europass

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Address: Regione Gonzole 10, Department of clinical and biological sciences, 10043, Orbassano, Italy (Work)

WORK EXPERIENCE

03/07/2023 – CURRENT

TECHNICAL ADMINISTRATIVE PERSONNEL UNIVERSITY OF TURIN (UNITO)

- set up of the biobank of the Department of clinical and biological sciences, University of Turin (cryogenic room, documentation, informed consent,management of samples and data)
- Translational Research activity (biomarkers)

18/09/2006 – 30/06/2023 Orbassano, Italy

RESEARCH FELLOWSHIPS AND GRANT NEUROSCIENCE INSTITUTE CAVALIERI OTTOLENGHI (NICO)/UNIVERSITY HOSPITAL SAN LUIGI GONZAGA

- **Translational research in Multiple Sclerosis and NMOSD**
  - Study of Neurofilament Light Chain in MS and NMOSD patients as biomarker of disease activity and treatment responsiveness. (Simoa technology)
  - Development and validation of methods for the determination of anti-aquaporin 4 antibodies in optic neuromyelitis spectrum disorders (NMOSD) (ELISA, cell based assays)
  - Study of the usefulness of titration of Ab anti Aqp4 in the management of patients with NMOSD
  - study of anti-potassium channel KIR4.1 antibodies in Multiple Sclerosis: possible diagnostic and prognostic role. (ELISA, cell colture)
  - Biological monitoring of patients treated with interferon-beta and Natalizumab: development and validation of methods for the analysis of markers of biological and neutralizing antibodies. (ELISA, Cell based assays and cytopathic assays)
  - Biological monitoring of patients with Optical Neuromyelitis: quantification of cd19 mRNA for monitoring of B lymphocytes in patients treated with anti-CD20 drugs (Digital Droplet-PCR) .

- **Quality management in CRESM biobank** (from 08/04/2021)
  -Definition of types of biological samples to be collected
  -Definition of procedures for the processing of biological material and its conservation
  - Creation and updating of the pseudonymized database of the CRESM Biobank, definition of the type of clinical and biological data relating to the samples to be included
  - Creation and updating of the CRESM Biobank's database
  - Implementation of specific software for biobanks for the management of samples and data and for their traceability (4-banking, Biosigma)
  - Drafting and updating the ethical and legal documents of the CRESM biobank, including SOP, Information and Informed Consent and MDTA document, in accordance with the GDPR (679/2018).
  - Implementation of further management documents of the CRESM Biobank, such as access policies to samples and data of the CRESM Biobank, cost-recovery policy, English version of the MDTA
  - Management and recording of informed consents
  - Management of orders and purchases of consumables and instrumentation, drafting reports, reports and presentations relating to the ongoing project.
  -Quality controls and standardization on the collection, processing and conservation procedures of biological material in the pre-analytical phase. Definition of quality control protocols on biological material, associated data and instrumentation of the CRESM Biobank
  -Participation to BBMRI.it working groups:
    - WG ELSI For good practice of "translational" biobanking,

- WG Implementation of UNI ISO 20387 Standard - pilot project
- WG Liquid biopsies.
- ELSI Working Group “Biobanking/Research biobanks and interaction with the guarantor”
- Europe Biobank Week Roadshow 2022: Pediatric Biobanking and Minor Engagement (BBMRI and ESBB, Rome)

-Participation to the regional “Biobanking” working grouporganized by DAIRI (Dipartimento Attività integrata Innovazione e Ricerca, Azienza Ospedaliera Alessandria)

01/12/2005 – 31/05/2006 Orbassano, Italy
PROJECT COLLABORATION CONTRACT ITALIAN FOUNDATION FOR MULTIPLE SCLEROSIS (FISM)

- gene expression analysis

EDUCATION AND TRAINING

14/07/2009 Turin, Italy
BOARD CERTIFICATION IN CLINICAL AND ANALYTICAL BIOCHEMISTRY University of Turin

27/07/2005 Turin, Italy
MASTER DEGREE IN MEDICAL BIOTECHNOLOGY (9/S) University of Turin

23/07/2003
BACHELOR DEGREE IN IN MEDICAL BIOTECHNOLOGY (L1) University of Turin

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B1	B2	B1	B1	B2
FRENCH	B1	B2	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Microsoft Word | Microsoft Powerpoint | Microsoft Excel | Google Drive | Outlook | Zoom | LinkedIn | Google Docs

ADDITIONAL INFORMATION

PUBLICATIONS

Serum Biomarker Profiles Discriminate AQP4 Seropositive and Double Seronegative Neuromyelitis Optica Spectrum Disorder

– 2024

Abstract

Background and objectives: Glial fibrillary acidic protein (GFAP) and neurofilament light chain (NfL) serum levels are useful to define disease activity in different neurologic conditions. These biomarkers are increased in patients with aquaporin-4 antibody-positive NMOSD (AQP4+NMOSD) during clinical attacks suggesting a concomitant axonal and glial damage. However, there are contradictory results in double seronegative NMOSD (DS-NMOSD). The aim of this study was to characterize the neuronal, axonal, and glial damage of DS-NMOSD in comparison with AQP4+NMOSD.
Methods: Patients with DS-NMOSD (i.e., for AQP4 and myelin oligodendrocyte glycoprotein antibodies-MOG-Abs) and age-matched AQP4+NMOSD diagnosed according to the latest diagnostic criteria and with available serum samples obtained within 3 months from onset/relapse were retrospectively enrolled from

14 international centers. Clinical and radiologic data were collected. Serum NfL, GFAP, tau, and UCH-L1 levels were determined using an ultrasensitive paramagnetic bead-based ELISA (SIMOA). Statistical analysis was performed using nonparametric tests and receiver-operating characteristic (ROC) curve analysis.
Results: We included 25 patients with AQP4+NMOSD and 26 with DS-NMOSD. The median age at disease onset (p = 0.611) and female sex predominance (p = 0.072) were similar in the 2 groups. The most common syndromes at sampling in both AQP4+NMOSD and DS-NMOSD were myelitis (56% vs 38.5%) and optic neuritis (34.6% vs 32%), with no statistical differences (p = 0.716). Median EDSS at sampling was 3.2 (interquartile range [IQR] 2-7.7) in the AQP4+NMOSD group and 4 (IQR [3-6]) in the DS-NMOSD group (p = 0.974). Serum GFAP, tau, and UCH-L1 levels were higher in patients with AQP4+NMOSD compared with those with DS-NMOSD (median 308.3 vs 103.4 pg/mL p = 0.001; median 1.2 vs 0.5 pg/mL, p = 0.001; and median 61.4 vs 35 pg/mL, p = 0.006, respectively). The ROC curve analysis showed that GFAP, tau, and UCH-L1, but not NfL, values were able to discriminate between AQP4+ and DS-NMOSD (area under the curve (AUC) tau: 0.782, p = 0.001, AUC GFAP: 0.762, p = 0.001, AUC UCH-L1: 0.723, p = 0.006). NfL levels were associated with EDSS at nadir only in patients with AQP4+NMOSD.
Discussion: Serum GFAP, tau, and UCH-L1 levels discriminate between AQP4+NMOSD and DS-NMOSD. The different biomarker profile of AQP4+NMOSD vs DS-NMOSD suggests heterogeneity of diseases within the latter category and provides useful data to improve our understanding of this disease.

doi: 10.1212/NXI.0000000000200188

Link https://www-ncbi-nlm-nih-gov.bibliopass.unito.it/pmc/articles/PMC10753928/

Serum Neurofilaments are a reliable biomarker to early detect PML in Multiple Sclerosis patients. – 2023

Abstract

Background: The earliest detection of progressive multifocal leukoencephalopathy (PML) is crucial in Natalizumab (NTZ)-treated Multiple Sclerosis (MS) patients. This study aims to assess serum Neurofilaments (sNFL) ability to early detect PML in longitudinal patients' follow-up.
Methods: NFL were retrospectively measured in four PML cases occurred at the Regional Referring Center for MS (CRESM, Italy), in samples collected since one year before PML diagnosis, at PML diagnosis, during PML and in post-PML follow-up. sNFL levels were interpreted according to previously defined reference values. Clinical examination and EDSS were performed at each NTZ infusion. Routinary MRI was undertaken every six months; after PML diagnosis, MRI was performed according to clinical evaluation. sNFL were also measured in 45 NTZ-treated patients experiencing NEDA-3 status for at least 12 months.
Results: Patients showed different PML onsets and manifestations: in 3 patients routinary brain MRI revealed radiological signs of PML preceding different clinical manifestations, while in one patient brain MRI was performed after the clinical onset. PML diagnosis was defined at the time of the first detection of JCV DNA in cerebrospinal fluid. The following different PML phases were considered: 1. Basal (up to 4 months before PML diagnosis): sNFL values were in the normal range in all patients' samples, except for one (median 9.1 pg/ml, range 6.2-15.1 pg/ml) 2. Pre-PML (within 3 months before PML diagnosis): sNFL were elevated in all available samples (median 19.50 pg/ml, range 15.50-33.80 pg/ml). 3. PML diagnosis: sNFL were elevated in all patients (median 59.20 pg/ml, range 11.1-101.50 pg/ml). 4. PML/IRIS: during this phase, sNFL levels reached their peak (median 96.35 pg/ml, range 20.5-272.9) in all patients. 5. Post-PML (recovery phase, starting from the first MRI without enhancement, up to the end of follow-up): sNFL levels showed a decrease (median 12.80 pg/ml, range 9.30-30.60); however, based on reference values, sNFL were still elevated in 2 out of 4 patients at the end of their follow-up (622 and 887 days after PML diagnosis). sNFL were always elevated when MRI scan suggested a suspicious of PML. In NEDA-3 patients, sNFL levels were in the normal range in all patients' samples (median 4.7 pg/ml, range 1.4-8.6 pg/ml).
Conclusion: Elevated sNFL were observed not only at PML diagnosis, but also in pre-PML phase. At PML recovery, sNFL weren't normalized in all patients' samples, suggesting ongoing neuronal degeneration. sNFL represent a reliable biomarker and should be introduced in clinical practice as an additional/alternative parameter to MRI to early detect and monitor PML.

doi: 10.1016/j.msard.2023.104893.

Link https://pubmed-ncbi-nlm-nih-gov.bibliopass.unito.it/37481820/

Cerebrospinal fluid neurofilament light chains predicts early disease-activity in Multiple Sclerosis. – 2023

Abstract

Background: Among biomarkers of axonal damage, neurofilament light chains (NFL) seem to play a major role, representing a promising and interesting tool in Multiple Sclerosis (MS). Our aim was to explore the predictive role of cerebrospinal fluid (CSF) NFL in patients with a recent diagnosis of MS, naïve to any MS therapy.

Methods: We retrospectively collected data of patients diagnosed with MS, referred to the Neurology Clinic of the University-Hospital G. Rodolico of Catania between January 1st 2005 and December 31st 2015. All patients underwent CSF collection at the time of MS diagnosis and were followed-up for at least three years afterwards. NFL levels were measured in CSF samples with Simoa NFLight advantage kit at the CRESM (University Hospital San Luigi Gonzaga, Orbassano, Torino). NFL levels were expressed as LogNFL. Symbol Digit Modalities test (SDMT) was performed at baseline, at 1-year and at 3-year follow-up. Multivariate logistic regression analysis was performed to investigate LogNFL as a potential risk factor of different clinical outcomes.
Results: 244 MS patients (230 relapsing-remitting, RRMS; 94.3 %), with a mean age at diagnosis of 37.0 ± 11.1 years, were recruited. LogNFL did not correlate neither with EDSS score at diagnosis and at subsequent follow-up up to 12 years, nor with SDMT performed at diagnosis, at 1 year and at 3 years. LogNFL were an independent factor for the occurrence of at least one relapse during the first two years after MS diagnosis (OR = 2.75; 95 % CI 1.19-6.31; p = 0.02) and for the occurrence of gadolinium-enhanced (Gd+) lesions during the first 2 years from diagnosis at brain and spine MRI scans (OR = 3.45, 95 % CI 1.81-6.57; p < 0.001).
Conclusion: The detection of CSF NFL at the time of MS diagnosis can be a useful support to predict the two-year risk of clinical and radiological relapses, thus affecting therapeutic choices in the very early phases of the disease.

doi: 10.1016/j.msard.2023.105131

Link https://pubmed-ncbi-nlm-nih-gov.bibliopass.unito.it/37951096/

Serum and cerebrospinal fluid neurofilament light chains measured by SIMOA™, Ella™, and Lumipulse™ in multiple sclerosis naïve patients. Multiple Sclerosis and Related Disorders, 2023, 105412, ISSN 2211-0348,

– 2023

ABSTRACT

BACKGROUND

Neurofilament light chains (NfL) are cytoskeletal biomarkers of axonal damage, about 40-fold higher in cerebrospinal fluid (CSF) compared to serum, and requiring ultrasensitive techniques to be measured in this latter fluid.

OBJECTIVES

To compare CSF and serum NfL levels in multiple sclerosis (MS) patients using different platforms.

METHODS

60 newly diagnosed relapsing-remitting MS patients (38 females; median age: 36.5 years, range: 15-60) were enrolled before steroid or disease-modifying treatments. CSF and serum NfL were measured with: the commercial Ella™ microfluidic platform (Bio-Techne), the Lumipulse™ Chemiluminescent Enzyme ImmunoAssay (Fujirebio), and SIMOA™ on the SR-X instrument using NF-light assays (Quanterix).

RESULTS

CSF and serum NfL absolute levels strongly correlated between assays, although being more elevated with Ella™. Passing-Bablok regression showed high agreement in measuring CSF NfL between assays (with greater proportional difference using Ella™), and very high agreement for serum comparing SIMOA™ and Lumipulse™. Similarly, the Bland-Altman comparison evidenced lower biases for Lumipulse™ for both fluids.

CONCLUSIONS

CSF and serum NfL in naïve MS patients are reliably measured with all assays. Although not interchangeable, SIMOA™ and Lumipulse™ showed high agreement for serum and CSF values.

Link https://www.sciencedirect.com/science/article/pii/S2211034823009112

Tailoring Rituximab According to CD27-Positive B-Cell versus CD19-Positive B-Cell Monitoring in Neuromyelitis Optica Spectrum Disorder and MOG-Associated Disease: Results from a Single-Center Study

– 2023

doi: 10.1007/s40120-023-00481-w.

sNFL applicability as additional monitoring tool in natalizumab extended interval dosing regimen for RRMS patients

– 2022

doi: 10.1016/j.msard.2022.104176

The impact of pre-freezing storage time and temperature on gene expression of blood collected in EDTA tubes

– 2022

doi: 10.1007/s11033-022-07320-5.

The Selective Agonist for Sphingosine-1-Phosphate Receptors Siponimod Increases the Expression Level of NR4A Genes in Microglia Cell Line.

– 2022

doi.org/10.3390/cimb44030083

"Serum neurofilament light chain levels in healthy individuals: a proposal of cut-off values for use in multiple sclerosis clinical practice"

– 2021

doi: 10.1016/j.msard.2021.103090

Rituximab-induced hypogammaglobulinemia in patients with Neuromyelitis Optica Spectrum Disorders

– 2018

Detection of potassium channel KIR4.1 antibodies in Multiple Sclerosis patients. – 2016

doi: 10.1016/j.jim.2017.03.008.

Aquaporin-4 antibody titration in NMO patients treated with rituximab: A retrospective study. – 2016

doi: 10.1212/NXI.0000000000000317

Biological monitoring of IFN-β therapy in Multiple Sclerosis. – 2014

CD19 mRNA quantification improves rituximab treatment-to-target approach: a proof of concept study

– 2014

Evaluation of a multiparametric immunofluorescence assay for standardization of neuromyelitisoptica serology

– 2012

doi: 10.1371/journal.pone.0038896

Classification of individuals based on ex-vivo glatiramer acetate-induced interferon-γ and interleukin-4 response

– 2012

Learning from nature: pregnancy changes the expression of inflammation-related genes in patients with multiple sclerosis

– 2010

Expression and regulation of IFNalpha/beta receptor in IFNbeta-treated patients with multiple sclerosis.

– 2008

Anti-interferon-beta neutralising activity is not entirely mediated by antibodies – 2007

Predictive markers for response to interferon therapy in patients with multiple sclerosis. – 2008

Qualitative and quantitative analysis of antibody response against IFN-beta in multiple scerosis patients.

– 2006

Hepatic expression of hemochromatosis genes in two mouse strains after phlebotomy and iron overload

– 2005

DRIVING LICENCE

Driving Licence: B

CONFERENCES AND SEMINARS

27/06/2023
ESBB Webinar: Biobanking for international cancer research

23/06/2023
Biobanking e salute pubblica: nuovi scenari Oral Presentation_Invited speaker

25/04/2023
ESBB Webinar: Cryo-preanalytics: from storage principles to quality control

28/03/2023
ESBB Webinar: Introduction to data quality

10/03/2023
MS Nord-ovest network meeting. Neurodegenerazione e progression clinica in SM: nuovi segnali predittivi, nuove basi per un approccio comune Oral presentation_invited speaker

07/03/2023
ESBB Webinar: Quality Management in Biobanks involved in clinical studies – How can we Accomplish Adequate Quality Standards in Upstream Research Activities

20/02/2023
Kick-off meeting progetto PNRR Infrastrutture per le biobanche italiane: Strengthening of the Biobanking and Biomolecular Resources Research Infrastructure of Italy (BBMRI.it)

02/11/2022
ESBB Webinar: "Energy efficiency vs. sample quality - Is there a fair trade-off?

26/10/2022 – 28/10/2022
ECTRIMS 2022 38th Congress of ECTRIMS, 27th Annual Conference of RIMS,

27/10/2022
ESBB: Standard BioTools Webinar: Build Your Biobanking House on Solid Foot

26/10/2022
Serie Webinar Accreditamento delle Biobanche in conformità alla UNI ISO 20387, Requisiti del sistema gestione qualità – Opzione A e Opzione B

25/10/2022
Giornata nazionale delle Biobanche BBMRI.it

25/10/2022
ESBB Webinar: "From Bedside to Cryobench: Pre-Analytical factors and how to?

24/10/2022
Ruolo dei Neurofilamenti nella diagnosi e monitoraggio dei pazienti con Sclerosi Multipla: il progetto pilota del CRESM Oral presentation

13/10/2022 – 14/10/2022
Europe Biobank Week Roadshow 2022: Paediatric Biobanking and Minor Engagement

30/08/2022
ESBB Webinar: Management and Quality in Biobanking

28/07/2022
ESBB Webinar: Broad consent or dynamic consent - an ongoing discussion

28/06/2022
ESBB Webinar: Human Biomonitoring: Biobanking & Exposure: Human samples and what they tell us about exposure to chemicals and health effects

10/05/2022 – 11/05/2022
Workshop: "Biobanking 101 Workshop"

03/05/2022 – 05/05/2022
Serie Webinar: "LE INFRASTRUTTURE DI RICERCA EUROPEE, BBMRI, EATRIS, ECRIN: OPPORTUNITÀ E SERVIZI OFFERTI AI RICERCATORI

08/04/2022
Serie Webinar: Accreditamento delle Biobanche in conformità alla UNI ISO 20387 "Dati associati al materiale biologico. Sicurezza informatica".

08/04/2022
Serie Webinar: Accreditamento delle Biobanche in conformità alla UNI ISO 20387 "Biobanche e GDPR".

18/03/2022
Serie Webinar: Accreditamento delle Biobanche in conformità alla UNI ISO 20387 "Focus sulla riferibilità metrologica".

28/01/2022
Serie Webinar: Accreditamento delle Biobanche in conformità alla UNI ISO 20387 "Focus sulle procedure di processo

08/11/2021 – 10/11/2021
Europe Biobank Week 2021_ EBW 2021, online

06/05/2021
Congresso "Regole e modalità per l'accreditamento delle biobanche di ricerca e sviluppo in conformità alla UNI EN ISO 20387:2020

17/03/2021
Webinar "Biobanking with children"

09/11/2020
Corso iniziale per mittenti di trasporti intermodali (per strada ed aereo) di merce pericolosa UN3373 e UN1845 con obblighi di legge e relative responsabilità

27/10/2020
Simoa Success Webinars:Neurology Focus (Quanterix) Oral presentation

10/10/2020
National Day of Biobanks. Access to samples, access to information

11/09/2020 – 13/09/2020
Congresso MSVirtual2020: 8th Joint ACTRIMS-ECTRIMS Meeting

17/04/2019 – 12/02/2020
22 sessions Training and educational program "General Requirements for Biobanking, ISO 20387"

2011 – 2019
La gestione quotidiana del paziente con Sclerosi Multipla Oral presentation

20/05/2019
Convegno "Requisiti per le biobanche di ricerca e sviluppo delle applicazioni biotecnologiche: il ruolo della norma UNI ISO 20387

2017 – 2018
Corso teorico pratico di aggiornamento in Sclerosi Multipla Oral presentation

MANAGEMENT AND LEADERSHIP SKILLS

Quality manager in CRESM Biobank Determination n°218 del 08/04/2021 (University hospital San Luigi Gonzaga, Orbassano, Italy)
Activity from 08/04/2021 to 30/06/2023

COMMUNICATION AND INTERPERSONAL SKILLS

sNFL applicability as additional monitoring tool in Natalizumab Extended Interval Dosing regimen for RRMS patients Poster at ECTRIMS 2022 congress

Quality control in biobank samples: The impact of pre-freezing storage time and temperature on gene expression of blood collected in EDTA tubes Poster at SIN 2021 congress

Normal serum NFL levels: a proposal of cut-off strategy definition for the clinical practice Poster at ECTRIMS 2020 virtual congress

A Real-life experience with sNFL in multiple sclerosis patients, as monitoring and treatment decision biomarker Poster at ECTRIMS 2020 virtual congress

A first characterization of placenta-derived extracellular vesicles in patients with multiple sclerosis Poster at ECTRIMS 2020 virtual congress

Quality controls in biobank samples: effects of pre-analytical factors on blood samples used in gene expression studies. Poster at ECTRIMS 2018

Aquaporin-4 antibody titration in NMO patients treated with Rituximab: a retrospective study AAN 2017 congress

Anti-aquaporin-4 antibodies longitudinal titration in NMO patients treated with Rituximab: involvement in the pathogenesis of the disease, Rituximab impact, and clinical practice. ECTRIMS 2017 congress

Post-marketing evaluation of a multiparametric immunofluorescence assay for the detection of anti-AQP4 antibodies in the diagnosis of neuromyelitis optica Poster at ECTRIMS 2010