medical history was unremarkable. The patient received on 20th August 2021 the first dose of Pfizer-BioNTech COVID-19 Vaccine. Brain computed tomography (CT) scan was

unremarkable. Magnetic resonance imaging (MRI) of the brain and spinal cord showed multiple altered-signal areas, all of about the same age, with no hypointense T1 lesions, in the subcortical white matter of both semi-oval centers, in both the thalami in the bulb, at the level of the left cerebellar peduncle and of the right cerebellar hemisphere, in the cervical spinal cord, in planes passing from C2 to C4, and dorsal, in planes passing from D5 to D7. Lumbar puncture showed pleocytosis (leukocytes 40 cells/uL consisting of 90% lymphocytes), elevated L-IgG and L-IgM. Link index and Reiber index were normal. Anti-myelin oligodendrocyte glycoprotein (MOG) antibodies were positive, with titration of 1:10240, while anti-aquaporin 4 (AQP4) antibodies were negative. Oligoclonal bands were negative. The patient was treated with IV methylprednisolone (1000 mg/day for 5 days) followed by oral steroid tapering (prednisone, starting from 50 mg/die), with marked improvement of symptoms. After three weeks from admission the patient started spontaneous urination. No bladder rehabilitation was needed. Repeat brain and spinal cord MRI performed eighteen days from admission and showed improvement of radiological findings, with significant reduction in size of all altered-signal areas. At discharge, his neurological examination was normal. Discussion and Conclusions. After a eight-month follow up (May, 2022), our patient had no signs nor neurological symptoms at his follow-up visits, suggesting that his clinical and radiological evolution was monophasic. The narrow time interval between vaccine administration and the symptom onset is indicative of an association between these two events, considering that ADEM typically occurs after two to four weeks after infections or vaccinations, and that MOG antibodies have been identified in up to 64% of children (< 18 years) with ADEM.

#### **RECRUDESCENCE OF MYOCARDITIS AFTER COVID-19 VACCINE IN PATIENT WITH PREVIOUS MYOCARDITIS AND PARAINFECTIOUS GUILLAIN-BARRÉ SYNDROME RELATED TO INFLUENZA A H1N1**

**Background.** According to the US Centers for Disease Control and Prevention, an increasing number of cases of myocarditis and pericarditis after mRNA COVID-19 vaccine has been reported. Most cases are seen in male adolescents and young adults, typically within several days from COVID-19 vaccination (Pfizer-BioNTech or Moderna), more commonly after the second dose. **Case report.** Here we describe the case of a 63-year-old female who developed myocarditis 14 days after the first dose of the Pfizer-BioNTech mRNA vaccine. Two years before the patient developed a myocarditis in conjunction with a parainfectious Guillain-Barré Syndrome (GBS) related to influenza A H1N1. **Discussion.** Several mechanisms have been proposed to explain the correlation between myocarditis and COVID-19 mRNA vaccines. The mRNA vaccines may give rise to a cascade of immunological events leading to aberrant activation of innate and acquired immune system, triggering pre-existing dysregulated pathways. Another potential mechanism is the so called “molecular mimicry”, that can be responsible of a cross-reaction between the spike protein of SARS-CoV-2 and self-antigens. This mechanism can be triggered by infections and also by vaccinations. In our case, the patient had an history of a previous myocarditis related to influenza A H1N1 complicated by the onset of GBS in a parainfectious manner, as can be highlighted by the short time elapsed between the onset of the flu symptoms and the onset of the neurological manifestations. These immune phenomena could indicate the presence of an aberrant immune response characterized by a dysregulated cytokine expression and an abnormal activation of immunologic pathways. **Conclusions.** Owing to its temporal relationship, we can speculate that the vaccine may have triggered a pre-existent dysfunctional immune response manifesting as an exacerbation of myocarditis.

#### **SUCCESSFUL TREATMENT OF CHRONIC MIGRAINE COMORBIDS WITH MYASTHENIA GRAVIS AND ARTHRITIS WITH MONOCLONAL ANTIBODY AGAINST CGRP: A CASE REPORT**

**Introduction:** Monoclonal antibodies against CGRP and its receptor are the first target therapy for migraine prevention. CGRP is a 37-aminoacid peptide produced in central and peripheral sensory neurons throughout the CNS. This peptide is also localized in nonneuronal tissues throughout the body. For this reason, some researchers emphasized that circulating antibodies could affect all peripherally accessible sites where CGRP acts. CGRP-immunoreactive fibers were identified in the thymus, where it inhibits IL-2 production and proliferation of thymocytes in vitro. Transcription of the acetylcholine receptor alpha subunit, the main autoantigen in myasthenia gravis (MG), is induced by CGRP and VIP in human thymus and thymomas from MG patients. Autoimmune dysfunction of CGRP and its receptors is postulated to give rise to fatigue-related conditions such as chronic fatigue syndrome. Nonetheless, CGRP plays a role in the

painful component of other chronic pain conditions, such as arthritis. Case report: A 49 year old woman presented to our clinic in 2016 with a history of chronic migraine. She had twenty days of headache per months. She has had 2 episodes of visual aura. Her neurologic examination was negative. She tried 3 oral preventive therapies: with amitriptyline she had no efficacy, with calcium channel blocker and topiramate she had no durable improvement. In 2019 she presented chronic fatigue and blurred vision, performed EMG repetitive stimulation, and Myasthenia gravis was diagnosed without specific antibodies, for this reason she began pyridostigmine bromide therapy. In 2021, for her chronic joint pain, she was diagnosed with psoriatic arthritis and fibromyalgia, for this reason she started therapy with methotrexate and folate once a week. Meanwhile her headache became daily and disabling, so she started therapy with fremanezumab 225 mg once a month with important improvement of her migraine: after 3 months she had only 2 migraine attacks per months with less intensity and duration. Discussion and conclusions: As mentioned above, a CGRP-related mechanism has been hypothesised for myasthenia, chronic fatigue, and arthritis, all pathologies comorbid with chronic migraine in our patient. In this case report, anti-CGRP molecule fremanezumab did not interfere negatively with the other comorbid conditions.

### **LATE-ONSET MYASTHENIA GRAVIS AFTER COVID-19 VACCINE**

Background: Myasthenia gravis (MG) is an autoimmune disorder of the neuromuscular junction caused by antibodies which bind to acetylcholine receptors or to functionally related molecules in the postsynaptic membrane<sup>1</sup>. These antibodies determine MG clinical manifestations which are characterized by skeletal muscle weakness. MG age of onset presents a bimodal pattern with early peak in the second and third decade and late peak in the sixth to eighth decade. Diagnosis of late-onset MG can be challenging due to co-morbidities and other confounding factors. In some cases of MG, onset or exacerbations follow a trigger such as stress or an infection. MG onset has been reported after SARS-CoV2 infection. Few cases of MG onset after COVID-19 vaccine have been described<sup>2</sup>. Clinical case: We report the case of a 77-year-old woman who was diagnosed with MG after COVID-19 vaccine. Her past history was positive for hypertension, ascendent aorta aneurysm and chronic obstructive pulmonary disease. On 30 December 2021, she received the booster dose of COVID-19 vaccine. The following week she presented with fever which was treated with antibiotics with symptom regression. From 10 January 2022 she began referring asthenia, leg and arm weakness, exertional dyspnea, occasional dysphagia and bilateral ptosis (OD>OS) which worsened in the evening. She was accompanied to the Emergency Room where she underwent lung CT scan and brain CT scan which resulted normal. Neurological examination showed the symptoms referred by the patient, hypophonia and positive fatigability tests. She was admitted to the Neurological ward. During her stay, therapy with pyridostigmine bromide was begun with symptom improvement. Anti-acetylcholine receptor antibodies resulted positive and EMG was consistent with a diagnosis of MG. Serology testing for SARS-CoV2 showed an elevated titer of anti-SARS-CoV2-spike protein antibodies. Discussion: COVID-19 vaccines have been fundamental to face the SARS-CoV2 pandemic. Besides the common side effects, several autoimmune manifestations following COVID-19 vaccines have been reported such as immune thrombotic thrombocytopenia, autoimmune liver diseases, Guillain-Barré syndrome. Molecular mimicry, the production of autoantibodies and certain vaccine adjuvants have been taken into consideration as potential contributors to autoimmune phenomena<sup>3</sup>. Whether the onset is due primarily to the vaccine or to the activation of an already present, latent, disease is still unclear. Knowing about possible immune-mediated diseases following COVID-19 vaccines is of paramount importance for clinicians to promptly recognize, diagnose and treat patients.

### **BASELINE SUBTLE NEUROLOGICAL SIGNS PREDICT FUTURE IMMUNE EFFECTOR CELL-ASSOCIATED NEUROTOXICITY SYNDROME (ICANS) IN PATIENTS WITH DIFFUSE LARGE B-CELL LYMPHOMA (DLBCL) TREATED WITH CAR-T THERAPY TISAGENLEUCEL**

Objectives: Chimeric antigen receptor T cells (CAR-T) are a new class of treatment against lymphoid malignancies. Albeit their great efficacy, significant adverse events such cytokine release syndrome (CRS) and Immune effector cell-Associated Neurotoxicity Syndrome (ICANS) are common. ICANS includes a

plethora of different clinical manifestations, such as aphasia, dyscalculia, tremor, seizures, headache and stroke. Several tools have been developed to early identify and assess severity of neurological complications (e.g. CARTOX scale). Both CRS and ICANS are usually reversible if treated promptly. Aim of this study is to analyze our cohort of patients who underwent to CAR-T to better characterize clinical course and adverse events. Materials and methods: in this retrospective case series we analyzed seven consecutive patients with Diffuse Large B-Cell Lymphoma (DLBCL) treated with CAR-T therapy tisagenlecleucel in the Hematology Unit of our hospital. Age at the treatment, ECOG Performance Status Scale, brain MRI, CRS and ICANS score, administration of tocilizumab and clinical outcome were recorded. Results: Four females and three males treated from January 2020 to April 2022 were included in this study. Median age at treatment was 54.9 years (range: 26.4 – 68.9 years). Brain MRI was obtained from four patients before the infusion, all of them showing no significant alterations. All patients experienced grade 1 CRS (fever) within the first day after the infusion. One female patient had severe ICANS. In detail, her first neurological examination before the infusion revealed mild temporal disorientation and bilateral palmomental reflex. Six hour after infusion she started to develop fever (grade 1 CRS). The first neurological impairment was observed twenty hours after the infusion when her writing became paligraphic (‘‘MI PIACE LA PIZZA’’ became ‘‘MII PIACEE LA ZIZZ’’), configuring a grade 1 ICANS. Two hours later she was completely unable to perform the writing task and, after a few hours she became disoriented in space and time, dyscalculic and anomic (grade 10 ICANS). Tocilizumab was then administered with a complete regression of neurological signs after three hours. Discussion: the only patient reported ICANS presented subtle alteration of neurological examination at baseline. Pathogenesis of ICANS adverse events of CAR-T and disturbances in language remain largely unknown likely involving cytokine-mediated neuroinflammatory mechanisms. Conclusions: pre-treatment recognition of subtle neurological signs at baseline may predict ICANS and the need of a prompt (or maybe preventive) treatment after CAR-T therapy. Further studies are required to better understand this relationship.

#### **INCIDENT ANTI-LGI1 AUTOIMMUNE ENCEPHALITIS DURING DEMENTIA WITH LEWY BODIES: WHEN OCCAM RAZOR IS A DOUBLE-EDGED SWORD**

**Background.** Quick cognitive deterioration and seizures seldom occur in Dementia with Lewy bodies (DLB)<sup>1</sup> but other concomitant conditions disrupting the typical course may be neglected by following the Occam razor rule uncritically. **Case report.** We describe a 74-year-old male with a slowly progressive cognitive impairment with probable RBD and visual hallucinations, reduced basal ganglia dopamine transporter uptake on SPECT, grossly impaired myocardial I-123 MIBG scintigraphy, bilateral parieto-occipital hypometabolism on [18F]-fluorodeoxyglucose-PET, and slowing-down of EEG background activity, consistent with probable DLB. The MMSE score was 19/30 and the CDR score was 2. Treatment with rivastigmine resulted in cognitive and behavioral improvement (MMSE score 24/30). Two months later, he experienced several episodes of sudden and short paroxysmal myoclonus-like movements with psychomotor arrest, suspected of complex partial seizures and paralleling cognitive worsening. Despite incremental dosing of antiepileptics drugs, a generalized convulsive seizure, and multiple daily episodes of faciobrachial dystonic seizure (FBDS) occurred while EEG showed impressive worsening with sub-continuous delta activity but no epileptiform abnormalities even during the FBDS episodes, leading to hospitalization. Moderate hyponatremia (128 mEq/l) was found, while brain MRI was unchanged and RT-quick on nasal brushing was negative for prion protein. Detection of serum anti-leucine-rich glioma-inactivated 1 (LGI1) antibodies supported the diagnosis of anti-LGI-1 autoimmune encephalitis. Treatment with intravenous methylprednisolone (500 mg for 5 days), followed by two monthly cycles of IV immunoglobulins (2 g/kg in five consecutive days) resulted in cognitive improvement, significant reduction of FBDS and antiepileptics dosing decrease. **Discussion.** Seizures are reported in around 2.5% of DLB patients and relate to cortical network hyperexcitability due to deposition of aggregated proteins (e.g., alpha-synuclein, tau) or concurrent amyloid plaques<sup>2</sup>. In this case, the co-occurrence of anti-LGI1 autoimmune encephalitis was responsible for epilepsy and rapid cognitive with EEG worsening, both significantly improving with immunotherapy. Although AEs may be insidious mimics of neurodegenerative dementias<sup>3</sup>, two core clinical features, two indicative and two supportive biomarkers for DLB strongly suggest co-pathology. We speculate that during DLB-related neuronal degeneration the presentation of neo-autoantigens might have triggered an immune response with autoantibodies against the neuronal cell-

surface (e.g., LGI1), facilitated in entering the brain by a less intact blood-brain barrier, common in the elderly. Conclusions. Occurrence of epilepsy and abrupt cognitive worsening in DLB may be challenging for clinicians and need a thorough investigation to exclude concomitant, treatable conditions.

#### **INTRACRANIAL HYPERTENSION ASSOCIATED WITH IGG4-RELATED AUTOIMMUNE PANCREATITIS. IS IT A DIFFERENT SIDE OF THE SAME COIN?**

IgG4-related disease (IgG4-RD) is a systemic inflammatory disorder that can affect many organs and is characterized by increased serum IgG4 levels. Autoimmune pancreatitis is one of the most common IgG4-RD inflammatory disorders, and was the first IgG4-RD inflammatory disease reported in the literature. Recently, intracranial hypertension (IH) has been described as a clinical manifestation of IgG4-related hypertrophic pachymeningitis and cerebral venous thrombosis<sup>1</sup>. We report an interesting case of IH associated with elevated serum IgG4 levels and autoimmune pancreatitis. **CASE PRESENTATION:** A 24-year-old woman had been complaining for a month of severe headache with nausea and vomiting that worsened with supine position, associated with diplopia. Brain MRI demonstrated distention of the periorbital subarachnoid space and flattening of the posterior sclera. Cerebral MR venography (MRV) revealed bilateral transverse sinus stenosis (BTSS), indicating altered intracranial venous outflow. Cerebrospinal fluid (CSF) analysis was normal. One-hour lumbar CSF pressure monitoring by spinal needle<sup>2,3</sup> showed elevated opening pressure and mean pressure (247 mmH<sub>2</sub>O and 282 mmH<sub>2</sub>O, respectively), with a maximum peak of 330 mmH<sub>2</sub>O and the presence of abnormal CSF pulsations (B waves)<sup>2</sup>. A complete blood test showed elevated levels of lipase and amylase, 262 IU/L (n. v. 13-53) and 245 U/L (n. v. 13-60), respectively. The serum concentration of IgG4 was elevated, 1.540 g/L (n.v. 0.08-1.40). A cholangio-RM was performed, which showed enlargement of the cephalic portion of the pancreas without any sign of obstruction of the duct of Wirsung. **DISCUSSION:** Occurrence of IH in patients with IgG4-RD has been rarely reported. It is probably due to hypertrophic pachymeningitis and venous flow abnormalities secondary to IgG4 infiltration. Moreover, it has been suggested that inflammatory mediators can increase CSF viscosity reducing CSF uptake and altering CSF flow dynamics. Pachymeningeal thickening and enhancement are characteristic MRI findings, but these signs may be mild or absent in the early phases<sup>1</sup>. **CONCLUSIONS:** To our knowledge, this is the first case of IH during IgG4-related autoimmune pancreatitis. The exact mechanism leading to IH in IgG4-RD patients still remains debated. Here we would like to emphasize the importance of early diagnosis of IgG4-RD presenting with IH to avoid delays in initiating appropriate treatment.

#### **A LIFE-THREATENING, NOVEL MUTATION, DELIVERY INDUCED, CARBAMOYL PHOSPHATE SYNTHETASE-1 DEFICIENCY ENCEPHALOPATHY TREATED BY DECOMPRESSIVE CRANIECTOMY**

**OBJECTIVE:** to discuss the most severe clinical pictures of adult onset urea cycle disorders and their complex, multidisciplinary treatment. **METHODS:** case report and review of literature. **RESULTS:** a 39 years old puerpera presented agitation, confusion, behavioral alterations, and gradually consciousness impairment. For these reason underwent brain CT and MRI, extensive laboratory tests, lumbar puncture that resulted unremarkable, while EEG showed widespread slow wave activity. Admitted to intensive care unit, in the suspect of dysimmune encephalopathy, was treated by ev immunoglobulins, with further neurological deterioration. A control brain MRI showed diffuse bihemispherical FLAIR and DWI hyperintensities, without gadolinium enhancement, consistent with cytotoxic edema. These findings were associated to clinical signs of intracranial hypertension, thus an intracranial pressure of 70 mmHg was detected; according to this a large frontal bilateral decompressive craniectomy was performed. Critical reappraisal and supplementary analysis of anamnestic, clinical and diagnostic results pointed out a significant hyperammonemia (400 µg/dl). In light of this, an extensive aminoacids dosage and genetic tests were performed, founding double heterozygosity, novel, Carbamoyl phosphate synthetase-1 mutations, precisely related to urea cycle disorder. After specific treatment (stop protein intake, intravenous glucose and electrolytes, intravenous L-arginine and sodium benzoate, B6 and B12 supplementation, continuous veno-venous hemofiltration), despite negative prognostic factors (coma duration, intracranial pressure) the condition of the patients gradually improved, achieving normal consciousness, language comprehension, voluntary motor activity), so that she was referred to rehabilitation unit. **DISCUSSION AND CONCLUSIONS:** Adult onset of urea cycle disorders, despite rare, represents a life-threatening under-estimated condition.

During decompensations, hyperammonemia is neurotoxic, leading to severe symptoms and even coma and death if not treated rapidly. Moreover, a lack of prompt diagnosis can expose patients at high risk of inappropriate and hazardous treatment, with a poor outcome. Revising these clinical scenarios highlights the need to raise awareness and improve management of these treatable conditions.

### **CHOREA AND BASAL GANGLIA HYPERMETABOLISM AS INDICATORS OF APS AND PROBABLE-APS**

**Objectives:** chorea is a rare manifestation of Antiphospholipid Antibody Syndrome (APS). It has been hypothesized a direct non-thrombotic interaction of APL antibodies with neurons of the dopaminergic nigro-striatal pathway. This interaction could determine membrane depolarization that would result in chorea as clinical manifestation. Several clinical manifestations of the APS have been excluded from the diagnostic criteria of the syndrome, including neurological. These manifestations have been included in a separate category viz “Probable APS” since they could predate the development of actual thrombosis. Long-term therapy of these patients with either antiaggregant or anticoagulant might have to be considered. **Materials:** a 77-year-old-woman was admitted for subacute onset of choreiform movements affecting the limbs of the left side of the body, associated with a mild slowdown of ideomotor processes and impairment of speech. Her medical history revealed one miscarriage at the fourth month and a full-term pregnancy. **Methods:** in the hypothesis of APS, lab analyses revealed high titres of aCL, abeta2GPI and LAC antibodies, the absence of complement consumption and prolonged aPTT combined with in-range platelets level. Brain MRI showed a mild chronic vasculopathy. 18F-FDG PET scan showed a hyper-metabolism of the basal ganglia. **Results:** based on the high aPL titre, FDG-PET hyper-metabolism of the basal ganglia and lack of MR-ischemic findings suggestive for thrombosis, a diagnosis of Probable-APS was made. A symptomatic treatment with haloperidol was started, determining complete remission of the motor symptoms, that persisted at a 12-week follow-up evaluation. In parallel a preventive treatment with aspirin was started, in absence of further thrombotic complications. **Discussion:** movements disorders associated with hypermetabolism of the basal ganglia can be features of APS and Probable-APS. We hypothesize a role of 18F-FDG PET in the diagnostic process to assess basal ganglia hypermetabolism, since brain MRI alone would prove inconclusive or negative. In absence of a medical history characterized by thrombotic events, such assessment would support a Probable-APS diagnosis, thus allowing to start an appropriate preventive treatment (with either antiaggregant or anticoagulant) anticipating thrombotic complications, such as cerebral infarction, as a consequence of the transition to overt APS. **Conclusions:** this case report outlines the importance of aPL titres assessment in patients with choreiform disorders and the role of 18F-FDG PET in the diagnostic process, since even in absence of a thrombotic medical history, such assessment would support a Probable-APS diagnosis, thus allowing to start an appropriate preventive treatment (with either antiaggregant or anticoagulant).

### **A CASE REPORT OF FAVA SYNDROME IN A YOUNG WOMAN CARRYING PIK3CA GENE MUTATION**

**Background:** FAVA (Fibro-Adipose Vascular Anomaly) syndrome, first described by Alomari in 2014, is an extremely rare pathology (approximately 20 cases reported in the literature) characterized by fibrofatty infiltration of muscle (mainly in the lower extremities), unusual phlebectasia with pain and contracture of the affected extremity (1). Usually, it occurs in young females (median age, 12-17 years) but has been described also at birth or early adulthood (2). FAVA is usually sporadic and frequently caused by a somatic mutation involving PIK3CA (Phosphatidylinositol-4,5-bisphosphate 3-kinase) gene, which activates mammalian target of rapamycin (mTOR) pathway, known to promote angiogenesis and lymphangiogenesis (3). **Case report:** A 34-year-old woman was referred to our Unit in January 2022; the neurological exam showed overgrowth and weakness in the left lower limb with left foot drop and gait imbalance. The physical abnormalities were already present at birth, but weakness progressed very slowly over the years. Indeed, she became a paralympic athlete, although she had to stop when she was 30 due to the impairment of her physical performance. An electroneuromyography of the lower limbs, performed at the age of 20, showed neurotmesis of left external popliteal nerve at the fibular head. At the age of 32, a musculoskeletal ultrasound of the lower limbs showed bilateral fibrous infiltration of biceps femoris, medial gastrocnemius, tibialis posterior and peroneal muscles; an MRI of the pelvis revealed muscle atrophy with diffuse fatty infiltration of gluteus minimus, gluteus medius, iliac and vastus lateralis muscles. A muscle biopsy of the vastus lateralis muscle did not show histologic evidence of fibrofatty infiltration, while genetic

testing on the muscle sample demonstrated PIK3CA gene mutation, in particular a missense mutation at codon 542. In contrast, a previous genetic test of PIK3CA mutation performed on saliva, skin and blood samples was negative. Conclusion: We hereby describe a new, peculiar case of FAVA syndrome. Relevant atypical features lie in the discrepancy between the slow progression of the motor function impairment up to the age of 30 and the relatively rapid progression of muscle atrophy. Another atypical feature is the absence of the characteristic fibrofatty infiltration at the histopathological examination of the muscle biopsy despite the presence of the PIK3CA gene mutation. This suggests that histological alterations are not mandatory for the diagnosis of FAVA syndrome, which should be considered as a differential diagnosis when evaluating vascular abnormalities in the lower limbs.

### **ATYPICAL PRESENTATION OF NMDA-R ENCEPHALITIS OVERLAPPING CENTRAL NERVOUS SYSTEM DEMYELINATING SYNDROME: A CASE REPORT**

**Background:** Anti-N-methyl-D-aspartate receptor (Anti-NMDAR) encephalitis represents the most frequent encephalitis associated with surface antigens antibodies. The disorder predominantly affects female children and young adults. The most common clinical presentation is characterized by psychiatric symptoms, seizures, and movement disorders. A large proportion of cases is associated with identifiable tumours, usually ovarian teratoma. At symptoms onset, about half of patients, presents magnetic resonance imaging (MRI) hyperintensities in long-TR sequences in the cerebral, cerebellar cortex or in the mesial-temporal region. Herein we present a case of a patient with suspected central nervous system (CNS) demyelinating disease and subsequently found to be positive for anti-NMDAR antibodies. **Discussion:** A Caucasian 68-years-old man was admitted to Neurology Department with a history of three-months ataxic syndrome and urinary disturbances, preceded by fatigue, behavioural disorders including major irritability, apathy and depression. Brain MRI showed multiple T2 hyperintensities with no gadolinium enhancement, suggestive for CNS demyelinating disorders. Spinal cord MRI was negative. The electroencephalogram was unremarkable. Cerebrospinal fluid (CSF) analysis revealed slight increased protein level, presence of 13 oligoclonal bands. Whole-body 18F-fluorodeoxyglucose-PET revealed a neoformation in right parotid gland, suggestive of benign Warthin's tumour and in right renal pelvis (not susceptible of surgical removal). In the suspicion of CNS demyelinating disease, the patient was initially treated with 5-grams-intravenous methylprednisolone, with a partial recovery of ataxic symptoms. Although the diagnosis of suspected CNS demyelinating disorders could not be ruled-out, a diagnosis of anti-NMDA-r encephalitis was advanced since serum and CSF were positive for anti-NMDAR antibodies. Therefore, Rituximab was started. After six months, the patient was clinically and radiologically stable. Serum and CSF NMDAR antibodies were still positive after six months. **Conclusion:** CNS demyelinating diseases are associated with other autoimmune disorders. Recent literature has described a very little number of anti-NMDAr encephalitis overlapping with multiple sclerosis (MS). The diagnosis and management of our patient was challenging due to atypical epidemiological features for both MS and anti-NMDAr encephalitis. Clinical and radiological presentation suggested the first hypothesis, while the serum and CSF findings of anti-NMDAr antibodies addressed the diagnosis to the second suspicion. In this case-report CSF oligoclonal bands were not helpful, since they could be found in both diseases. However, although it could be not excluded that NMDAR antibodies played an independent pathogenic role or were an epiphenomenon of a demyelinating syndrome, we decided to treat our patient with an anti-CD20 monoclonal therapy, obtaining clinically and radiologically stability after six months.

### **MULTIFOCAL CONTRAST-ENHANCING BRAIN LESIONS IN A PATIENT WITH RECENT SARS-COV 2 INFECTION: A CHALLENGING CASE**

**Background:** Brain MRI, together with clinical and laboratory findings, usually helps in differential diagnosis between neoplastic and tumefactive demyelinating lesions (TDLs). However, glioblastoma may evade this paradigm, representing a diagnostic challenge. We herein present an insidious case of infiltrating, multifocal glioblastoma that mimicked TDLs. **Case presentation:** A 68-years old otherwise healthy woman was admitted to our Clinic for diplopia, dizziness, and left hemianesthesia and dysesthesia which came up a month before, soon after the administration of COVID19 vaccination. The clinical picture severely worsened ten days before admission, after SARS-CoV2 infection. At neurological examination, she presented bilateral rotatory nystagmus and limitation in vertical conjugated eye-movements. A brain MRI showed a

tumefactive T2-FLAIR-hyperintense, T1-hypointense lesion in the midbrain and right thalamus with homogeneous contrast-enhancement. Perfusion showed high rCBV-values and there was a rise of choline with modest reduction of NAA. A similar smaller lesion was described in left frontal lobe. On CSF analysis, a mild protein increase (57 mg/dL) was found, with no other abnormal findings on microbiological investigations, IgG index and isoelectrofocusing. CSF NfL was 1157 pg/mL, serum and CSF AQP4 and MOG antibodies tested negative, as well as serum ANCA, ANA, Anti-citrullin antibodies. A chest-abdomen CT scan and a total body 18FDG-PET were performed, only showing a mild prevalence of 18FDG uptake in right thalamus. Considering these findings and the history of recent SARS-CoV2 infection and vaccination, IVMP 1 g/daily for 10 days was started with initial benefit. A control brain MRI showed reduction in size and in contrast-enhancement of the lesions. We started an oral tapering with prednisone 1 mg/kg, but in few days clinical conditions worsened. A brain MRI showed an increase in contrast-enhancement and an enlargement in size of all the lesions. We proceeded with plasma exchange (5 exchanges in 10 days), without improvement. Due to the appearance of obstructive hydrocephalus, an external ventricular drainage was applied. A biopsy of the frontal lesion eventually led to the diagnosis of glioblastoma IDH-wildtype, grade four (WHO 2021). Discussion and conclusions: Inflammatory demyelinating diseases have been described after SARS-CoV2 infection or vaccination. In our case, the history of recent SARS-CoV2 vaccination and infection, led to consider an inflammatory nature of brain lesions. However, the diagnostic work-up led to diagnose glioblastoma. When no better explanation is available, clinicians should keep in mind the possibility of neurological sequelae of SARS-CoV2 infection but differential diagnosis with SARS-CoV2 unrelated diseases should always be performed.

#### **CASE SERIES OF ANTI-MYELIN OLIGODENDROCYTE GLYCOPROTEIN SERUM POSITIVITY: IS THE CULPRIT THE INFECTION OR THE AUTOIMMUNE ATTACK?**

Myelin oligodendrocyte glycoprotein-associated disease (MOG-AD) is an antibody-mediated inflammatory demyelinating disorder of the central nervous system also reported in the setting of several infections. Difficult may be, in such cases, to rule out simple association of the infection and myelitis instead of causation. We report two cases of MOG-AD following infectious episodes. Fluorescence-activated cell sorting was used for a quantitative detection of serum MOG-IgG (sMOG-IgG). Diagnostic workup included brain and spinal cord magnetic resonance imaging (MRI), cerebrospinal fluid (CSF) analysis, and a complete serological evaluation for the most common virus and bacteria. The first patient was a 27-year-old woman with unremarkable medical history, admitted to emergency department for progressive urinary retention and ascending paraparesis. She reported tick exposure one month before the beginning of neurological symptoms. Febrile status (38,2°C) occurred after two days of hospitalization. Brain and spinal cord MRI identified a cervico-dorsal longitudinally extensive transverse myelitis with no brain lesions. CSF analysis revealed a marked pleocytosis with polymorphonuclear predominance and intrathecal oligoclonal IgG. Serum and CSF samples were found to be IgM positive for *Borrelia burgdorferi*, as confirmed by Western blot. The patient was treated with ceftriaxone (4g/day for 21 day). High-titer positive MOG-IgG were found, therefore intravenous methylprednisolone (ivMP) 1g/day for 5 days was administered, followed by every other day plasma exchange with clinical and radiological improvement. A year after, progressive SMOG-IgG negativity and complete clinical-radiological recovery were achieved and no further episodes occurred. The second patient was a 42-year-old man with history of hypertension and hypercholesterolemia, hospitalized for acute urinary retention followed by dizziness and horizontal diplopia. He reported a mild febrile status (37,8 °C) five days before the clinical onset. Brain and spinal cord MRI identified multiple T2-hyperintense lesions (supra- and subtentorial) with mild restricted diffusion suggestive for encephalomyelitis. CSF analysis showed intrathecal oligoclonal IgG. Other laboratory tests were unremarkable except for MOG-positivity. High dose ivMP was administered and clinical-radiological recovery was achieved except for persistence of mild urinary retention. Four months after the clinical episode, a decrease in sMOG-IgG titer was detected. According to medical history and microbiological results, we considered the first case as a para-infectious MOG-Ab mediated autoimmune attack and second case as a MOG-AD. The clinical overlap between post-infectious inflammatory syndromes and primary inflammatory demyelinating diseases is significant, and careful analysis is highly recommended to shape the appropriate management. Longitudinal clinical and sierological follow-up could clarify the etiology of the disease.

## **ORGANIZATION AND IMPLEMENTATION OF A NOVEL OUTPATIENT CLINIC DEDICATED TO PATIENTS WITH UNDIAGNOSED DISEASES**

**OBJECTIVES.** The Undiagnosed Diseases are pathological conditions that affect people with a range of disorders and disabilities, probably caused by a genetic alteration that has not been yet identified or by an atypical phenotype of a more common disease. For these people, the lack of a definite diagnosis causes considerable diagnostic and therapeutic delays, with significant psychological, social and economic distress. In order to cope with these issues, several international initiatives have been launched, culminating in the creation in 2014 of the NIH Undiagnosed Diseases Network International. In Italy, the “Clinical Center for Diagnosis Orphan Patients” was set up in 2017 at the IRCCS Ospedale Policlinico San Martino in Genoa, following an agreement with the “Comitato I Malati Invisibili”. The aims of our Clinical Center are taking care of the patients, whose diagnosis is uncertain, critically examining the complex clinical histories, improving the diagnostic investigations, reducing the social distress, increasing the quality of life, limiting the phenomenon of diagnostic 'nomadism', reducing the high costs to the national health system of repeated investigations. **MATERIALS AND METHODS.** The core of our clinical activity is realized in a multidisciplinary team, at first by a screening unit composed by a neurologist, an endocrinologist, an internal physician, an immunologist; these specialists evaluate the applications received and then share decisions with a scientific committee composed by several clinical specialists. Each evaluated patient is addressed in a tailored clinical pathway according to the specific clinical picture of disease. Genetics plays a major role in extend the etiological study of these complex diseases; we perform Next Generation Sequencing of gene panels, clinical/whole exome sequencing, and clinical/whole genome sequencing. We also designed an innovative electronic clinical record, focusing on the integration of different datasets from different sources. **RESULTS.** In the first five years of activity, we received 101 applications, whose 78 have been accepted; we have visited 65 patients and arrived to a diagnosis in 14 cases. In some of these cases, the genetic exams led to the diagnosis, detecting known or unknown previously undescribed nucleotide variants. **DISCUSSION AND CONCLUSIONS.** Our clinical center obtained results comparable to similar international centers. The possibility of having a diagnosis is a great opportunity for this group of subjects affected by a complex symptomatology; when a right diagnosis is reached, the patient has the possibility to “give a name to the disease”, and to receive social cares and appropriate clinical treatments.

## **PSYCHOGENIC NON-EPILEPTIC SEIZURES (PNES) IN THE COVID-19 PANDEMIC ERA: A SYSTEMATIC REVIEW WITH INDIVIDUAL PATIENT DATA ANALYSIS**

**Purpose:** Psychogenic nonepileptic seizures (PNES) resemble epileptic seizures but are not due to an underlying epileptic activity; they often coexist alongside epilepsy. We described and summarized the clinical characteristics of patients with PNES as reported in the literature from the outbreak of the COVID19 pandemic. We evaluated differences between patients with a diagnosis made immediately prior the pandemic (pPNES) and those who were newly diagnosed during it (nPNES). **Methods :** Systematic search with individual patient analysis of PNES cases published since the outbreak of the COVID-19 pandemic. MEDLINE (accessed through PubMed), EMBASE, and Google Scholar were Pag. 1 Psychogenic non-epileptic seizures (PNES) in the COVID-19 pandemic era: a systematic review with individual patient data analysis searched from December 2019 to November 2021. Differences between pPNES and nPNES were analyzed using Chi-square or Fisher exact test. **Results :** Eleven articles were included, with a total of 133 patients (30 males), 106 pPNES (79.7%) and 27 (20.3%) nPNES. In the pPNES group, PNES frequency increased during the COVID-19 pandemic in 20/106 (15%) patients, whereas in 78/106 (58.7%) the frequency remained stable or decreased. No similar data was available for the nPNES group. Compared to the pPNES group, nPNES was associated with a higher risk of SARS-CoV-2 infection (1/106 versus 3/27;  $p<0.0001$ ) and epilepsy diagnosis (33/106 versus 16/27;  $p<0.0001$ ), whereas psychiatric comorbidities were less frequent (76/106 versus 1/27;  $p<0.0001$ ). **Conclusions :** During the pandemic, most patients with pPNES remained stable or improved, whereas nPNES were associated with a lower risk of psychiatric comorbidities. These findings might suggest that the COVID19 pandemic does not negatively affect PNES, possibly due to lower social exposure, with reduced stress. Although probably and inevitably affected by reporting bias, these intriguing findings suggest that, at least in some patients, the COVID-19 pandemic may not necessarily lead to a worsening in the frequency of PNES and quality of life. These results could justify performing observational studies to further elucidate this issue.

## **SUCCESSFUL TREATMENT OF CHRONIC MIGRAINE COMORBIDS WITH MYASTHENIA GRAVIS AND ARTHRITIS WITH MONOCLONAL ANTIBODY AGAINST CGRP: A CASE REPORT**

**Introduction:** Monoclonal antibodies against CGRP and its receptor are the first target therapy for migraine prevention. CGRP is a 37-aminoacid peptide produced in central and peripheral sensory neurons throughout the CNS. This peptide is also localized in nonneuronal tissues throughout the body. For this reason, some researchers emphasized that circulating antibodies could affect all peripherally accessible sites where CGRP acts. CGRP-immunoreactive fibers were identified in the thymus, where it inhibits IL-2 production and proliferation of thymocytes in vitro. Transcription of the acetylcholine receptor alpha subunit, the main autoantigen in myasthenia gravis (MG), is induced by CGRP and VIP in human thymus and thymomas from MG patients. Autoimmune dysfunction of CGRP and its receptors is postulated to give rise to fatigue-related conditions such as chronic fatigue syndrome. Nonetheless, CGRP plays a role in the painful component of other chronic pain conditions, such as arthritis. **Case report:** A 49 year old woman presented to our clinic in 2016 with a history of chronic migraine. She had twenty days of headache per months. She has had 2 episodes of visual aura. Her neurologic examination was negative. She tried 3 oral preventive therapies: with amitriptyline she had no efficacy, with calcium channel blocker and topiramate she had no durable improvement. In 2019 she presented chronic fatigue and blurred vision, performed EMG repetitive stimulation, and Myasthenia gravis was diagnosed without specific antibodies, for this reason she began pyridostigmine bromide therapy. In 2021, for her chronic joint pain, she was diagnosed with psoriatic arthritis and fibromyalgia, for this reason she started therapy with methotrexate and folate once a week. Meanwhile her headache became daily and disabling, so she started therapy with fremanezumab 225 mg once a month with important improvement of her migraine: after 3 months she had only 2 migraine attacks per months with less intensity and duration. **Discussion and conclusions:** As mentioned above, a CGRP-related mechanism has been hypothesised for myasthenia, chronic fatigue, and arthritis, all pathologies comorbid with chronic migraine in our patient. In this case report, anti-CGRP molecule fremanezumab did not interfere negatively with the other comorbid conditions.

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| Boffa           | Giacomo          | Genoa                    | Medicine                       | Neurology                                                                                                      | PhD student                                                | University of Genoa                                                                         |
| Bollo           | Luca             | Bari                     | Medicine and Surgery           | Neruology                                                                                                      | Resident                                                   | University of Bari                                                                          |
| Bologna         | Fabiola          | Roma                     | Medicina e Chirurgia           | Neurologia                                                                                                     | Dirigente Medico Neurologo e Parlamentare della Repubblica | Deputata della Repubblica Italiana XVIII Legislatura presso Camera dei Deputati             |

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| Bruni        | Amalia Cecilia    | Lamezia Terme (CZ) | Medicina e Chirurgia           | Neurologia                  | Professore di prima e seconda fascia in Neurologia e Genetica Medica | ASP Catanzaro ex AS6 Lamezia Terme                                                                                                      |
| BRUNO        | CLAUDIO           | GENOVA             | Medicina e Chirurgia           | Neurologia                  | Dirigente medico                                                     | UOSD Centro Traslazionale di Miologia e Patologie Neurodegenerative. Ist. Gaslini Genova                                                |
| Bruno        | Francesco         | Turin              | Medicine                       | Neurology                   | PhD Student                                                          | University and City of Health and Science Hospital                                                                                      |
| Brusco       | Alfredo           | Torino             | Scienze Biologiche             | Dottorato in Genetica Umana | Prof. Associato in Genetica Umana                                    | Dip. Scienze Mediche - Univ. Degli studi di Torino                                                                                      |
| Buratti      | Emanuele          | Trieste            | Medicina e Chirurgia           | Neurologia                  | Ricercatore Confermato                                               | International Centre for Genetic Engineering and Biotechnology                                                                          |
| Burattini    | Marco             | Pesaro             | Medicine and Surgery           | Neurology                   | Clinician                                                            | Marche Polytechnic University                                                                                                           |
| Burioni      | Raffaella         | Parma              | Fisica                         | Dottorato in Fisica Teorica | Prof. Ordinario                                                      | Dipartimento di Scienze Matematiche, Fisiche e Informatiche Università di Parma                                                         |
| Caccamo      | Martina           | Bari               | Medicine and Surgery           | Neurology                   | Resident                                                             | University 'Aldo Moro'                                                                                                                  |
| CACCIAGUERRA | LAURA             | Milan              | Medicine and surgery           | Neurology                   | PhD student                                                          | Vita-Salute San Raffaele University                                                                                                     |
| Cagnin       | Annachiara        | Padova             | Medicina e Chirurgia           | Neurologia                  | professore associato di neurologia                                   | Department of Neurosciences - University of Padova                                                                                      |
| CALABRESE    | M                 | PADOVA             | Medicina e Chirurgia           | Neurologia                  | Professore Associato di N                                            | Università degli Studi di Verona                                                                                                        |

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|-------------------|-----------------|---------|---------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Calabresi         | Paolo           | Roma    | Medicina e Chirurgia                  | Neurologia                              | Professore di I Fascia in Neurologia                                                 | Fondazione Policlinico Gemelli IRCCS Roma                                                                                                                                                         |
| Calabro'          | Calogero        | Bologna | Medicine and Surgery                  | Neurology                               | Outpatient specialist                                                                | University of Bologna                                                                                                                                                                             |
| Calandra Buonauro | Giovanna        | Bologna | Medicina e Chirurgia                  | Neurologia                              | Prof.Associato                                                                       | IRCCS Istituto delle Scienze Neurologiche di Bologna e Dipartimento di Scienze Biomediche e Neuromotorie Alma Mater Studiorum - Università di Bologna                                             |
| Caltagirone       | Carlo Francesco | Roma    | Medicina e Chirurgia                  | Neurologia                              | Responsabile Laboratorio di Neurologia Clinica e Comportamentale                     | Fondazione Santa Lucia IRCCS Roma                                                                                                                                                                 |
| calvello          | carmen          | Rome    | Medicine                              | Neurology                               | Doctor                                                                               | University of Rome Tor Vergata                                                                                                                                                                    |
| Calvo             | Andrea          | Torino  | Medicina e Chirurgia                  | Neurologia                              | Prof.Associato                                                                       | Centro Regionale Esperto per la Sclerosi Laterale Amiotrofica Dipartimento di Neuroscienze "Rita Levi Montalcini" Università degli Studi di Torino                                                |
| Campisi           | Corrado         | Turin   | Medicine and surgery                  | N/A                                     | researcher                                                                           | University of Turin                                                                                                                                                                               |
| cancellerini      | chiara          | Bologna | Pharmacist                            | none                                    | Research Fellow                                                                      | University of Milan                                                                                                                                                                               |
| Canevelli         | Marco           | Roma    | Medicina e Chirurgia                  | Neurologia                              | Ricercatore a tempo determinato                                                      | Dipartimento di Neuroscienze Umane – Sapienza Università di Roma                                                                                                                                  |
| Canosa            | Antonio         | Turin   | Medicine and Surgery                  | Neurology                               | Assistant Professor of Neurology                                                     | University of Turin                                                                                                                                                                               |
| Cantello          | Roberto         | Torino  | MEDICINA E CHIRURGIA                  | NEUROLOGIA                              | Direttore della Clinica Neurologica e della Scuola di Specializzazione in Neurologia | Clinica Neurologica e della Scuola di Specializzazione in Neurologia presso l'Università del Piemonte Orientale “A. Avogadro”, Azienda Ospedaliero-Universitaria “Maggiore della Carità”, Novara. |
| CANU              | ELISA           | Milan   | Psychology                            | Cognitive and Behavioural Psychotherapy | Researcher                                                                           | VITA SALUTE SAN RAFFAELE UNIVERSITY                                                                                                                                                               |
| Capasso           | Nicola          | Naples  | Medicine and Surgery                  | Neurology                               | Resident in training                                                                 | Federico II University                                                                                                                                                                            |
| Capone            | Fioravante      | Roma    | Medicina e Chirurgia                  | Neurologia                              | Ricercatore Universitario in Neurologia                                              | Università Campus Bio-Medico di Roma                                                                                                                                                              |
| Cappa             | Stefano         | Pavia   | Medicina e Chirurgia                  | Neurologia                              | Pro.Ordinario di Neurologia                                                          | University School for Advanced Studies (IUSS-Pavia)                                                                                                                                               |
| CAPRONI           | STEFANO         | Terni   | Medicine and Surgery                  | Neurology                               | Neurologist                                                                          | "S. Maria" University Hospital                                                                                                                                                                    |
| caputo            | maria           | Modena  | Medicine and Surgery                  | Neurology                               | resident                                                                             | University of Modena and Reggio Emilia                                                                                                                                                            |
| Carotenuto        | Antonio         | Napoli  | Medicina e Chirurgia                  | Neurologia                              | Research Fellow                                                                      | Ospedale San Raffaele - Milano                                                                                                                                                                    |
| Carta             | Francesca       | Ferrara | Medicine and surgery                  | Neurology                               | Resident                                                                             | University of Ferrara                                                                                                                                                                             |
| Carta             | Sara            | Verona  | Master Degree in Medicine and Surgery | resident in Neurology                   | resident in neurology                                                                | University of Verona                                                                                                                                                                              |
| caselli           | maria chiara    | Pisa    | Medicina e chirurgia                  | Neurologia                              | Medico specialista                                                                   | AOU-Pisa                                                                                                                                                                                          |
| Casillo           | Francesco       | Latina  | Medicine                              | Neurology                               | Resident                                                                             | Sapienza University of Rome Polo Pontino-ICOT                                                                                                                                                     |
| Caso              | Valeria         | Perugia | Medicina e Chirurgia                  | Neurologia                              | dirigente medico                                                                     | Stroke Unit - Perugia                                                                                                                                                                             |
| Castellano        | Antonella       | Milano  | Medicina e Chirurgia                  | Radiodiagnostica                        | Ricercatore Universitario in Convenzione SSN                                         | Università vita-Salute San Raffaele                                                                                                                                                               |
| Castelnovo        | Veronica        | Milan   | Psychology (cognitive neuroscience)   | Cognitive neuroscience                  | Neuropsychologist                                                                    | Vita-Salute San Raffaele University                                                                                                                                                               |
| Castiglia         | Stefano Filippo | Latina  | Physical Therapy                      | Rehabilitation sciences                 | Doctor of Physical Therapy                                                           | "Sapienza" University of Rome-Polo Pontino                                                                                                                                                        |
| CASTIGLIONI       | ISABELLA        | MILANO  | Fisica                                | Fisica applicata                        | Professore ordinario in Fisica Applicata                                             | Università degli Studi di Milano Bicocca                                                                                                                                                          |

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|----------------|----------------|--------------------|----------------------------------------------------------|-------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Cavallini      | Annamaria      | Pavia              | Medicina e Chirurgia                                     | Neurolgia               | Direttore UOC Malattie Cerebrovascolari e Stroke Unite        | IRCCS Fondazione Casimiro Mondino                                                        |
| Cecchetti      | Giordano       | Milan              | Medicine and Surgery                                     | Neurology               | Neurologist                                                   | Vita-Salute San Raffele University                                                       |
| Centonze       | Diego          | Roma               | Medicina e Chirurgia                                     | Neurolgia               | Prof. di Neurologia                                           | Università degli Studi di Roma Tor Vergata                                               |
| Cerami         | Chiara         | Pavia              | medicina e chirurgia                                     | neurologia              | assistente medico 1° livello                                  | San Raffaele Scientific Institute of Milano                                              |
| Ceravolo       | Roberto        | Pisa               | Medicina e Chirurgia                                     | Neurologia              | professore associato                                          | Azienda Ospedaliero Universitaria di Pisa                                                |
| Cerne          | Denise         | Genoa, Italy       | Medical School Degree (MD), University of Trieste, Italy | Neurology               | 2nd year resident                                             | University of Genoa, Italy                                                               |
| Cerulli Irelli | Emanuele       | Roma               | Medicina e Chirurgia                                     | Psichiatria             | Dottorando in NEUROSCIENZE CLINICO-SPERIMENTALI E PSICHIATRIA | Università la Sapienza - Policlinico Umberto I                                           |
| Cesari         | Matteo         | Milano             | Medicina e Chirurgia                                     | Geriatría               | Prof. Ordinario                                               | Università degli Studi di Milano                                                         |
| Chiapparini    | Luisa          | Milano             | Medicina e Chirurgia                                     | Neurologia - Radiologia | Direttore UOC Radiologia 2 - Neuroradiologia                  | ISTITUTO NEUROLOGICO C. BESTA - MILANO                                                   |
| Chiò           | Adriano        | Torino             | Medicina e Chirurgia                                     | Neurologia              | Prof. Ordinario                                               | Università degli Studi di Torino                                                         |
| Cioffi         | Ettore         | Rome               | Degree in Medicine and Surgery                           | Neurology               | Neuroscience PhD                                              | University of Rome, Sapienza                                                             |
| CLERICO        | MARINELLA      | TORINO             | Medicina e Chirurgia                                     | Neurologia              | Dirigente Medico                                              | Azienda ospedaliera Orbassano - Dipt. Di Scienze Cliniche e Bilogiche, Univ. di Torino   |
| COCCO          | ELEONORA       | CAGLIARI           | Medicina e Chirurgia                                     | Neurologia              | Professore Associato                                          | Università degli Studi di Cagliari                                                       |
| Colò           | Francesca      | Rome               | Medicine and Surgery                                     | Neurology               | Resident                                                      | Catholic University School of Medicine                                                   |
| Colosimo       | Carlo          | Terni              | Medicina e Chirurgia                                     | Neurologia              | ricercatore                                                   | Dipartimento di Scienze Neurologiche - Univ. La Sapienza Roma                            |
| Comi           | Giacomo Pietro | Milano             | Medicina e Chirurgia                                     | Neurologia              | Prof. Ordinario                                               | Università degli Studi di Milano                                                         |
| Comi           | Giancarlo      | Milano             | Medicina e chirurgia                                     | Neurologia              | Professore ordinario                                          | University Vita-Salute San Raffaele Milano                                               |
| Consoli        | Arturo         | Paris, FR          | Medicina e Chirurgia                                     | Radiodiagnostica        | Medico Neuroradiologo interventista                           | Hopital Foch - ospedaliero universitario - Suresnes                                      |
| Consonni       | Monica         | Milan              | Psychology                                               | Neuroscience            | researcher                                                    | Fondazione IRCCS Istituto Neurologico Carlo Besta                                        |
| Conte          | Antonella      | Roma               | Medicina e chirurgia                                     | Neurologia              | professore associato                                          | Università di Roma "Sapienza"                                                            |
| Conversi       | Francesco      | L'Aquila           | Medicine and Surgery                                     | Neurology               | Resident                                                      | University of L'Aquila                                                                   |
| Coppola        | Gianluca       | Latina             | Medicina e Chirurgia                                     | Neurologia              | neurologo                                                     | Department of Medico-Surgical Sciences and Biotechnologies - Sapienza University of Rome |
| Corbelli       | Illenia        | Perugia            | MEDICINA E CHIRURGIA                                     | NEUROLOGIA              | DIRIGENTE MEDICO                                              | AZIENDA OSPEDALIERA DI PERUGIA                                                           |
| Corbetta       | Maurizio       | Padova             | Medicina e Chirurgia                                     | Neurologia              | Professor ordinario di neurologia                             | Dipartimento di Neuroscienze Università' di Padova Azienda Ospedaliera di Padova         |
| Cordano        | Christian      | San Francisco, USA | Medicina e Chirurgia                                     | Neurologia              | Associate Researcher, Neurology                               | University of California San Francisco - UCSF Weill Institute for Neurosciences          |
| Corrado        | Michele        | Pavia              | Medicine and Surgery                                     | Neurology               | Resident                                                      | University of Pavia                                                                      |

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|----------------|---------------|-----------------------|--------------------------------------------|---------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Cortelli       | Pietro        | Bologna               | Medicina e Chirurgia                       | Neurologia          | Prof. Ordinario                                                     | Dip. Scienze Neurologiche<br>Alma Mater Studiorum -<br>Università degli Studi di<br>Bologna Clinica<br>Neurologica |
| Cortese        | Rosa          | Siena                 | Medicine and Surgery                       | Neurology           | Neurologist                                                         | University of Siena                                                                                                |
| Corti          | Stefania      | Milano                | Medicina e Chirurgia                       | Neurologia          | Prof. Associato                                                     | Università degli Studi di<br>Milano                                                                                |
| Cosentino      | Giuseppe      | Pavia                 | Medicine and Surgery<br>Degree             | Neurology           | MD, Neurologist                                                     | University of Pavia                                                                                                |
| Cossu          | Massimo       | Milano                | Medicina e Chirurgia                       | Neurologia          | dirigente medico                                                    | Ospedale Niguarda Milano                                                                                           |
| Costagliola    | Antonella     | Siena                 | Medicine                                   | Neurology           | Medical resident                                                    | University of Siena                                                                                                |
| Cotta Ramusino | Matteo        | Pavia, Italy          | Medicine and Surgery                       | Neurology           | Neurologist                                                         | University of Pavia                                                                                                |
| Cristillo      | Viviana       | Brescia               | Medicine                                   | Neurology           | Neurologist                                                         | University of Brescia                                                                                              |
| Cuomo          | Nunzia        | Naples                | Medicine and Surgery                       | Neurology           | Resident                                                            | Federico II                                                                                                        |
| damato         | valentina     | Florence              | medicine                                   | Neurology           | Assistant professor                                                 | University of Florence                                                                                             |
| d'Ambrosio     | Alessandro    | Naples                | Medicine and Surgery                       | Neurology           | Neurologist                                                         | University of Campania<br>"Luigi Vanvitelli"                                                                       |
| D'Amelio       | Marco         | Palermo               | Medicina e Chirurgia                       | Neurologia          | Dirigente medico                                                    | Università degli Studi di<br>Palermo Dipartimento di<br>Biomedica Sperimentale e<br>Neuroscienze Cliniche          |
| D'Amico        | Emanuele      | FOGGIA                | MEDICINE AND SURGERY                       | NEUROLOGY           | MEDICAL DOCTOR                                                      | UNIVERSITY OF FOGGIA                                                                                               |
| D'ANEILLO      | ALFREDO       | POZZILI, IS           | Medicina e Chirurgia                       | Neurologia          | Dirigente Medico                                                    | IRCCS Neuromed, Pozzilli<br>IS                                                                                     |
| D'Antonio      | Fabrizia      | Rome                  | Medicine                                   | Neurology           | Researcher                                                          | Sapienza Università of<br>Rome                                                                                     |
| De Bartolo     | Maria Ilenia  | Pozzilli (IS)         | Master's degree in<br>Medicine and Surgery | Neurology           | PhD student                                                         | Sapienza University of<br>Rome                                                                                     |
| de Falco       | Arturo        | Napoli                | Medicine and Surgery                       | Neurologist         | Consultant                                                          | ASL Napoli 1 Centro                                                                                                |
| De Franco      | Valentino     | Siena                 | Medicine and Surgery                       | Neurology resident  | Doctor                                                              | University of Siena                                                                                                |
| De Giorgio     | Roberto       | Ferrara               | Medicina e Chirurgia                       | Medicina Interna    | Professore Ordinario                                                | Dipartimento di Scienze<br>Mediche della Scuola di<br>Medicina e Chirurgia<br>dell'Università di Ferrara           |
| De Icco        | Roberto       | Pavia                 | Medicina e Chirurgia                       | Neuropsicopatologia | specializzando in<br>neurologia                                     | IRCCS Mondino<br>Foundation - Pavia                                                                                |
| De Lorenzo     | Alberto       | Milan                 | Medicine and Surgery                       | Neurology resident  | Neurology resident and<br>researcher                                | University of Milan                                                                                                |
| De Martino     | Antonio       | Catanzaro             | Medicine and Surgery                       | Neurology           | Resident                                                            | University of Magna<br>Graecia of Catanzaro                                                                        |
| De Michele     | Giuseppe      | Napoli                | Medicina e Chiurgia                        | Neurologia          | Professore Ordinario in<br>Neurologia                               | Università degli Studi di<br>Napoli                                                                                |
| De Riggi       | Martina       | Rome                  | Medicine and Surgery                       | Neurology           | Resident                                                            | Roma "La Sapienza"                                                                                                 |
| DE ROSSI       | NICOLA        | MONTICHI<br>ARI, BS   | Medicina e Chirurgia                       | Neurologia          | Dirigente Medico                                                    | Centro SM Montichiari, BS                                                                                          |
| De Stefano     | Nicola        | Siena                 | Medicina e Chirurgia                       | Neurologia          | Professore Ordinario in<br>Neurologia                               | Università degli Studi di<br>Siena                                                                                 |
| de Tommaso     | Marina        | Bari                  | Medicina e Chirurgia                       | Neurologia          | Prof. Ordinario                                                     | Università di Bari                                                                                                 |
| De Vanna       | Gioacchino    | Milan                 | Medicine and Surgery                       | Neurology           | M.D.                                                                | University of Perugia                                                                                              |
| Defazio        | Giovanni      | Cagliari              | Medicina e Chirurgia                       | Neurologia          | Professore Ordinario in<br>Neurologia                               | Scienze Mediche e Sanità<br>Pubblica - Università degli<br>Studi di Cagliari                                       |
| Degan          | Diana         | Bassano<br>Del Grappa | Medicine and Surgery                       | Neurology           | Doctor                                                              | San Bassiano Hospital                                                                                              |
| Del Sette      | Massimo       | Genova                | Medicina e Chirurgia                       | Neurologia          | Direttore UO                                                        | E.O. Ospedali Galliera<br>Genova                                                                                   |
| Di Bonaventura | Carlo         | Roma                  | Medicina e Chirurgia                       | Neurologia          | Dirigente medico                                                    | Università La Sapienza<br>Roma                                                                                     |
| Di Donna       | Martina Gaia  | Rome                  | Medicine and Surgery                       | Neurology           | Resident                                                            | policlinic of tor vergata                                                                                          |
| DI FILIPPO     | MASSIMILIANO  | PERUGIA               | Medicina e Chirurgia                       | Neurologia          | Professore Associato                                                | Università degli Studi di<br>Perugia                                                                               |
| Di Fonzo       | Alessio       | Milano                | Medicina e Chirurgia                       | Neurologia          | Responsabile del<br>Gruppo Parkinson e<br>disturbi<br>del movimento | Ospedale Maggiore<br>policlinico, Centro Dino<br>Ferrari - Univ. Degli studi<br>di Milano                          |
| Di Francesco   | Jacopo Cosimo | Monza                 | Medicine and Surgery                       | Neurology           | Neurologist                                                         | University of Milano -<br>Bicocca                                                                                  |

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|-------------|-------------------|----------------------|--------------------------------|------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Di Gennaro  | Giancarlo         | Roma - Pozzilli (IS) | Medicina e Chirurgia           | Neurologia                         | Dirigente Medico                                        | Epilepsy Surgery Center IRCCS NEUROMED, Pozzilli (IS)                                                                           |
| Di Lazzaro  | Giulia            | Rome                 | Medicine and Surgery           | Neurology                          | Neurologist                                             | Università degli studi di Roma Tor Vergata                                                                                      |
| Di Lazzaro  | Vincenzo          | Roma                 | Medicina e Chirurgia           | Neurologia                         | Direttore UOC Neurologia                                | Università Campus Bio Medico Roma                                                                                               |
| Di Lorenzo  | Cherubino         | Latina               | Medicine                       | Neurologist                        | Lecturer                                                | Sapienza University                                                                                                             |
| Di Lorenzo  | Francesco         | Roma                 | Medicina e Chirurgia           | Neurologia                         | Dottorando                                              | Fondazione Santa Lucia Roma                                                                                                     |
| Di Luca     | Monica            | Milano               | Magistrale in CTF              | -                                  | Direttore - Prof. Ordinario                             | Università degli Studi di Milano                                                                                                |
| Di Stefano  | Vincenzo          | Palermo              | MD                             | Neurology                          | Researcher                                              | University of Palermo                                                                                                           |
| Di Tella    | Sonia             | Milan                | Cognitive Neuroscience         | Cognitive Behavioral Psychotherapy | Research Fellow                                         | Università Cattolica del Sacro Cuore                                                                                            |
| Di Vico     | Ilaria Antonella  | Verona, New York     | Medicine                       | Neurology                          | PhD Student, MDS Clinical and Research Fellow           | University of Verona, NYU University                                                                                            |
| Diamanti    | Susanna           | Monza                | Medicina e Chirurgia           | Neurologia                         | Consulente medico specialista in Neurologia             | ASST Monza – Ospedale San Gerardo                                                                                               |
| Digiovanni  | Anna              | Chieti               | Medicine                       | Neurology                          | Resident                                                | University G. d'Annunzio of Chieti-Pescara                                                                                      |
| Dominelli   | Federica          | Rome                 | Master Degree                  | Medical Biotechnologies            | PhD student                                             | Sapienza                                                                                                                        |
| Donadio     | Vincenzo          | Bologna              | Medicina e Chirurgia           | Neurologia                         | neurologo                                               | IRCCS Istituto Scienze Neurologiche di Bologna                                                                                  |
| Doneddu     | Pietro Emiliano   | Milan                | Medicine and Surgery           | Neurology                          | Researcher                                              | Humanitas University                                                                                                            |
| Donniaquoio | Andrea            | Genoa                | Degree in Medicine and Surgery | Neurology                          | Resident                                                | University of Genoa                                                                                                             |
| Eleopra     | Roberto           | Milano               | Medicina e Chiurgia            | Neurologia                         | Dirigente Medico UOC Neurologia                         | Dipartimento di Neuroscienze Cliniche Fondazione IRCCS Istituto Neurologico Carlo Besta Milano                                  |
| Elkoush     | Aya               | Milan                | Medicine                       | Neurology internship               | Graduating student                                      | University of Milan                                                                                                             |
| Emiliani    | Filippo           | Florence             | Medicine and Surgery           | Neurology                          | Resident doctor                                         | University of Florence. Department of Neuroscience, Psychology, Drug Area and Child Health                                      |
| Emmi        | Aron              | Padova               | Neuroscienze                   | PhD in Neuroscience                | Researcher                                              | University of Padova                                                                                                            |
| Ercoli      | Tommaso           | Cagliari             | Medicine                       | Neurology                          | PhD Student                                             | University of Cagliari                                                                                                          |
| Erro        | Roberto           | Salerno              | Medicina e Chirurgia           | Neurologia                         | Ricercatore a Tempo Determinato                         | Università di Salerno, Dipartimento di Medicina, Chirurgia e Odontoiatria “Scuola Medica Salernitana”                           |
| Esposito    | Vincenzo          | Roma                 | Medicina e Chirurgia           | Neurochirurgia                     | Dirigente medico                                        | Unità Operativa Complessa di Neurochirurgia I.R.C.C.S - Neuromed Pozzilli                                                       |
| Estraneo    | Anna              | Nola, NA             | medicina e chirurgia           | neurologia                         | dirigente medico 1° livello                             | Istituti clinici scientifici Maugeri, IRCCS                                                                                     |
| Evoli       | Amelia            | Roma                 | Medicina e Chirurgia           | Neurologia                         | Professore associato                                    | Istituto di Neurologia Università La Cattolica Roma                                                                             |
| Fabbrini    | Giovanni          | Roma                 | Medicina e Chirurgia           | Neurolgia                          | Prof. Ordinario                                         | Dirigente di II Livello                                                                                                         |
| Fabrizi     | Gian Maria        | Verona               | Medicina e Chirurgia           | Neurologia                         | UOC di Neurologia Ospedale Policlinico GB Rossi, Verona | Professore I Fascia di Neurologia                                                                                               |
| Faggin      | Federico          | California, USA      | Fisica                         | Fisica                             | fisico                                                  | Capo progetto dell'Intel 4004 e responsabile dello sviluppo dei microprocessori 8008, 4040 e 8080 e delle relative architetture |
| Falato      | Emma              | Rome                 | Medicine and Surgery           | Neurology                          | Neurology specialist                                    | Campus Bio-Medico University Hospital Foundation                                                                                |
| Falcone     | Grazia Maria Igea | Messina              | Medical Degree                 | None                               | Neurology Resident                                      | University of Messina                                                                                                           |

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|----------------|----------------|-----------------------|-------------------------------|-------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Falini         | Andrea         | Milano                | Medicina e Chirurgia          | Radiologia e neurologia | Professore di ruolo II fascia, MED/37 Neuroradiologia                         | Divisione di Neuroscienze, Istituto Scientifico San Raffaele Milano                                                |
| Falletti       | Marco          | Rome                  | Medicine and Surgery          | Neurology               | MD                                                                            | Sapienza University of Roma                                                                                        |
| Fancellu       | Roberto        | Genoa                 | Medicine and Surgery          | Neurology               | Medical doctor                                                                | ---                                                                                                                |
| fanciulli      | cristiano      | Bologna               | Medicine and Surgery          | Neurology               | Resident physician                                                            | University of Bologna                                                                                              |
| Favruzzo       | Francesco      | Padua                 | Medicine and Surgery          | Neurology               | resident                                                                      | University of Padua                                                                                                |
| Ferini Strambi | Luigi          | Milano                | Medicina e Chirurgia          | Neurologia              | Professore Ordinario                                                          | Università Vita-Salute San Raffaele - Milano                                                                       |
| FERLAZZO       | EDOARDO        | CATANZARO             | Medicina e Chirurgia          | Neurologia              | Professore Associato                                                          | Università Magna Graecia di Catanzaro                                                                              |
| Ferrarese      | Carlo          | Monza                 | Medicina e Chirurgia          | Neurologia              | Prof. Ordinario                                                               | Università di Milano Bicocca                                                                                       |
| Ferrari        | Federica       | Pavia                 | Medicine and Surgery, Biology | Neurology               | Resident                                                                      | University of Pavia                                                                                                |
| Ferrari        | Sergio         | Verona                | Medicina e Chirurgia          | Neurologia              | Dirigente Medico                                                              | Dipartimento di Neuroscienze Ospedale San Gerardo - Monza MI                                                       |
| Ferraro        | Pilar Maria    | Genoa                 | Neuropsychology               | Neurosciences           | PostDoctoral Research Fellow                                                  | University of Genoa                                                                                                |
| Ferreri        | Florinda       | Padova                | Medicina e Chirurgia          | Neurologia              | Professore Associato                                                          | Dipartimento di Neuroscienze - Università degli Studi di Padova                                                    |
| Ferretti       | Simone         | Florence              | Medicine and Surgery          | Neurology               | Resident                                                                      | University of Florence                                                                                             |
| Figini         | Silvia         | Pavia                 | Economia e Commercio          | PHD IN STATISTICS       | Professore Ordinario                                                          | Dipartimento di Scienze Politiche e sociali - Università degli studi di Pavia                                      |
| Filippi        | Massimo        | Milano                | Medicina e Chirurgia          | Neurologia              | professore ordinario di neurologia                                            | Università Vita-Salute San Raffaele Milano                                                                         |
| Filosto        | Massimiliano   | Brescia               | Medicina e Chirurgia          | Neurologia              | Prof. Associato di Neurologia                                                 | Università degli Studi di Brescia                                                                                  |
| Fonderico      | Mattia         | Florence              | Medicine                      | Neurology               | PhD                                                                           | University of Florence                                                                                             |
| Fontanelli     | Lorenzo        | Pisa                  | Medicine                      | Neurology               | Resident                                                                      | University of Pisa                                                                                                 |
| Formisano      | Rita           | Roma                  | Medicina e Chirurgia          | Neurologia              | Direttore Neuroriabilitazione 2                                               | Ospedale di Riabilitazione Fondazione Santa Lucia Roma                                                             |
| Fortunato      | Francesco      | Catanzaro             | Medicine                      | Neurology               | PhD Student                                                                   | Magna Graecia University                                                                                           |
| Foschi         | Matteo         | Bologna               | Medicine and Surgery          | Neurology               | Consultant Neurologist                                                        | University of Bologna                                                                                              |
| Frau           | Claudia        | Sassari               | Medicine                      | Neurology               | PhD Student                                                                   | University of Sassari                                                                                              |
| Frisoni        | Giovanni       | Brescia - Ginevra, CH | Medicina e Chirurgia          | Neurologia              | Direttore Centro della Memoria                                                | Ospedale Universitario di Ginevra (CH)                                                                             |
| Fumagalli      | Giorgio Giulio | Milan                 | Medicine                      | Neurology               | Neurologist                                                                   | University of Milan                                                                                                |
| Fumagalli      | Stefano        | Milano                | Biotechnologie industriali    | Neuroscienze            | Capo Unità                                                                    | Università degli Studi di Milano                                                                                   |
| Galderisi      | Silvana        | Napoli                | Medicina e Chirurgia          | Psichiatria             | Professore Ordinario di Psichiatria, Direttore dell'Unità Operativa Complessa | I Dipartimento di Salute Mentale e Fisica e Medicina Preventiva dell'Università della Campania "Luigi Vanvitelli". |
| Galgani        | Alessandro     | Pisa                  | Medical Degree                | Neurology               | Resident                                                                      | University of Pisa                                                                                                 |
| Gallo          | Antonio        | Napoli                | Medicine and Surgery          | Neurology               | Associate Professor                                                           | University of Campania Luigi Vanvitelli                                                                            |
| Gallo          | Chiara         | Novara                | Medicine and Surgery          | Neurology               | Resident MD                                                                   | University of Piemonte Orientale                                                                                   |
| GALLO          | PAOLO          | PADOVA                | Medicina e Chirurgia          | Neurologia              | Professore associato                                                          | Dipartimento di Neuroscienze - Univ. di Padova                                                                     |
| Gambardella    | Antonio        | Catanzaro             | Medicina e Chirurgia          | Neurologia              | Professore ordinario di Neurologia (MED 26)                                   | Università magna Grecia Catanzaro - Catanzaro                                                                      |
| Gandoglia      | Ilaria         | Genoa                 | Medicine and Surgery          | Neurology               | Neurologist                                                                   | Genoa                                                                                                              |
| Garelli        | Paola          | Turin                 | Medicine and Surgery          | Neurology               | Resident                                                                      | University of Turin                                                                                                |
| Gasperini      | Claudio        | Roma                  | Medicina e Chirurgia          | Neurologia              | Direttore UOC Neurologia                                                      | Dipartimento di Neuroscienze Azienda Ospedaliera San Camillo-Forlanini di Roma                                     |

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| COGNOME           | NOME             | CITTA'    | LAUREA                       | SPECIALIZZAZIONE                | QUALIFICA                                                                                                      | AFFILIAZIONE                                                                                                       |
|-------------------|------------------|-----------|------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Gastaldi          | Matteo           | Pavia     | Medicina e Chirurgia         | Neurologia                      | Dirigente Medico in Neurologia                                                                                 | Fondazione Mondino - Pavia                                                                                         |
| GEPPETTI          | PIERANGELO       | FIRENZE   | Medicina e Chirurgia         | Endocrinologia                  | Dirigente Medico                                                                                               | Azienda Ospedaliero-Universitaria Careggi                                                                          |
| GERMANO           | FRANCESCO        | GENOVA    | medicine                     | Resident in Neurology           | Resident in Neurology                                                                                          | GENOVA                                                                                                             |
| Ghezzi            | Andrea           | Modena    | Medicine and Surgery         | Neurology                       | Resident                                                                                                       | University of Modena and Reggio Emilia                                                                             |
| Giani             | Luca             | Milan     | Medicine                     | Neurology                       | Clinician                                                                                                      | Univesity of Milan                                                                                                 |
| Giannoccaro       | Maria Pia        | Bologna   | Medicine and surgery         | Neurology                       | Assistant professor                                                                                            | University of Bologna                                                                                              |
| Gigli             | Gianluigi        | Udine     | Medicina e Chirurgia         | Neurologia                      | PA                                                                                                             | Università degli Studi di Udine                                                                                    |
| Girolami          | Sara             | Sulmona   | Neurophysiology Technologist | Neurophysiology Technologist    | Autor                                                                                                          | SS Annunziata Hospital                                                                                             |
| Giuffrè           | Guido Maria      | Rome      | Medicine & Surgery           | Neurology                       | MD                                                                                                             | Catholic University of the Sacred Heart                                                                            |
| Giugno            | Alessia          | Catanzaro | Medicine and Surgery         | Neurology                       | Medical Doctor                                                                                                 | University "Magna Graecia"                                                                                         |
| Golfre' Andreasi  | Nico             | Milano    | Medicine                     | Neurology                       | Medical Doctor                                                                                                 | University of Ferrara                                                                                              |
| Graziano          | Fabiola          | Palermo   | Medicine and Surgery         | Neurology                       | Resident                                                                                                       | University of Palermo                                                                                              |
| Grillo            | Piergiorgio      | Rome      | Medicine and Surgery         | Neurology                       | Resident                                                                                                       | University of Roma Tor Vergata                                                                                     |
| Grisanti          | Stefano Giuseppe | Genoa     | Medicine and Surgery         | Neurology                       | Neurologist                                                                                                    | University of Genoa                                                                                                |
| Guadoso           | Antonio          | Roma      | Scienze Politiche            | -                               | Capo della segreteria tecnica del Ministro della Salute                                                        | Ministero della Salute                                                                                             |
| Guarino           | Maria            | Bologna   | Medicina e Chirurgia         | Neurologia                      | SS Gestione e Coordinamento dell'Attività Neurologica in Emergenza - Urgenza e Programmata in AOU (NEURO- AOU) | Azienda Ospedaliero - Universitaria Policlinico S.Orsola-Malpighi Bologna                                          |
| Guarnieri         | Biancamaria      | Pescara   | Medicina e Chirurgia         | Neurologia                      | Responsabile centro medicina del sonno                                                                         | Casa di cura Villa Serena Città Sant'Angelo                                                                        |
| Guerra            | Andrea           | Roma      | Medicina e Chirurgia         | Neurologia                      | borsista                                                                                                       | Department of Human Neurosciences - Sapienza, University of Rome                                                   |
| Guerra            | Tommaso          | Bari      | Medicine and surgery         | Neurology                       | Resident                                                                                                       | University of Bari "Aldo Moro"                                                                                     |
| Habetswallner     | Francesco        | Napoli    | Medicina e Chirurgia         | Neurologia                      | Direttore unità operativa complessa di neurofisiopatologia                                                     | AORN Cardarelli                                                                                                    |
| Iacono            | Salvatore        | Palermo   | Medicine                     | Neurology                       | Resident                                                                                                       | University of Palermo                                                                                              |
| Iaffaldano        | Pietro           | Bari      | Medical degree               | Neurology                       | Associate Professor of Neurology                                                                               | University of Bari Aldo Moro                                                                                       |
| INGLESE           | MATILDE          | GENOVA    | Medicina e Chirurgia         | Neurologia                      | Professore associato                                                                                           | Dipartimento di neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili - DINOGLMI Genova |
| Ingravallo        | Francesca        | Bologna   | Medicine and surgery         | Legal medicine                  | Associate Professor                                                                                            | University of Bologna                                                                                              |
| Iodice            | Francesco        | Roma      | Medicina e Chirurgia         | Neurologia                      | Dottorando Neuroscienze                                                                                        | Fondazione Policlinico Universitario A. Gemelli Roma                                                               |
| Iorio             | Raffaele         | Roma      | Medicina e Chirurgia         | Neurologia                      | Dirigente Medico                                                                                               | Policlinico Gemelli Università Cattolica del Sacro Cuore di Roma                                                   |
| Ippolito          | Giuseppe         | Roma      | Medicina e Chirurgia         | Malattie Infettive              | Direttore Scientifico                                                                                          | Istituto Nazionale per le Malattie Infettive (INMI) “Lazzaro Spallanzani” di Roma                                  |
| Jolascon          | Giovanni         | Napoli    | Medicina e Chirurgia         | Medicina Fisica e Riabilitativa | Direttore del Dipartimento Multidisciplinare di Specialità Medico-chirurgiche e Odontoiatriche                 | Università degli Studi della Campania “Luigi Vanvitelli”, Napoli                                                   |
| Kenneth Ricciardi | Giuseppe         | Verona    | Medicina e Chirurgia         | Radiologia                      | dirigente medico 1° livello                                                                                    | Università degli Studi di Verona                                                                                   |

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|---------------|---------------|------------------|-----------------------------------|-------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| La Bella      | Vincenzo      | Palermo          | Medicina e Chirurgia              | Neurologia                          | Prof. Associato                                                | Università di Palermo,<br>Dipartimento di<br>Biomedicina,<br>Neuroscienze e<br>Diagnostica Avanzata        |
| La Morgia     | Chiara        | Bologna          | Medicine                          | Neurology                           | Neurologist                                                    | University of Bologna                                                                                      |
| Labate        | Angelo        | Messina          | Medicina e Chirurgia              | neurologia                          | Ricercatore Confermato<br>SSD 06/D6                            | Università di Catanzaro,<br>Facoltà di Medicina e<br>Chirurgia, Catanzaro                                  |
| Lacerenza     | Marco         | Milano           | Medicina e Chirurgia              | Neurologia                          | Responsabile servizi di<br>Neurologia e Medicina<br>del Dolore | Humanitas San PIO X -<br>Milano                                                                            |
| Lamperti      | Costanza      | Milano           | Medicina e Chirurgia              | Neurologia                          | Dirigente Medico                                               | Fondazione IRCCS Istituto<br>Neurologico Carlo Besta -<br>UOC Neurogenetica<br>Molecolare Milano           |
| Landi         | Doriana       | Rome             | Medicine and Surgery              | Neurology                           | Researcher                                                     | Tor Vergata University                                                                                     |
| Landolfo      | Salvatore     | Bari             | Medicine and Surgery              | Neurology                           | Resident                                                       | University of Bari "Aldo<br>Moro"                                                                          |
| Lanfranconi   | Silvia        | Milan            | Degree in medicine and<br>surgery | Neurology                           | Neurologist                                                    | University of Milan                                                                                        |
| Lanza         | Giuseppe      | Catania          | Medicina e Chirurgia              | Neurologia                          | Prof. Associato                                                | UNIVERSITA' DEGLI STUDI<br>DI CATANIA                                                                      |
| Lanzillo      | Roberta       | Napoli           | Medicina e Chirurgia              | Neurologia                          | Prof. Associato                                                | Università di napoli<br>Federico II                                                                        |
| Lapucci       | Caterina      | Genoa            | Medicine and Surgery              | Neurology                           | Neurologist                                                    | Genoa                                                                                                      |
| LATTANZI      | SIMONA        | ANCONA           | Medicina e Chirurgia              | Neurologia                          | Dirigente Medico                                               | Ospedali Riuniti di Ancona                                                                                 |
| Lauria Pinter | Giuseppe      | Milano           | Medicina e Chirurgia              | Neurologia                          | Dirigente medico                                               | ISTITUTO NEUROLOGICO<br>C. BESTA - MILANO                                                                  |
| LAZZARIN      | SERENA MARITA | ROZZANO          | MEDICINA E CHIRURGIA              | NEUROLOGIA                          | ASSISTENTE                                                     | Humanitas University                                                                                       |
| Leocadi       | Michela       | Milan            | Psychology                        | Neuropsychology                     | PhD student                                                    | Vita-Salute San Raffaele<br>University                                                                     |
| Leocani       | Letizia       | Milano           | Medicina e Chirurgia              | Neurologia                          | Professore Associato                                           | Università Vita-Salute San<br>Raffaele di Milano                                                           |
| Leodori       | Giorgio       | Roma             | Medicina e Chirurgia              | Neurologia                          | RTDA                                                           | università degli Studi La<br>Sapienza Roma                                                                 |
| Leone         | Carmela       | Ragusa           | Medicina e Chirurgia              | Neurologia                          | Dirigente Medico di I<br>Livello                               | AZIENDA SANITARIA<br>PROVINCIALE RAGUSA                                                                    |
| Leone         | Massimo       | Milano           | Medicina e Chirurgia              | Neurologia                          | Dirigente medico                                               | Fondazione Istituto<br>Neurologico Besta<br>Milano,IRCCS                                                   |
| Libri         | Ilenia        | Brescia          | Medicine and Surgery              | Neurology                           | Resident                                                       | University of Brescia                                                                                      |
| Liguori       | Rocco         | Bologna          | Medicina e Chirurgia              | Neurologia                          | Professore Universitario<br>di I Fascia                        | Università di Bologna -<br>Dipartimento di Scienze<br>Biomediche e<br>Neuromotorie                         |
| Liguori       | Claudio       | Roma             | Medicina e Chirurgia              | Neurofisiopatologia -<br>Neurologia | RTD/B                                                          | Policlinico Tor Vergata<br>Roma                                                                            |
| Lodi          | Raffaele      | Bologna          | Medicina e Chirurgia              | Radiagnostica                       | Professore ordinario                                           | Dipartimento di Scienze<br>Biomediche e<br>Neuromotorie - Università<br>di Bologna                         |
| Lombardi      | Carolina      | Milano           | Medicina e Chirurgia              | Neurofisiopatologia                 | Professore Associato                                           | Università degli Studi di<br>Milano Bicocca, Milano                                                        |
| Longoni       | Marco         | Forlì-<br>Cesena | Medicina e chirurgia              | Neurologia                          | dirigente medico                                               | Direttore SC Cesena-Forlì<br>AUSL Romagna                                                                  |
| Lopiano       | Leonardo      | Torino           | Medicina e Chirurgia              | Neurologia                          | Prof. Ordinario                                                | Università degli Studi di<br>Torino                                                                        |
| LOREFICE      | LORENA        | CAGLIARI         | Medicina e Chirurgia              | Neurologia                          | Dirigente Medico                                               | ASL Cagliari                                                                                               |
| Lorenzano     | Svetlana      | Rome             | Medicine and Surgery              | Neurology                           | Ricercatore                                                    | Sapienza University of<br>Rome                                                                             |
| Lorenzl       | Stefan        | DE               | Medicina e Chirurgia              | Neurologia                          | MD, PhD, Professor of<br>Neurology                             | Peracelsus Medical<br>University - Department<br>of Palliative Care<br>Grosshadern University of<br>Munich |
| Lorusso       | Lorenzo       | Milano           | Medicina e chirurgia              | Neurologia                          | dirigente medico                                               | Struttura complessa di<br>Neurologia, Merate, ASST-<br>Lecco                                               |
| Iosa          | Mattia        | Genoa            | Medicine and Surgery              | Neurology                           | Resident                                                       | University of Genoa                                                                                        |

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|-------------|--------------|-----------|--------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| LUDOLPH     | ALBERT C.    | ULM, D    | Medicina e Chirurgia           | Neurologia                                   | Dirigente Medico                                                                                | Klinik für Neurologie der Universität Ulm, RKU                                                                                      |
| Lugaresi    | Alessandra   | Bologna   | Medicina e Chirurgia           | Neurologia                                   | Prof. Associato in Neurologia - Convenzionato                                                   | Università di Bologna - Dipartimento di Scienze Biomediche e Neuromotorie Bologna                                                   |
| Luigetti    | Marco        | Roma      | Medicina e Chirurgia           | Neurologia                                   | Dirigente Medico                                                                                | Università Cattolica del Sacro Cuore                                                                                                |
| Maestrini   | Ilaria       | Rome      | Degree in Medicine and Surgery | Board Certification in Neurology             | Post-doc fellowship                                                                             | Sapienza University of Rome                                                                                                         |
| MAGGIONI    | ALDO PIETRO  | MILANO    | Medicina e Chirurgia           | Malattie dell'Apparato Cardiovascolare       | Dirigente Medico                                                                                | ANMCO Research CenterUniversità degli Studi di Milano                                                                               |
| Magliozzi   | Roberta      | Verona    | Scienze biologiche             | Neuroscienze                                 | Ricercatore RTDA                                                                                | Dipartimento di Neuroscienze, Biomedicina e Scienze del Movimento - Università degli Studi di Verona                                |
| Maj         | Mario        | Napoli    | Medicina e Chirurgia           | Psichiatria                                  | Prof. Ordinario                                                                                 | Università degli Studi della Campania “Luigi Vanvitelli”, Napoli                                                                    |
| Mancardi    | Gianluigi    | Genova    | Medicina e Chirurgia           | Neurologia                                   | in quiescenza                                                                                   | Ist. Maugeri Genova                                                                                                                 |
| Mancuso     | Mauro        | Grosseto  | Medicina e Chirurgia           | Neurologia - Medicina Fisica e Riabilitativa | Direttore UOC RRF Area Grossetana - Direttore Area Dipartimento Medicina Fisica e Riabilitativa | Area Dipartimentale Medicina Fisica e Riabilitativa -Azienda USL Toscana Sud Est                                                    |
| Mancuso     | Michelangelo | Pisa      | Medicina e Chirurgia           | Neurologia                                   | Prof. Associato                                                                                 | AZIENDA OSPEDALIERO-UNIVERSITARIA PISANA                                                                                            |
| Mandich     | Paola        | Genova    | Medicina e Chirurgia           | Genetica Medica                              | Prof. di I fascia MED/03                                                                        | Ospedale San Martino - Genova                                                                                                       |
| MANDRIOLI   | JESSICA      | Modena    | Medicine                       | Neurology                                    | Associate Professor in Neurology                                                                | University of Modena and Reggio Emilia                                                                                              |
| Manganelli  | Fiore        | Napoli    | Medicina e Chirurgia           | Neurologia                                   | professore ordinario                                                                            | Dipartimento di Neuroscienze , Scienze della Riproduzione ed Odontostomatologiche - Università studi di Napoli Federico II (Napoli) |
| Manganotti  | Paolo        | Trieste   | Medicina e Chirurgia           | Neurologia                                   | professore ordinario                                                                            | UCO Clinica Neurologica di Trieste - Azienda Sanitaria Universitaria Giuliano Isontina (ASUGI)                                      |
| Manni       | Alessia      | Bari      | Medicine and Surgery           | Neurology                                    | Reasearch Fellow                                                                                | University of Bari "Aldo Moro"                                                                                                      |
| Maranzano   | Alessio      | Milan     | Medicine and Surgery           | Neurology                                    | resident                                                                                        | University of Milan                                                                                                                 |
| Marastoni   | Damiano      | Verona    | Medicine                       | Neurology                                    | Neurologist                                                                                     | Verona                                                                                                                              |
| Marchioni   | Enrico       | Pavia     | Medicina e Chirurgia           | Neurologia                                   | Direttore SC                                                                                    | IRCCS Clinica Neurologica Ist. "C. Mondino"                                                                                         |
| Marcosano   | Marilena     | Rome      | medicine and surgery           | Neurology                                    | Resident doctor                                                                                 | Campus Bio-medico University                                                                                                        |
| Mariotti    | Caterina     | Milano    | Medicina e Chirurgia           | Neurologia                                   | Dirigente Medico                                                                                | Istituto Besta di Milano                                                                                                            |
| Marotta     | Chiara       | Naples    | Medicine and Surgery           | Neurology                                    | Resident                                                                                        | University of Campania "Luigi Vanvitelli"                                                                                           |
| Martino     | Iolanda      | Catanzaro | Psychology                     | Psychotherapy                                | Psychologist                                                                                    | University “Magna Graecia” of Catanzaro                                                                                             |
| mascarella  | davide       | Bologna   | Medicine and surgery           | neurology                                    | resident                                                                                        | Alma mater Studiorum Bologna                                                                                                        |
| masciocchi  | stefano      | Pavia     | Medical degree                 | neurology                                    | PhD student                                                                                     | University of Pavia                                                                                                                 |
| Massacesi   | Luca         | Firenze   | Medicina e Chirurgia           | Neurologia                                   | Professore Ordinario                                                                            | Università degli Studi di Firenze, Dipartimento NEUROFARBA                                                                          |
| Massimini   | Marcello     | Milano    | Medicina e Chirurgia           | Dottorato di Ricerca in Fisiologia Umana     | Professore di fisiologia                                                                        | Dipartimento di Scienze Biomediche e Cliniche L. Sacco - Milano                                                                     |
| MASSON      | RICCARDO     | MILANO    | Medicina e Chirurgia           | Neuropsichiatria Infantile                   | Dirigente Medico                                                                                | IRCCS Ist. Neurologico C. Besta, Milano                                                                                             |
| Mastrangelo | Andrea       | Bologna   | Medicine and surgery           | Neurology                                    | Resident doctor                                                                                 | University of Bologna                                                                                                               |

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|-----------|------------|--------------------|----------------------|----------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| MATARESE  | GIUSEPPE   | NAPOLI             | Medicina e Chirurgia | Patologia Clinica                            | Professore Ordinario di Patologia Generale e Immunologia | Dipartimento di Medicina Molecolare e Biotecnologie Mediche (DMMBM), Università degli Studi di Napoli Federico II           |
| Matteoni  | Enrico     | Turin, Italy,      | Medicine and Surgery | Neurology                                    | Resident                                                 | University of Turin                                                                                                         |
| Mattioli  | Irene      | Brescia            | Medicine and Surgery | Neurology                                    | Neurology resident                                       | University of Brescia                                                                                                       |
| Mauro     | Alessandro | Torino             | Medicina e Chirurgia | Neurologia                                   | Professore Ordinario                                     | Dipartimento di Neuroscienze, Università di Torino                                                                          |
| Mazzacane | Federico   | Pavia              | Medicine and Surgery | Neurology                                    | Neurology resident                                       | University of Pavia                                                                                                         |
| Mazzeo    | Salvatore  | Florence           | Medicine             | Neurology                                    | PhD student                                              | University of Florence                                                                                                      |
| Mazzoleni | Valentina  | Brescia            | Medicine and Surgery | Neurology                                    | Resident                                                 | University of Brescia                                                                                                       |
| Mazzoli   | Marco      | Modena             | Medicine and surgery | Neurology                                    | Neurologist, Neuroscience PhD student                    | University of Modena and Reggio Emilia                                                                                      |
| Mazzucchi | Anna       | Parma              | Medicina e Chirurgia | Neurologia                                   | Neurologo                                                | Studio Elias<br>Neuroriabilitazione - Parma                                                                                 |
| Messina   | Roberta    | Milano             | Medicina e Chirurgia | Neurologia                                   | studente in neuroscienze                                 | IRCCS San Raffaele Scientific Institute - Milano                                                                            |
| Messina   | Sonia      | Messina            | Medicina e Chirurgia | Neurologia                                   | Prf. Ordinario                                           | UOC Neurologia e Malattie Neuromuscolari, Policlinico "G. Martino", Messina                                                 |
| Micalizzi | Elisa      | Modena             | Medical Degree       | Neurology                                    | Neurologist, PhD Student                                 | University of Modena and Reggio Emilia                                                                                      |
| Miceli    | Gabriele   | Trento             | Medicina e Chirurgia | Neurologia e Psichiatria                     | professore ordinario di neurologia                       | Center for Mind/Brain Sciences - University of Trento                                                                       |
| Micera    | Silvestro  | Pisa - Losanna, CH | Ingegneria Elettrica | Dottorato di ricerca in Ingegneria Biomedica | Professore Ordinario                                     | Istituto di Biorobotica<br>Scuola Universitaria Superiore di Pisa<br>"Sant'Anna" - Ecole polytechnique fédérale de Lausanne |
| Micieli   | Giuseppe   | Pavia              | Medicina e Chirurgia | Neurologia                                   | Direttore Dipartimento Neutologia d'Urgenza              | IRCCS Fondazione Istituto Neurologico "C. Mondino" Pavia                                                                    |
| Milella   | Giammarco  | Bari               | Medicina e Chirurgia | Neurologia                                   | MD                                                       | Università degli studi di Bari Aldo Moro                                                                                    |
| Miniussi  | Carlo      | Trento             | Medicina e Chirurgia | Phd Neuroscienze                             | Direttore/ Prof. Ordinario                               | Centre for Medical Sciences - CISMed University of Trento                                                                   |
| Mistri    | Damiano    | Milan              | Psychology           | Neuropsychology                              | PhD Student                                              | Vita-Salute San Raffaele                                                                                                    |
| Moglia    | Cristina   | Torino             | Medicina e Chirurgia | Neurologia                                   | Ricercatore Universitario di Neurologia                  | Università degli Studi di Pavia - Dipt. di Scienze Neurologiche                                                             |
| MOIOLA    | LUCIA      | MILANO             | Medicina e Chirurgia | Neurologia                                   | Dirigente Medico                                         | Ospedale San Raffaele - Milano                                                                                              |
| Monaco    | Salvatore  | Verona             | Medicina e Chirurgia | Neurologia                                   | Neurologia e Neurofisiopatologia                         | Professore ordinario                                                                                                        |
| Monforte  | Mauro      | Roma               | Medicina e Chirurgia | Neurologia                                   | Dirigente Medico                                         | Policlinico Gemelli<br>Università Cattolica del Sacro Cuore di Roma                                                         |
| Mongini   | Tiziana    | Torino             | Medicina e Chirurgia | Neurologia                                   | Prof. Associato                                          | dipartimento di Neuroscienze Rita Levi Montalcini - Torino                                                                  |
| Montanaro | Elisa      | Turin              | Psychology           | Psychotherapy                                | Neuropsychologist                                        | University of Turin                                                                                                         |
| Montano   | Vincenzo   | Pisa               | Medicine and Surgery | Neurology                                    | Freelance                                                | University of Pisa                                                                                                          |
| Montini   | Angelica   | Pesaro             | Medicina             | Neurologia                                   | Medico Specializzando                                    | Alma Mater studiorum di Bologna                                                                                             |
| Morano    | Alessandra | Roma               | Medicina e Chirurgia | Neurologia                                   | Ricercatore a tempo determinato                          | Dipartimento di Neuroscienze Umane La Sapienza Roma                                                                         |
| Motolese  | Francesco  | Rome               | Medicine and Surgery | Neurology                                    | Consultant                                               | Fondazione Policlinico Universitario Campus Bio-Medico di Roma                                                              |
| Mozzetta  | Stefano    | Padua              | Medicine             | Neurology                                    | Neurologist                                              | University of Padua                                                                                                         |
| Muccioli  | Lorenzo    | Bologna            | Medicine and Surgery | Neurology                                    | Doctor                                                   | University of Bologna                                                                                                       |

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|----------------|-------------|----------------|------------------------|------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Musumeci       | Olimpia     | Messina        | Medicina e Chirurgia   | Neurologia                         | Ricercatore universitario                                   | Dipartimento di Medicina Clinica e Sperimentale - Università di Messina                                                                                                                                                                              |
| Nardi Cesarini | Elena       | Fano, PU       | Medicina e Chirurgia   | Neurologia                         | Dirigente Medico                                            | Neurology Clinic - Università di Perugia<br>Ospedale S. Maria della Misericordia                                                                                                                                                                     |
| Nicoletti      | Alessandra  | Catania        | Medicina e Chirurgia   | Neurologia                         | Professore Associato                                        | Università di Catania                                                                                                                                                                                                                                |
| Nicoletti      | Ferdinando  | Roma           | Medicina e Chirurgia   | Allergologia e Immunologia Clinica | Prof. Ordinario                                             | Dipartimento di Scienze Biomediche e Biotecnologiche, Università degli studi di Catania                                                                                                                                                              |
| Nigri          | Anna        | Milan          | Biomedical Engennering | Biomedical Engennering             | Researcher                                                  | Istituto Besta, Milano                                                                                                                                                                                                                               |
| Nistri         | Riccardo    | Florence       | Medicine               | Neurology                          | research fellow                                             | University of Florence                                                                                                                                                                                                                               |
| Nobile-Orazio  | Eduardo     | Milano         | Medicina e Chirurgia   | Neurologia                         | Prof. Ordinario                                             | Dipartimento di Biotecnologie Mediche e Medicina Traslazionale - Università di Milano                                                                                                                                                                |
| Nolano         | Maria       | Napoli         | Medicina e Chirurgia   | Neurologia                         | Prof. Associato                                             | Dipartimento di Neuroscienze, Scienze della Riproduzione e Odontostomatologiche, Università Federico II                                                                                                                                              |
| Novellino      | Fabiana     | Catanzaro      | MD                     | Neurology                          | Researcher                                                  | Department of Pharmacology and Toxicology, School of Medicine, Universidad Complutense de Madrid (UCM), Av. Complutense s/n, 28040. Centro de InvestigaciÃ³n Biomédica en Red de Salud Mental (CI-BERSAM). Instituto de InvestigaciÃ³n NeuroquÃ©mica |
| Obici          | Laura Piera | Pavia          | Medicine and Sugery    | Internal Medicine                  | Consultant                                                  | University of Pavia                                                                                                                                                                                                                                  |
| Oliver         | Davide      | UK             | Medicina e Chirurgia   | Palliative Medicine                | Honorary Professor                                          | University of Kent                                                                                                                                                                                                                                   |
| Onofrj         | Marco       | Chieti         | Medicina e Chirurgia   | Neurologia                         | Professore ordinario di neurologia                          | Università degli Studi di Chieti                                                                                                                                                                                                                     |
| OREJA-GUEVARA  | CELIA       | MADRID, E      | Medicina e Chirurgia   | Neurologia                         | Dirigente Medico                                            | Hospital Universitario Clinico San Carlos de Madrid                                                                                                                                                                                                  |
| Ornello        | Raffaele    | L'Aquila       | Medicina e Chirurgia   | Neurologia                         | Ricercatore a tempo determinato di tipo B                   | Neuroscience Section, Department of Applied Clinical Sciences and Biotechnolgy - University of L'Aquila                                                                                                                                              |
| Orologio       | Ilaria      | Naples         | Medical degree         | Neurology                          | Resident                                                    | University of Campania Luigi Vanvitelli                                                                                                                                                                                                              |
| Pace           | Andrea      | Roma           | Medicina e Chirurgia   | Neurologia                         | Ref. Unità Neurooncologia                                   | IRCCS REGINA ELENA CANCER INSTITUTE - Roma                                                                                                                                                                                                           |
| Padovani       | Alessandro  | Brescia        | Medicina e Chirurgia   | Neurologia                         | Prof. Ordinario                                             | Università degli Studi di Brescia                                                                                                                                                                                                                    |
| Pagano         | Andrea      | Rome           | Medicine               | Neurology                          | Neurologist                                                 | Tor Vergata University of Rome                                                                                                                                                                                                                       |
| PAGANONI       | SABRINA     | HARWARD, USA   | Medicina e Chirurgia   | Neurologia                         | Associate Professor of Physical Medicine and Rehabilitation | Harvard Medical School                                                                                                                                                                                                                               |
| Palacino       | Federica    | Trieste, Italy | Medicine and Surgery   | NEUROLOGY                          | Resident                                                    | University of Trieste                                                                                                                                                                                                                                |
| Palandri       | Giorgio     | Bologna        | Medicina e Chirurgia   | Neurologia                         | Dirigente Medico                                            | IRCCS Istituto di Scienze Neurologiche di Bologna - Ospedale Bellaria                                                                                                                                                                                |

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|------------------|--------------|------------------------|----------------------|----------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Palumbo          | Pasquale     | Prato                  | Medicina e Chirurgia | Neurologia           | Dirigente Medico                                           | Area malattie cerebro-vascolari e degenerative - Dipartimento Specialistiche Mediche AUSL Toscana Centro Direttore U.O. Neurologia, Neurofisiopatologia e Stroke Unit - Ospedale S. Stefano di Prato |
| Pantoni          | Leonardo     | Milano                 | Medicina e Chirurgia | Neurologia           | professore ordinario di neurologia                         | Luigi Sacco' Department of Biomedical and Clinical Sciences - Università di Milano                                                                                                                   |
| Paolicelli       | Damiano      | Bari                   | Medicine             | Neurology            | Professor                                                  | University of Bari Aldo Moro                                                                                                                                                                         |
| Paolini Paoletti | Federico     | Perugia                | Medicine             | Neurology            | PhD student                                                | University of Perugia                                                                                                                                                                                |
| Paolucci         | Stefano      | Roma                   | Medicina e Chirurgia | Neurologia           | Dirigente Unità Operativa Complessa                        | Fondazione S. Lucia – IRCCS                                                                                                                                                                          |
| Papagno          | Costanza     | Milano - Rovereto (TN) | Medicina e Chirurgia | Neurologia           | professore ordinario di neurologia                         | Dip. Di psicologia Univ. Degli studi di Milano Bicocca                                                                                                                                               |
| Paparella        | Giulia       | Italy                  | Medicine             | Neurology            | Post-Doc Research Fellow                                   | Pozzilli, IS                                                                                                                                                                                         |
| Parati           | Gianfranco   | Milano                 | Medicina e Chirurgia | Cardiologia          | Direttore dipartimento Cardiologia - Direttore Scientifico | IRCCS Auxologico                                                                                                                                                                                     |
| Pareyson         | Davide       | Milano                 | Medicina e Chirurgia | Neurologia           | Dirigente Medico                                           | Fondazione IRCCS Istituto Neurologico Carlo Besta                                                                                                                                                    |
| Parrino          | Liborio      | Parma                  | Medicina e Chirurgia | Neurologia           | Prf.Ordinario                                              | Centro di Medicina del Sonno - Clinica Neurologica - Università di Parma                                                                                                                             |
| Passaretti       | Massimiliano | Rome                   | Medicine and Surgery | Neurology            | Resident                                                   | Sapienza University of Rome                                                                                                                                                                          |
| Patti            | Francesco    | Catania                | Medicina e Chirurgia | Neurologia/Fisiatria | Professore associato in neurologia                         | Policlinico “G Rodolico” dell’Azienda Ospedaliero-Universitaria Policlinico-Vittorio Emanuele dell’Università di Catania                                                                             |
| PAULETTO         | GIADA        | UDINE                  | Medicina e Chirurgia | Neurologia           | Dirigente Medico                                           | SOC Neurologia Dipartimento di Neuroscienze Azienda Sanitaria Universitaria del Friuli Centrale, Udine                                                                                               |
| Pellecchia       | Maria Teresa | Salerno                | Medicina e Chirurgia | Neurologia           | Professore associato                                       | Università degli Studi di Salerno                                                                                                                                                                    |
| Pellerino        | Alessia      | Torino                 | Bachelor in Medicine | Neurology            | Neurologist - Neuro-oncologist                             | University and City of Health and Science Hospital                                                                                                                                                   |
| Pelliccioni      | Giuseppe     | Ancona                 | Medicina e Chirurgia | Neurologia           | Direttore UOC Neurologia                                   | INRCA – IRCCS OSPEDALE GERIATRICO                                                                                                                                                                    |
| Pellitteri       | Gaia         | Udine                  | Medicine             | Neurology            | MD                                                         | University of Udine                                                                                                                                                                                  |
| Pepys            | Jack         | Milan                  | Medical student      | Medical student      | Medical student                                            | Humanitas University                                                                                                                                                                                 |
| PERINI           | PAOLA        | PADOVA                 | Medicina e Chirurgia | Neurologia           | Dirigente Medico                                           | Clinica neurologica azienda ospedaliera Padova                                                                                                                                                       |
| Perrone          | Benedetta    | Arcavata di Rende      | Neurobiology         | no                   | Resident                                                   | Unversity of Calabria                                                                                                                                                                                |
| Pezzini          | Debora       | Brescia                | Medicine and Surgery | Neurology            | Resident                                                   | University of Brescia                                                                                                                                                                                |
| Pieri            | Valentina    | Milan                  | Medicine and Surgery | Neurology            | Resident                                                   | San Raffaele University Scuola di Medicina e                                                                                                                                                         |
| Pignataro        | Giuseppe     | Napoli                 | Medicina e Chirurgia | -                    | Professore Associato in Farmacologia                       | Chirurgia Università di Napoli “Federico II”                                                                                                                                                         |
| pilotto          | andrea       | Brescia                | Medicine             | Neurology            | Assistant professor                                        | University of Brescia                                                                                                                                                                                |
| Pini             | Lorenzo      | Padova                 | Neuroscience         | Na                   | Postdoc Fellow                                             | University of Padova                                                                                                                                                                                 |
| Pirro            | Fiammetta    | Milan                  | MD                   | Neurology            | Neurologist                                                | -                                                                                                                                                                                                    |

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|----------------|-------------------|------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pisani         | Antonio           | Pavia            | Medicina e Chirurgia                          | Neurologia                                                                                         | Prof. Ordinario                                                                 | IRCCS Fondazione Casimiro Mondino                                                                                                                           |
| Pisciotta      | Chiara            | Milano           | Medicina e Chirurgia                          | Neurologia                                                                                         | Dirigente Medico                                                                | Istituto Neurologico "Carlo Besta",                                                                                                                         |
| Plantone       | Domenico          | Siena            | Medicine                                      | Neurologu                                                                                          | Senior Researcher                                                               | University of Siena                                                                                                                                         |
| Plazzi         | Giuseppe          | Bologna          | Medicina e chirurgia                          | Neurologia                                                                                         | Professore Associato                                                            | Responsabile dei Laboratori per lo Studio e la Cura dei Disturbi del Sonno del Dipartimento di Scienze Biomediche e Neuromotorie dell'Università di Bologna |
| Poggesi        | Anna              | Firenze          | Medicina e chirurgia                          | Neurologia                                                                                         | Ricercatore RTDb                                                                | Università degli studi di Firenze                                                                                                                           |
| Poletti        | Barbara           | Milano           | Psicologia                                    | PhD in Fisiologia e Fisiopatologia dell'Invecchiamento, Scuola di Specializzazione in Psicoterapia | Neuropsicologa, Coordinatrice Servizio di Neuropsicologia e Psicologia Clinica. | Istituto Auxologico Italiano IRCCS Ospedale San Luca                                                                                                        |
| Portaccio      | Emilio            | Florence         | Medicine                                      | Neurology                                                                                          | Researcher                                                                      | University of Florence                                                                                                                                      |
| Pozzi          | Federico Emanuele | Monza            | Medicine and Surgery                          | Neurology                                                                                          | Resident                                                                        | University of Milano-Bicocca                                                                                                                                |
| Pozzilli       | Carlo             | Roma             | Medicina e Chirurgia                          | Neurologia                                                                                         | professore ordinario di neurologia                                              | Az.Osp.S.Andrea - Roma                                                                                                                                      |
| Prada          | Francesco         | Milano           | Medicina e Chirurgia                          | Neurochirurgia                                                                                     | Medico                                                                          | Dipartimento di Neurochirurgia - Fondazione IRCCS Istituto Neurologico C.Besta                                                                              |
| Pradotto       | Luca Guglielmo    | Turin            | Medical Degree                                | Neurology                                                                                          | Researcher                                                                      | University of Turin                                                                                                                                         |
| Previtali      | Stefano           | Milano           | Medicina e Chirurgia                          | Neurologia                                                                                         | Responsabile dell’Unità di Ricerca Rigenerazione Neuromuscolare                 | Neurologia - Ospedale San Raffaele                                                                                                                          |
| Preziosa       | Paolo             | Milan            | Medicine and Surgery                          | Neurology                                                                                          | Researcher                                                                      | Vita-Salute San Raffaele University                                                                                                                         |
| Priori         | Alberto           | Milano           | Medicina e Chirurgia                          | Neurologia                                                                                         | Professore ordinario in Neurologia                                              | Università degli Studi di Milano DIPARTIMENTO DI SCIENZE DELLA SALUTE                                                                                       |
| Proserpio      | Paola             | Milan            | Medicine and Surgery                          | Neurology                                                                                          | Neurologist                                                                     | Bicocca University                                                                                                                                          |
| Protti         | Alessandra        | Milano           | Medicina e Chirurgia                          | Neurologia                                                                                         | Neurologo                                                                       | Ospedale Niguarda Milano                                                                                                                                    |
| Provinciali    | Leandro           | Ancona           | Medicina e Chirurgia                          | Neurologia                                                                                         | Professore Ordinario di Neurologia                                              | Clinica di Neurologia degli Ospedali Riuniti di Ancona                                                                                                      |
| Pucci          | Eugenio           | Fermo            | Medicina e Chirurgia                          | Neurologia                                                                                         | Dirigente Medico I Livello                                                      | UO Neurologia ASUR Marche Area Vasta 3 - Macerata                                                                                                           |
| Pugliatti      | Maura             | Ferrara          | Medicina e Chirurgia                          | Neurologia                                                                                         | Professore Associato                                                            | Università degli Studi di Ferrara - Dipartimento di Scienze Biomediche e Chirurgico-Specialistiche                                                          |
| Puthenparampil | Marco             | Padova           | Medicina e Chirurgia                          | Neurologia                                                                                         | Research Fellow                                                                 | University of Padua                                                                                                                                         |
| Quatrale       | Rocco             | Venezia - Mestre | Medicina e Chirurgia                          | Neurologia/Neurofisiologia clinica                                                                 | Direttore UOC di Neurologia                                                     | AULSS 3 Serenissima Ospedale dell'Angelo - Venezia Mestre                                                                                                   |
| Quattrone      | Andrea            | Catanzaro        | Degree in Medicine and Surgery                | Neurology                                                                                          | Neurologist                                                                     | University Magna Graecia                                                                                                                                    |
| Quintarelli    | Stefano           | Roma             | Laurea Magistrale in Scienze della Formazione | -                                                                                                  | Responsabile del programma per l’Agenda Digitale per l'Italia                   | In forza alla Presidenza del Consiglio dei Ministri in qualità di Presidente del Comitato di indirizzo della Agenzia per l'Italia Digitale                  |
| Rainero        | Innocenzo         | Torino           | Medicina e Chirurgia                          | Neurologia                                                                                         | neurologo                                                                       | Department of Neuroscience - Università di Torino                                                                                                           |
| RAVOT          | ELISABETTA        | MILANO           | Medicina e Chirurgia                          | Neurologia                                                                                         | Dirigente Medico                                                                | Global Head of Science at Healthware Group - Milano                                                                                                         |

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|--------------|---------------|-----------------------|------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Regna-Gladin | Caroline      | Milan                 | Medicine                           | Neuroradiology               | Medical Doctor Staff Specialist                                                                              | Niguarda Hospital                                                              |
| Remoli       | Giulia        | Milan                 | Medicine and Surgery               | Neurology                    | Resident in Neurology                                                                                        | University of Milan Bicocca                                                    |
| Remuzzi      | Giuseppe      | Milano                | Medicina e Chirurgia               | Nefrologia Medica            | Dirigente Medico                                                                                             | Istituto di Ricerche Farmacologiche Mario Negri                                |
| Rezza        | Giovanni      | Roma                  | Medicina e Chirurgia               | Malattie Infettive           | Direttore Dipartimento Malattie Infettive                                                                    | ISTITUTO SUPERIORE DI SANITA’ ROMA                                             |
| Ricci        | Giulia        | Pisa                  | Medicina e Chirurgia               | Neurologia                   | neurologo                                                                                                    | Department of Clinical and Experimental Medicine - University of Pisa          |
| Ricci        | Stefano       | Città di Castello, PG | Medicina e Chirurgia               | Neurologia                   | Primario UO Neurologia                                                                                       | USL Umbria 1 - Perugia                                                         |
| Ripellino    | Paolo         | Lugano                | Medicine                           | Neurology                    | Neurologist                                                                                                  | University of Southern Switzerland                                             |
| Risi         | Barbara       | Brescia               | Medicine and Surgery               | Neurology                    | Resident in Neurology                                                                                        | University of Brescia                                                          |
| Riva         | Nilo          | Milano                | Medicina e Chirurgia               | Neurologia                   | Ricercatore                                                                                                  | OSPDAL SAN RAFFAELE                                                            |
| Rizzo        | Federica      | Barcelona             | Medicine Degree                    | Neurology                    | Clinical Investigator                                                                                        | Vall d'Hebron Research Institute                                               |
| Rizzo        | Pier Andrea   | Rome                  | Degree in Medicine and Surgery     | Neurology                    | Resident                                                                                                     | Catholic University of the Sacred Heart                                        |
| Rocca        | Maria Assunta | Milano                | Medicina e Chirurgia               | Neurologia                   | Ricercatrice in neuroscienze                                                                                 | Ospedale San Raffaele Milano                                                   |
| Rocchi       | Lorenzo       | Cagliari              | Medicina e Chirurgia               | Neurologia                   | Ricercatore a tempo determinato                                                                              | Università degli Studi di Cagliari                                             |
| Rodolico     | Carmelo       | Messina               | Medicina e Chirurgia               | Neurologia                   | Prof. Ordinario                                                                                              | Azienda Ospedaliera Universitaria "G.Martino"- Città di Messina                |
| Romagnolo    | Alberto       | Turin                 | Medicine and Surgery               | Neurology                    | MD                                                                                                           | University of Turin                                                            |
| Romano       | Marcello      | Palermo               | Medicina e Chirurgia               | Neurologia                   | Dirigente Medico                                                                                             | AOOR Villa Sofia Cervello - Palermo                                            |
| Romanò       | Francesco     | Milan                 | Master of Science in Physiotherapy | NA                           | Physiotherapist                                                                                              | Vita-Salute San Raffaele University                                            |
| Romigi       | Andrea        | Pozzilli              | Medicine Degree                    | Neurology                    | Chief Sleep Medicine Center                                                                                  | IRCCS Neuromed                                                                 |
| Romoli       | Michele       | Cesena                | Medicine                           | Neurology                    | Consultant                                                                                                   | Bufalini Hospital                                                              |
| Ronchi       | Dario         | Milan                 | Biotechnologies                    | PhD                          | Associate Professor                                                                                          | University of Milan                                                            |
| Rosanova     | Mario         | Milano                | Medicina e Chirurgia               | Dottorato in Neurofisiologia | Professore Associato                                                                                         | Dipartimento di Scienze Biomediche e Cliniche Università degli studi di Milano |
| ROSATI       | ELEONORA      | FIRENZE               | Medicina e Chirurgia               | Neurologia                   | Dirigente Medico                                                                                             | AOU Careggi, Firenze                                                           |
| Rossi        | Alessandro    | Siena                 | Medicina e Chirurgia               | Neurologia                   | Prof. Ordinario                                                                                              | Università degli Studi di Siena                                                |
| Rossi        | Jessica       | Modena                | Medicine and Surgery               | Neurology                    | PhD student                                                                                                  | Universitàf di Modena e Reggio Emilia                                          |
| Rossi        | Salvatore     | Rome                  | Medicine and Surgery               | Neurology                    | MD, PhD candidate                                                                                            | Universitàf Cattolica del Sacro Cuore                                          |
| Rudà         | Roberta       | Treviso               | Medicina e Chirurgia               | Neurologia                   | Direttore UOC Neurologia Ospedale San Giacomo Castelfranco Veneto e Coordinatore GOM Neuro-oncologia Treviso | AOU Città della Salute e della Scienza -Torino                                 |
| Ruggieri     | Serena        | Rome                  | Medicine and Surgery               | Neurology                    | Assistant Professor                                                                                          | Sapienza University of Rome                                                    |
| Russo        | Antonio       | Napoli                | Medicina e Chirurgia               | Neurologia                   | Dottorando di Ricerca in Neuroscienze                                                                        | Centro Cefalee Napoli - I Clinica Neurologica SUN, Napoli                      |
| RUSSO        | EMILIO        | CATANZARO             | Medicina e Chirurgia               | Farmacologia                 | Professore Aggregato di Farmacologia                                                                         | Scuola di Medicina e Chirurgia dell’Università Magna Graecia di Catanzaro      |
| Russo        | Mirella       | Chieti                | Medicine and Surgery               | Neurology                    | Ph.D. student                                                                                                | "G. d'Annunzio University" of Chieti-Pescara                                   |
| SACCA'       | FRANCESCO     | NAPOLI                | Medicina e Chirurgia               | Neurologia                   | Dirigente Medico                                                                                             | Università degli Studi di Napoli Federico II                                   |
| Sacco        | Simona        | L'Aquila              | Medicina e Chirurgia               | Neurologia                   | Professore Ordinario di Neurologia                                                                           | Università degli Studi dell’Aquila                                             |

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|---------------|-----------------|---------------|------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------|
| Salmaggi      | Andrea          | Milan         | Medicine                                                   | Neurology                                   | Head, Neurology Unit                                     | Milan                                                                               |
| Salsone       | Maria           | Milan         | Medicine and Surgery                                       | Neurology                                   | Researcher                                               | National Research Council                                                           |
| Salvalaggio   | Alessandro      | Padova        | Medicine and Surgery                                       | Neurology                                   | Assitasnt Professor                                      | Universit  degli Studi di Padova                                                    |
| Salvetti      | Marco           | Roma          | Medicina e Chirurgia                                       | Neurologia                                  | dirigente medico                                         | Universit  degli Studi di Roma La Sapienza                                          |
| Sanginario    | Pasquale        | Rome          | Medicine and Surgery                                       | Neurology Resident                          | Neurology Resident                                       | Department of Neurosciences, Universit  Cattolica del Sacro Cuore, Rome, Italy.     |
|               |                 |               |                                                            |                                             |                                                          |                                                                                     |
| Sansone       | Valeria         | Milano        | Medicina e Chirurgia                                       | Neurologia                                  | Direttore Clinico del Centro NEMO                        | AO Niguarda                                                                         |
| Santorelli    | Filippo         | Pisa          | Medicina e Chirurgia                                       | Neurologia                                  | Direttore UOC                                            | IRCCS fondazione Stella Maris Pisa                                                  |
| Santoro       | Lucio           | Napoli        | Medicina e Chirurgia                                       | Neurologia e Neurofisiopatologia            | Professore ordinario                                     | Universit  Federico II Napoli                                                       |
| Saraceno      | Adriana         | Catanzaro     | Medicine and Surgery                                       | Neurology                                   | Resident                                                 | University "Magna Graecia" of Catanzaro                                             |
| Sarasso       | Elisabetta      | Milan         | Bachelor degree in Physiotherapy                           | Master of Science in Rehabilitation Science | research fellow                                          | Vita-Salute San Raffaele University                                                 |
| Sarubbo       | Silvio          | Trento        | Medicina e Chirurgia                                       |                                             | Direttore UOC di Neurochirurgia                          | Ospedale "S. Chiara" Azienda Provinciale per i Servizi Sanitari di Trento           |
|               |                 |               |                                                            | Neurochirurgia                              |                                                          |                                                                                     |
| Satolli       | Sara            | Napoli        | Medicine and Surgery                                       | Neurology                                   | Resident                                                 | University of Campania "Luigi Vanvitelli"                                           |
| Scala         | Irene           | Rome          | Medicine & Surgery                                         | Neurology                                   | Medical Resident                                         | Catholic University of the Sacred Heart                                             |
| Schenone      | Angelo          | Genova        | Medicina e Chirurgia                                       | Neurologia                                  | Professore Ordinario di Neurologia                       | Clinica Neurologica dell'Universit  Di Genova                                       |
| schenone      | cristina        | Genova        | degree in medicine                                         | Physical Medicine and Rehabilitation        | Resident                                                 | University of Genova                                                                |
| Schiavi       | Gian Marco      | Verona        | Medical Degree                                             | Neurology                                   | Registrar                                                | University of Verona                                                                |
| Schilke       | Edoardo Dalmato | Monza (MB)    | Medicine and Surgery                                       | Neurology                                   | Resident                                                 | University of Milano-Bicocca                                                        |
| Schirinzi     | Tommaso         | Roma, Pavia   | Medicina e Chirurgia                                       | Neurologia                                  | Ricercatore Tempo determinato A                          | Neurology - Department of Systems Medicine - University of Roma Tor Vergata Roma    |
| Schwarz       | Ghil            | Milan         | Medicine                                                   | Neurology                                   | Neurologist                                              | UCL                                                                                 |
| Scopelliti    | Giuseppe        | Lille         | Medicine                                                   | Neurology                                   | Medical doctor                                           | Lille University                                                                    |
| Scuderi       | Carmela         | Troina, Italy | medicine and surgery                                       | Neurology and Medical genetics              | Neurologist                                              | University of Catania                                                               |
| Sebastianelli | Gabriele        | Rome          | Medical doctor                                             | Neurology                                   | Resident                                                 | Sapienza, University of Rome                                                        |
| Sechi         | Elia            | Sassari       | Medicina e Chirurgia                                       | Neurologia                                  | Dirigente Medico specialista in Neurologia               | Dipartimento di Scienze Mediche, Chirurgiche e Sperimentali - Universit  di Sassari |
| Senerchia     | Gianmaria       | Naples        | Medicine and Surgery                                       | Neurology                                   | Medical Doctor                                           | University of Naples "Federico II"                                                  |
| Serra         | Laura           | Rome          | Psychology                                                 | Psychoterapists                             | Researcher                                               | Santa Lucia Foundation, IRCCS                                                       |
| Servidei      | Serenella       | Roma          | Medicina e Chirurgia                                       | Neurologia                                  | Professore associato , Direttore UOC Neurofisiopatologia | Universit  Cattolica e Fondazione Policlinico Universitario A.Gemelli IRCCS         |
| Siciliano     | Gabriele        | Pisa          | Medicina e Chirurgia                                       | Neurologia                                  | Professore Ordinario                                     | Dipartimento di Medicina Clinica e Sperimentale Universit  di Pisa                  |
| Siciliano     | Libera          | Rome          | n Cognitive Neurosciences and Psychological Rehabilitation | Ph.D Behavioral Neuroscience                | Research Fellow                                          | Sapienza University of Rome                                                         |
| Siciliano     | Mattia          | Naples        | Psychology                                                 | Psychoterapist                              | Postdoctoral Research Worker                             | University of Campania "Luigi Vanvitelli"                                           |
| Silani        | Vincenzo        | Milano        | Medicina e Chirurgia                                       | Neurologia                                  | Professore ordinario                                     | Universit  degli Studi di Milano                                                    |
| Silvani       | Antonio         | Milano        | Medicina e Chirurgia                                       | Neurologia                                  | Direttore UOC                                            | Dipt. Di Neuroncologia Fondazione IRCCS Istituto Neurologico Carlo Besta Milano     |

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|--------------|----------------|----------------------|----------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Silvestrini  | Mauro          | Ancona               | Medicina e Chirurgia | Neurologia                                                          | Prof. Ordinario                                     | Università Politecnica delle Marche-<br>Dipartimento di Medicina Sperimentale e Clinica Ancona                |
| Silvestro    | Marcello       | Naples               | Medicine and surgery | Neurology                                                           | Fellow                                              | University of Campania Luigi Vanvitelli                                                                       |
| Simone       | Isabella Laura | Bari                 | Medicina e chirurgia | Neurologia                                                          | Professore Neurologia                               | Department of Basic Medical Sciences, Neurosciences and Sense Organs University of Bari                       |
| Smania       | Nicola         | Verona               | Medicina e chirurgia | Fisioterapia                                                        | Professore Ordinario                                | Dipartimento di Neuroscienze, Biomedicina e Movimento, Università di Verona                                   |
| Smolik       | Krzysztof      | Modena               | Medicine and Surgery | Neurology                                                           | Resident                                            | University of Modena and Reggio Emilia                                                                        |
| Soddu        | Andrea         | Western Ontario, CAN | Medicina e chirurgia | Neurologia                                                          | Professore Associato                                | Physics and Astronomy Western Science - Canada                                                                |
| Soffietti    | Riccardo       | Torino               | Medicina e Chirurgia | Neurologia                                                          | Prof. di Neurologia e Direttore UOC Neuro-oncologia | Università e AOU della Salute e Scienza di Torino                                                             |
| Solari       | Alessandra     | Milano               | Medicina e Chirurgia | Neurologia                                                          | Responsabile servizio Neuroepidemiologia            | Fondazione IRCCS Istituto neurologico C Besta - Milano                                                        |
| Sorbi        | Sandro         | Firenze              | Medicina e Chirurgia | Neurologia                                                          | Professore Ordinario                                | Università degli Studi di Firenze                                                                             |
| Sorrentino   | Giuseppe       | Napoli               | Medicina e Chirurgia | Neurologia                                                          | Prof. Ordinario                                     | Università degli Studi di Napoli "Parthenope"                                                                 |
| Spinelli     | Edoardo Gioele | Milan                | Medicina e Chirurgia | Neurologia                                                          | Post-Doctoral Researcher                            | Vita-Salute San Raffaele University                                                                           |
| Stanziano    | Mario          | Milano               | Medicine and Surgery | Radiology                                                           | MD, researcher                                      | University of Milan                                                                                           |
| STEFANELLI   | SILVIA         | ROMA                 | Giurisprudenza       | Privacy Officer e Consulente della Privacy                          | avvocato cassazionista                              | Studio Legale Stefanelli&Stefanelli                                                                           |
| Stefani      | Alessandro     | Roma                 | medicina e chirurgia | neurologia                                                          | dirigente medico 1° livello                         | Neurologia Dip Medicina dei Sistemi                                                                           |
| Stefini      | Roberto        | Legnano, MI          | Medicina e Chirurgia | Neurochirurgia                                                      | DIRETTORE U.O.C. NEUROCHIRURGIA                     | ASST Ovest Milanese – Ospedale Civile di Legnano                                                              |
| Stocchi      | Fabrizio       | Roma                 | Medicina e Chirurgia | Neurologia                                                          | Dirigente medico                                    | Università San Raffaele, Roma                                                                                 |
| Storelli     | Loredana       | Milano               | Medicina e Chirurgia | Ingegneria clinica                                                  | Ricercatore                                         | IRCCS San Raffaele Scientific Institute Milano                                                                |
| Taglialatela | Maurizio       | Napoli               | Medicina e chirurgia | Dottorato di Ricerca in Biologia e Patologia Cellulare e Molecolare | Professore Ordinario                                | Dipartimento di Neuroscienze e Scienze Riproduttive ed Odontostomatologiche, Università di Napoli Federico II |
| Tagliavini   | Fabrizio       | Milano               | Medicina e Chirurgia | Neurologia e Neuropatologia                                         | Direttore Scientifico                               | Fondazione IRCCS Istituto Neurologico "C.Besta" - Milano                                                      |
| Tappatà      | Maria          | Bologna              | Medicina e Chirurgia | Neurologia                                                          | Dirigente Medico                                    | IRCCS Istituto delle Scienze Neurologiche di Bologna Ospedale Bellaria                                        |
| Tartaglia    | Matteo         | Rome                 | Medicine and Surgery | Neurology                                                           | PhD Student                                         | "Sapienza" University of Rome                                                                                 |
| Taruffi      | Lisa           | Bologna              | Medicine and Surgery | Neurology                                                           | Visiting doctor                                     | University of Bologna                                                                                         |
| Tasca        | Giorgio        | Roma                 | Medicina e Chirurgia | Neurologia                                                          | Dirigente Medico                                    | Fondazione Policlinico Universitario A. Gemelli IRCCS Roma                                                    |
| Tassi        | Rossana        | Siena                | Medicina e Chirurgia | Neurologia                                                          | Dirigente Medico                                    | UOC Stroke Unit - Azienda Ospedaliera Senese                                                                  |
| Tassorelli   | Cristina       | Pavia                | Medicina e Chirurgia | Neurologia                                                          | Prof. Ordinario                                     | Università degli Studi di Pavia, Dipartimento di Scienze Neurologiche e del Comportamento                     |
| Tazza        | Francesco      | Genova               | Medicine degree      | Neurology                                                           | Residency                                           | University of Genova                                                                                          |
| Tedeschi     | Gioacchino     | Napoli               | Medicina e Chirurgia | Neurologia                                                          | Prof. Ordinario                                     | Il Clinica Neurologica II Univ. Di Napoli                                                                     |

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|--------------|---------------|----------|----------------------|---------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Telesca      | Alessandra    | Milano   | Psychology           | -                         | Psychologist and PhD student                                             | University of Milano-Bicocca                                                                                                                |
| Terravecchia | Claudio       | Catania  | Medicine and Surgery | Neurology                 | Resident in Neurology                                                    | University of Catania                                                                                                                       |
| Terzaghi     | Michele       | Pavia    | Medicina e Chirurgia | Neurofisiopatologia       | Dirigente medico                                                         | UO Medicina del Sonno ed Epilessia - IRCCS Fondazione Istituto Neurologico C. Mondino, Pavia                                                |
| Tessitore    | Alessandro    | Napoli   | Medicina e Chirurgia | Neurologia                | Prof. Ordinario                                                          | Il Università di Napoli Federico II                                                                                                         |
| Ticozzi      | Nicola        | Milano   | Medicina e Chirurgia | Neurologia                | Prof. Associato                                                          | Istituto Auxologico Italiano, IRCCS Milano                                                                                                  |
| Tinazzi      | Michele       | Verona   | Medicina e Chirurgia | Neurologia                | Prof. Ordinario                                                          | Scienze Neurologiche, Neuropsicologiche, Morfologiche e Motorie Università degli Studi di Verona                                            |
| Todisco      | Massimiliano  | Pavia    | Medicina e Chirurgia | Neurologia                | Medico Neurologo                                                         | IRCCS Fondazione Mondino                                                                                                                    |
| Tombini      | Mario         | Rome     | Medicine and Surgery | Neurology                 | Associate Professor                                                      | Campus Bio-Medico University                                                                                                                |
| Tondo        | Giacomo       | Vercelli | Medicine and Surgery | Neurology                 | Neurologist                                                              | University of Piemonte Orientale                                                                                                            |
| Toni         | Danilo        | Roma     | Medicina e Chirurgia | Neurologia                | Professore Associato                                                     | Unità di Trattamento Neurovascolare Policlinico Umberto I Roma                                                                              |
| Torelli      | Paola         | Parma    | Medicina e Chirurgia | Neurologia                | Professore Associato                                                     | Headache Centre Department of Medicine and Surgery University of Parma                                                                      |
| Torrigiani   | Edoardo Guido | Perugia  | Medicine and Surgery | Neurology                 | Resident in Neurology                                                    | Perugia                                                                                                                                     |
| Tortorella   | Carla         | Roma     | Medicina e Chirurgia | Neurologia                | Responsabile UOSD Malattie degenerative del Sistema Nervoso              | Ospedale San Camillo Forlanini Roma                                                                                                         |
| Toscano      | Antonio       | Messina  | Medicina e Chirurgia | Neurologia                | Professore Ordinario di Neurologia                                       | UOC di Neurologia e Malattie Neuromuscolare AOu "G. Martino" Messina                                                                        |
| Tozzi        | Valeria       | Milano   | Economia Aziendale   | Organizzazione del Lavoro | Professore Associato                                                     | Government, Health & Not for Profit Division SDA Bocconi School of Management Bocconi University                                            |
| Trojano      | Maria         | Bari     | Medicina e Chirurgia | Neurologia                | Professore Ordinario di neurologia                                       | Policlinico di Bari                                                                                                                         |
| Truini       | Andrea        | Roma     | Medicina e Chirurgia | Neurologia                | Docente Ricercatore                                                      | Università Sapienza di Roma, Dipartimento di Neurologia e Psichiatria                                                                       |
| Uccelli      | Antonio       | Genova   | Medicina e Chirurgia | Neurologia                | Professore Ordinario                                                     | Università degli studi di Genova - Dipartimento di Neuroscienze,Riabilitazio ne,Oftomologia, Genetica e Scienze Materno Infantili (DINOGLI) |
| Uncini       | Antonino      | Chieti   | Medicina e Chirurgia | Neurologia                | Professore Ordinario                                                     | Dipartimento di Neuroscienze, Imaging e Scienze Cliniche, Università " G.D'Annunzio" , Chieti-Pescara                                       |
| Vabanesi     | Marco         | Milan    | Medicine             | Neurology                 | Neurologist                                                              | Vita-Salute San Raffaele University                                                                                                         |
| Vaghi        | Gloria        | Pavia    | Medicine             | Neurology                 | Resident                                                                 | University of Pavia                                                                                                                         |
| Valente      | Enza Maria    | Pavia    | Medicina e Chirurgia | Neurologia                | Prof. Ordinario di Genetica Medica - Dipartimento di Medicina Molecolare | Università degli Studi di Pavia                                                                                                             |
| Valeriani    | Massimiliano  | Roma     | Medicina e Chirurgia | Neurologia                | Responsabile UOS                                                         | Dipartimento di Neuroscienze e Neuroriabilitazione Ospedale Pediatrico Bambino Gesù di Roma                                                 |

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|------------|----------|--------------------------------|----------------------|------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| VARONE     | ANTONIO  | NAPOLI                         | Medicina e Chirurgia | Neurologia       | Dirigente Medico                    | UOC Neurologia Osp. Santobono Pausilipon, Napoli                                                                         |
| Vasta      | Rosario  | Turin                          | MD                   | Neurology        | PhD student                         | University of Turin                                                                                                      |
| Veleno     | Luigi    | Chieti (CH)                    | Medical student      | Medical student  | Medical student                     | Department of Neuroscience, imaging and clinical sciences. D'Annunzio University of Chieti-Pescara                       |
| Verde      | Federico | Milan                          | Medicine and Surgery | Neurology        | Neurologist and researcher          | Università degli Studi di Milano                                                                                         |
| Vernieri   | Fabrizio | ROMA                           | medical degree       | Neurology        | Head of Unit                        | Campus Bio-Medico University of Rome                                                                                     |
| Veronese   | Simone   | Torino                         | Medicina e Chirurgia | Cure palliative  | Medico Responsabile Ricerche        | Fondazione FARO Torino                                                                                                   |
| Vidale     | Simone   | Rimini                         | Medicina e Chirurgia | neurologia       | dirigente medico                    | Unità Operativa di Neurologia di Rimini                                                                                  |
| Vita       | Antonio  | Brescia                        | Medicina e Chirurgia | Psichiatria      | Prof. Ordinario                     | ASST DEGLI SPEDALI CIVILI DI BRESCIA                                                                                     |
| Viticchi   | Giovanna | Ancona                         | Medicine             | Neurology        | Medical manager                     | Marche Polytechnic University                                                                                            |
| Vogrig     | Alberto  | Udine                          | Medicina e Chirurgia | Neurologia       | Dirigente Medico Neurologo          | Clinica Neurologica e di Neuroriabilitazione di Udine, Azienda Sanitaria Universitaria Friuli Centrale                   |
| Zanferrari | Carla    | Milano                         | Medicina e chirurgia | Neurologia       | Direttore UOC                       | UOC di neurologia e stroke unit Ospedale Vizzolo-Predabissi ASST Melegnano, Milano                                       |
| Zangrossi  | Andrea   | Padova                         | Psychology           | -                | Post-doc                            | University of Padova                                                                                                     |
| Zappia     | Mario    | Catania                        | Medicina e Chirurgia | Neurologia       | Professore Ordinario di Neuorologia | Università di Catania - Clinica Neurologica I - Catania                                                                  |
| Zatti      | Cinzia   | Brescia                        | Medicine and Surgery | Neurology        | Resident                            | University of Brescia                                                                                                    |
| Zauli      | Aurelia  | Rome                           | Medicine and Surgery | Neurology        | Resident                            | Catholic University of Sacred Heart                                                                                      |
| Zeviani    | Massimo  | Padova                         | Medicina e Chirurgia | Neurologia       | ricercatore                         | Università degli Studi Milano Bicocca                                                                                    |
| Zini       | Andrea   | Bologna                        | Medicina e chirurgia | Neurologia       | dirigente medico                    | Direttore UOC Neurologia e Rete Stroke metropolitana Ospedale Maggiore IRCCS Istituto di Scienze Neurologiche di Bologna |
| Zivi       | Ilaria   | San Fermo della Battaglia (CO) | Medicine and Surgery | Neurology        | Neurologist                         | Centro Cefalee dell'ASST Lariana                                                                                         |
| Zoleo      | Pio      | Catanzaro                      | Medicine and surgery | Neurology        | Resident                            | University Magna Graecia of Catanzaro                                                                                    |
| Zorzi      | Giovanni | Padova                         | M                    | Neurology        | medical doctor                      | University of Padova                                                                                                     |