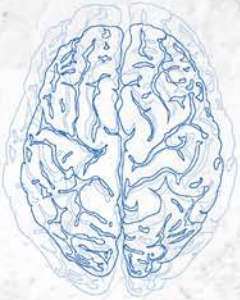
5th Panhellenic Interdisciplinary Congress

on Childhood, Adolescent, Adult and Aged-Adult Multiple Sclerosis:

DIALOGUES OF THE GREEK NEUROSCIENTISTS on the topic

"Neuroimmunology of Multiple Sclerosis of all ages, in the era of personalized therapeutics"



28 - 30 November 2024

24 CME-CPD points from the Panhellenic Medical Association

Hotel **Crowne Plaza** ATHENS

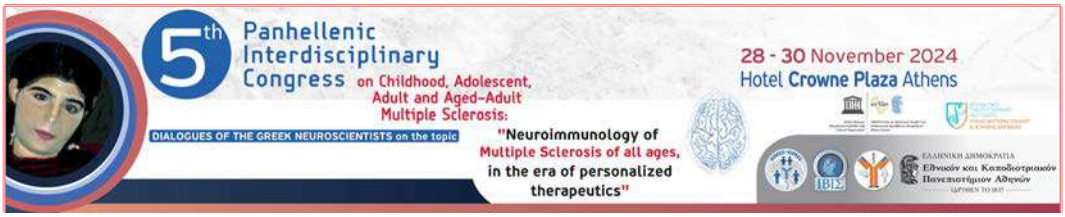
United Nations Educational, Scientific and Cultural Organization

UNESCO Chair on Adolescent Health Care National and Kapodistrian University of Athens Greece

ΕΡΕΥΝΗΤΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΑΚΟ ΙΝΣΤΙΤΟΥΤΟ ΥΓΕΙΑΣ ΜΗΤΕΡΑΣ ΠΑΙΔΙΟΥ & ΙΑΤΡΙΚΗΣ ΑΚΡΙΒΕΙΑΣ

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Εθνικόν και Καποδιστριακόν Πανεπιστήμιον Αθηνών
ΙΔΡΥΘΕΝ ΤΟ 1837

– Scientific Program –



↘ Greeting from the Presidents

Dear colleagues, dear students,

We are pleased to present the **5th Anniversary Panhellenic Interdisciplinary Conference on Childhood, Adolescent, Adult and Aged-adult Multiple Sclerosis (MS)**, which will be held November 28-30, 2024, in Athens, under the auspices of the Athens School of Medicine, of the Hellenic Institute of Children, Adolescents and Adults with Multiple Sclerosis (EIPEES), of the Institute of Biology and Medicine of Stress (IBIS), of the Institute of Autoimmune Systemic and Neurological Diseases (IASYNN), of the Research University Institute of Mother Child & Precision Medicine and UNESCO Chair of Adolescence of Health and Medicine, National and Kapodistrian University of Athens.

Last year's successful participation of students, young scientists and physicians, distinguished professors from the country and abroad, as well as patients was also this year a constituent element of the conference, with the theme **"Neuroimmunology of Multiple Sclerosis of all ages, in the era of personalized treatment"**, with references to Neuroimmunotherapies, in the context of Precision Medicine.

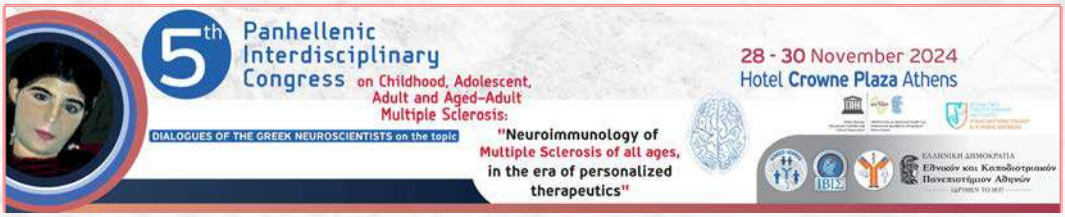
This year, new immunotherapies are discussed and presented, such as **CAR-T cell immunotherapy**, with a targeted approach to both MS and other autoimmune neurological diseases, with common pathological pathways, but resistant to all existing immunotherapies.

As always, at this congress there are speakers from a wide range of specialties and we address a wide range of specialties with this invitation, given the introduction and establishment of interdisciplinarity from our first congress!

Your presence and your active participation, again this year will make a decisive contribution to the success of the congress and to the highlighting of common practices in the diagnosis, differential diagnosis and comprehensive and personalized therapeutic treatment of the common but also the rare and difficult demyelinating diseases, of the Central Nervous System, of children and adults - overadults!

We are waiting for you at Crowne Plaza, in the center of Athens!

Marinos Dalakas **Maria Anagnostouli** **George Chrousos**



↘ Committees

↘ Organizing Committee

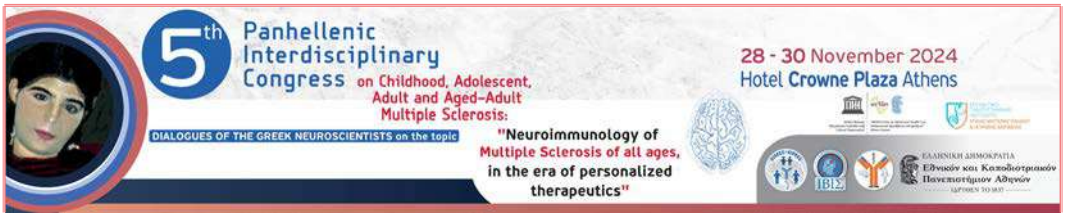
President:
Anagnostouli Maria

Vice Presidents and Honorable Members of the Scientific Committee:
Dalakas Marinos
Chrousos George

Members:
Goules Andreas
Vartzelis Georgios

↘ Scientific Committee

Acquaviva Teresa
Anagnostouli Maria
Barmparousi Vasiliki
Boziki Marina-Kleopatra
Chatzipanagiotou Stylianos
Chitnis Tanuja
Chrousos George
Dalakas Marinos
Dalmau Josep
Dinopoulos Argirios
Evangelopoulos Maria-Eleftheria
Gastaldi Matteo
Gazouli Maria
Gkougka Dionysia
Gontika Maria
Kostadima Vasiliki
Koutsis Georgios
Mani Aikaterini
Mastorodemos Vasileios
Moschovi Maria
Mougiakakos Dimitrios
Mouzaki Athanasia
Orologas Anastasios
Papageorgiou Sokratis G.
Papavasiliou Antigone
Probert Lesley
Stathopoulos Panos
Toulas Panagiotis
Tsitsiloni Ourania
Tsolaki Magda
Tzavellas Elias
Vakrakou Aigli
Vartzelis Georgios
Vlachakis Dimitrios
Vorgia Pelagia
Voudris Konstantinos



↘ Scientific Program

Thursday, November 28th, 2024

11:15-12:00 Objectives of the "5th Anniversary Panhellenic Interdisciplinary Conference on Pediatric, Adolescent, Adult and Aged-Adult Multiple Sclerosis (MS)"
Maria Anagnostouli, Marinos Dalakas, George Chrousos, Andreas Goules, Georgios Vartzelis

12:00-12:30 Introduction-Welcome to the Congress

Greetings from the International Pediatric MS Study Group (IPMSSG)

Speaker: **Tanuja Chitnis**

12:30-14:00 Forum of young scientists-PhD candidates

Chair: **Maria Anagnostouli, Lesley Probert**

Speakers:

Role of the CD8+ T cells and HLADRB1*15:01 allele, in a humanized EAE model — **Anastasia Dagonakis**

Concurrent COVID-19 Infection and Epstein-Barr Virus Reactivation at the First Clinical Episode in a Greek Cohort of Multiple Sclerosis Patients — **Vasileios Gouzouasis**

Study of B lymphocytes in therapy with alemtuzumab — **Anastasia Alexaki**

Macrophages and HLA in MS: From immunopathophysiology to therapy — **Petros Prapas**

HLA alleles as biomarkers for comorbidity of MS and malignant diseases: Common locus of autoimmunity and carcinogenesis — **Maria Kotsari**

14:00-15:30 New data of Neuroimmunology and Artificial Intelligence on Precision Medicine in CNS Demyelinating Diseases

Chair: **Argirios Ntinopoulos, Anastasios Orologas**

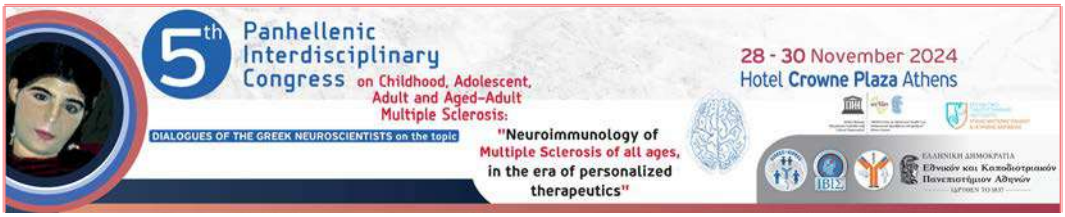
Speakers:

MOG antibodies, in MOGAD and the other CNS demyelinating diseases — **Pelagia Vorgia**

Metabolomics in MS and other CNS demyelinating diseases — **Marina Boziki**

Artificial intelligence in the era of Precision Medicine of today — **Dimitrios Vlachakis**

15:30-16:00 **Coffee break**



Thursday, November 28th, 2024

16:00-18:00 Students of Medical Degree English Program, NKUA:

On multiple sclerosis and other CNS demyelinating diseases

Chair: **Maria Anagnostouli, Georgios Vartzelis**

Differential Diagnosis in MS and other demyelinating CNS diseases. New diagnostic criteria	**Ishita Chaudhari**
Genetics and Immunogenetics in diagnosis and MS therapeutics	**Anna-Maria Anastasiou**
NeuroImmunological aspects of Autonomic Dysfunction in MS and other CNS Demyelinating Diseases	**Tobias Hogan**
Biomarkers in MS and other CNS Demyelinating Diseases	**Daphne-Maria Siozios**
CAR-T cells in MS therapeutics	**Fotis Demetriou**
Omics Technologies in Personalized Medicine for MS	**Konstantinos Pilidis**

Co-Moderator: **Aigli Vakrakou**

18:00-18:30 **Coffee break**

18:30-20:30 Opening ceremony

Official Guest Speakers - Opening Addresses

Chair: **Marinos Dalakas, Maria Anagnostouli**

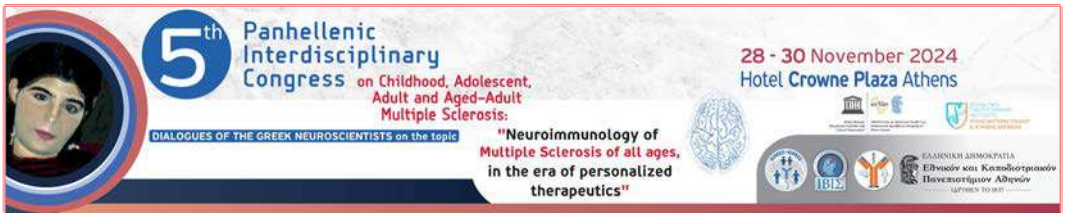
18:30-19:30 Multi-omics in the era of Precision Medicine	**Maria Gazouli**
19:30-20:30 Stress and autoimmunity	**George Chrousos**

20:30-21:00 Photoneuroaesthetics

"We say NO to Stigma and YES to Art and Life"

"We love and protect our environment"

Coordinator-Speaker: **Maria Anagnostouli**



Friday, November 29th, 2024

09:00-10:30 A' Session: rare but highly instructive

Presentation of rare cases of CNS demyelinating diseases, of the entire age range

Chair: **Teresa Acquaviva, Dionysia Gkougka, Constantinos Voudris**

Speakers: **Specialist and resident neurologists from various neurological clinics**

10:30-11:00 **Coffee break**

11:00-12:30 Neuroimaging in CNS demyelinating diseases across the age spectrum

Chair: **Georgios Velonakis, Panagiotis Toulas**

Speakers:

MOGAD and neuroimaging — **Vanessa Barmparousi**

Neuroimaging in shaping of the new diagnostic criteria in MS — **Panagiotis Toulas**

Neuropathology, neuroimaging and neuroimmunology interconnection in CNS demyelinating diseases and the impact on personalized treatment — **Aigli Vakrakou**

12:30-13:00 **Coffee Break**

13:00-13:30 Satellite Lecture — **sponsored by** Bristol Myers Squibb

The Silent Progression of Physical and Cognitive Disability in Relapsing Multiple Sclerosis

Chair: **Vasiliki Costadima**

Speaker: **Vasileios Mastorodemos**

13:30-14:30 Distinguished Lecture

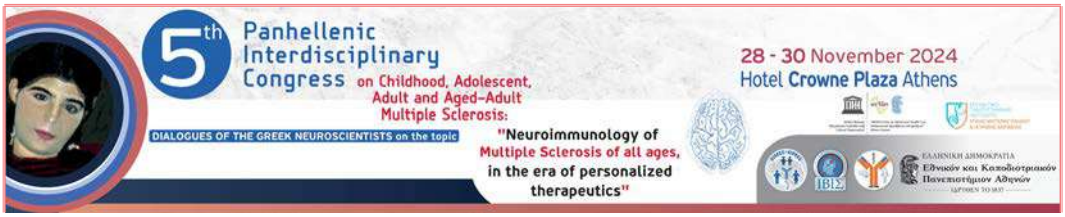
Metacognition in neurological disorders

Chair: **Maria Anagnostouli**

Speaker: **Magda Tsolaki**

Expert commentator: **Sokratis G. Papageorgiou**

14:30-15:30 **Lunch break**



Friday, November 29th, 2024

15:30-17:30 Multiple Sclerosis - New data - Clinical applications

Chair: **Anastasios Orologas, Maria-Eleftheria Evangelopoulos**

Multiple Sclerosis in childhood and adolescence. Up-to-date, clinical, immunological and immunogenetic data and personalized treatment — **Maria Gontika**

PIRA in relation to the underlying neuroimmunological mechanisms and the impact on new treatments for MS — **Vasiliki Kostadima**

New therapeutic data and ongoing clinical studies for MS and demyelinating diseases — **Vasileios Mastorodemos**

The role of B lymphocytes in demyelinating diseases: From neuroimmunology to therapy — **Panos Stathopoulos**

18:00-18:30 **Coffee break**

18:30-19:30 Distinguished Lecture

Chair: **Athanasia Mouzaki, Georgios Koutsis**

The importance of intrathecal MOG-IgG synthesis and MOGAD across the whole age spectrum — **Matteo Gastaldi**

19:30-21:30 Optic neuritis and myelitis (MS, NMOSD, MOGAD, Autoimmune Encephalitides, Systemic Autoimmunity)

Presentations, Case reports and MEET-THE-EXPERT SESSION

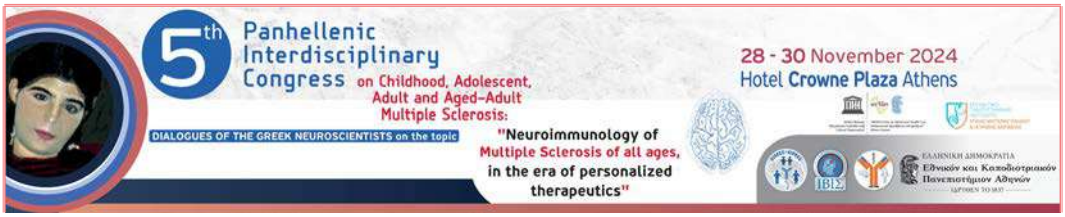
Chair: **Marinos Dalakas, Maria Anagnostouli, Andreas Goules**

OCT and OCT angiography as diagnostic and follow-up tools in CNS demyelinating diseases — **Aikaterini Mani**

Rare MOGAD-optic neuritis in an adolescent with EBV reactivation — **Efstratia-Maria Georgopoulou**

Rare NMOSD-AQP4(+) in an 89-years-old woman with severe optic neuritis and myelitis — **Panagiotis Georgoulas**

Expert Commentators: **Josep Dalmau, Tanuja Chitnis, Matteo Gastaldi**



Saturday, November 30th, 2024

09:00-10:30 Neuropsychiatric and cognitive disorders in demyelinating diseases

Chair: **Elias Tzavellas, Stylianos Chatzipanagiotou**

APO-E in childhood MS: Contribution to personalized treatment — **Charalambos Skarlis**

Immunological and immunophenotypic markers in demyelinating diseases, with neuropsychiatric and/or cognitive impairments — **Konstantinos Patas**

Multiple Sclerosis and psychiatric manifestations - Immunogenetic and neuroimaging investigation — **Nikolaos Markoglou**

Autoantibodies and psychiatric and cognitive manifestations, in CNS demyelinating diseases with underlying systemic autoimmunity — **Dimitrios Karathanasis**

10:30-11:30 Satellite Symposium — **sponsored by** Roche

MS and NMOSD in the spotlight: New developments in the treatment of demyelinating diseases

Chair: **Maria Anagnostouli**

Ocrelizumab in the treatment of Multiple Sclerosis: 10+1 years of data — **Konstantinos Notas**

How satralizumab changed the treatment strategy in NMOSD? — **Panos Stathopoulos**

11:30-12:00 **Coffee break**

12:00-13:00 Distinguished Lecture

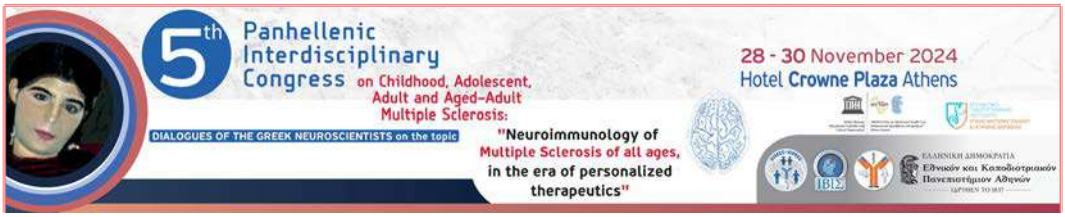
Chair: **George Chrousos, Antigone Papavasiliou**

Similarities and differences in MS management between pediatric and adult MS

Clinical trials in MS: focus on Foralumab — **Tanuja Chitnis**

Expert Commentator: **Maria Anagnostouli**

13:00-14:30 **Lunch Break**



Saturday, November 30th, 2024

14:30-16:00 Distinguished Lectures

Chair: **Georgios Vartzelis, Andreas Goules**

T lymphocytes and malignacies — **Ourania Tsitsiloni**

Personalized therapeutic approach in MS:

Targeting T cells — **Athanasia Mouzaki**

16:00-17:00 **Coffee break**

17:00-18:00 Distinguished Lecture

Chair: **Marinos Dalakas**

Autoimmune Encephalitides: Present and future in diagnosis and management — **Josep Dalmau**

18:00-20:00 CAR-T cell therapies in MS, NMOSD and Myasthenia Gravis (MG)

Chair: **Marinos Dalakas, Josep Dalmau**

Introduction: **Marinos Dalakas**

CAR-T cell therapies in children — **Maria Moschovi**

CAR-T cell therapies in autoimmune neurological Diseases — **Dimitrios Mougiakakos**

20:00-21:00 Final discussion - Conclusions - End of the Congress

Faculty

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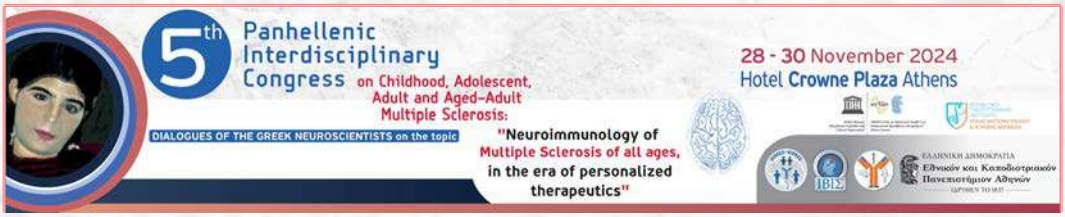

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VOUDRIS KONSTANTINOS
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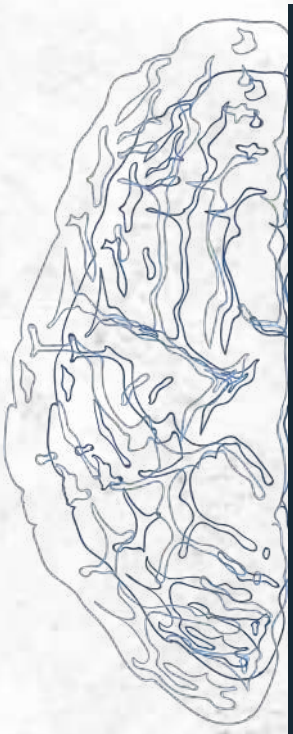


Organized by:

Hellenic Institute of Childhood, Adolescent, Adult Multiple Sclerosis (EIPEES)

Under the Auspices:

School of Medicine, NKUA

Co-Organizers:

- Institute of Biology and Medicine of Stress (IBIS)
- Institute of Autoimmune Systemic and Neurological Diseases (IASYNN)
- Research University Institute of Mother Child & Precision Medicine
- UNESCO Chair of Adolescence of Health and Medicine, National and Kapodistrian University of Athens

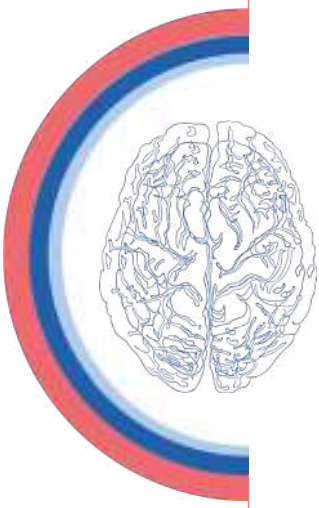
Dates & Venue:

November 28-30, 2024

Crowne Plaza Hotel:

50, Michalakopoulou Ave., 115 28 - Athens,

Tel: +30 210 7278260



Registrations:

Registration is allowed only to health professionals and medical students:

Physicians	120€
New Physicians	70€
Residents	50€
Biologists	Free
Pharmacists	Free
Nurses	Free
Medical Students	Free

CME – CPD credits:

The event has been accredited with 24 CME - CPD credits according to EACCME-UEMS criteria.

Certificate of attendance:

Based on the latest circular of the National Organization for Medicines, there will be a system for counting the monitoring time for each user.

Cover artwork: Spyros Poulimenos

Poster graphic design: Dimitris Athanasas

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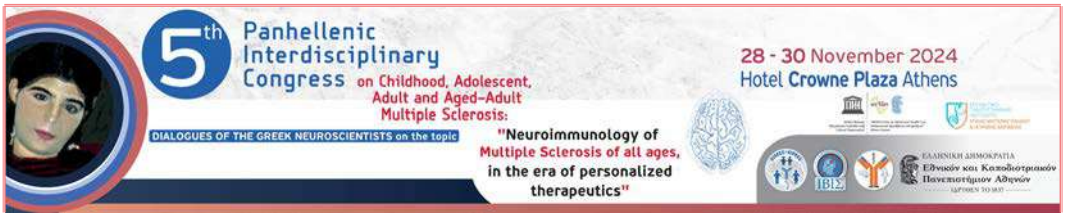

↘ Case Abstracts

HPV INFECTION AND CERVICAL CANCER IN PATIENTS WITH MULTIPLE SCLEROSIS UNDER DMTs

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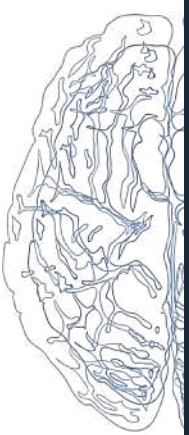
Introduction: Cervical cancer is associated with persistent infections by oncogenic types of the HPV virus, with key risk factors including smoking, contraceptive use, and immunosuppression. Women with multiple sclerosis (MS) who receive strong disease-modifying therapies (DMTs) may be at increased risk for HPV infection and cervical cancer due to the immunosuppressive effects of these treatments.

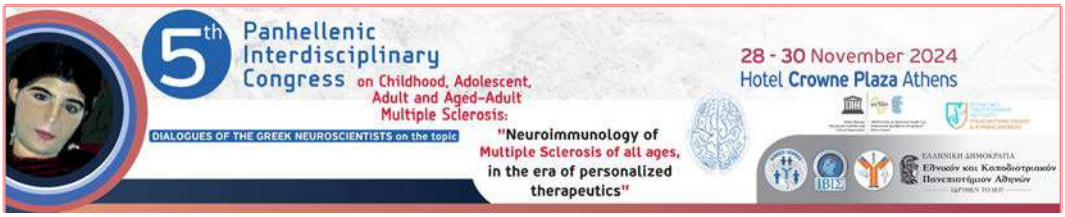
Objective: To investigate the impact of DMTs on the development of precancerous lesions in the cervix of women with MS and the need to optimize prevention strategies and vaccination efforts.

Methods: A literature review was conducted on the risk of HPV infection and cervical cancer development in women with MS undergoing DMTs, along with the presentation of certain cases from our clinic, where patients developed HPV infections and/or precancerous cervical lesions while receiving DMT therapy.

Results: The data suggest a possible increase in the risk of cervical cancer with prolonged use of DMTs. However, studies are limited by small sample sizes, short follow-up periods, and frequent changes in DMTs during the course of the disease. Additionally, there is a low participation rate in screening programs among patients, particularly when initiating DMTs.

Conclusions: Further research is needed to determine the exact effects of DMTs on the risk of cervical cancer and to address barriers to participation in screening and vaccination programs, with the goal of reducing cervical cancer cases.





BILATERAL OPTIC NEURITIS IN A 5 YEAR OLD BOY WITH MOGAD - COMMON DIAGNOSTIC PITFALLS

Topoulli E., Gontika M., Tsimakidi C., Athitakis K., Kallias N., Gkougka D.
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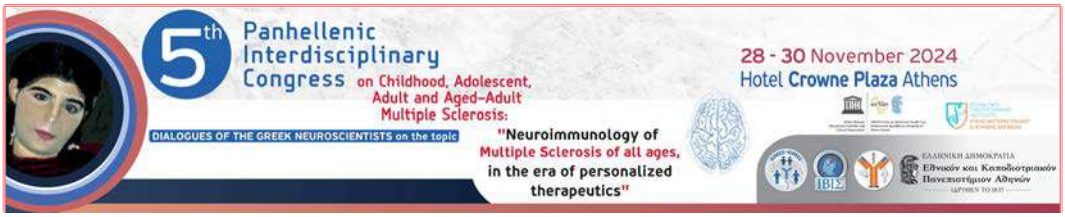
Introduction: Myelin oligodendrocyte glycoprotein (MOG) antibody-associated disease (MOGAD) is a common demyelinating disorder of the central nervous system, with an incidence of 3.1/million in the pediatric population. It presents with a variety of clinical manifestations, mostly acute disseminated encephalomyelitis (ADEM), optic neuritis and transverse myelitis.

Methods: A review of clinical, laboratory and imaging data from the patient's medical records was conducted.

Aim: To present a case of bilateral optic neuritis in a 5 year old boy and the possible diagnostic pitfalls.

Results: A 5 year old boy presented with decreased visual acuity for 20 days. Ophthalmologic evaluation revealed bilateral optic nerve papilledema and visual acuity of 4/10 on the right and 2/10 on the left eye. OCT confirmed the presence of papilledema. His neurological examination, troublous due to his attention deficit disorder, was normal. Brain MRI was also normal and lumbar puncture was performed, with normal opening pressure and analysis. Fixed cell-based assays for antibodies against MOG and AQP4 were negative. On the basis of highly clinically suspected optic neuritis, the patient received a five-day course of intravenous methylprednisolone, followed by oral tapering, with complete clinical and ophthalmological recovery. Stored serum was retested with IFA-live cell-based assays, revealing positive MOG antibodies with a titer of 1/80. The patient received additional treatment with oral prednisolone and, five months later, titers were negative and imaging normal.

Conclusions: The occurrence of bilateral optic neuritis with papilledema in children raises a strong clinical suspicion of MOGAD. It is imperative that the attending physician confirms the protocol of anti-MOG testing requested, due to the high rate of false negative results with fixed CBAs, especially on the ground of strong clinical suspicion. In any case, the clinical context should be the basis of patient's management, due to frequent diagnostic pitfalls.



PRODROMAL RADIOLOGICALLY ISOLATED SYNDROME (PRE-RIS) IN A 17-YEAR-OLD PATIENT WITH FOCAL EPILEPSY - THERAPEUTIC CHALLENGES

Tzembetzis C., Gontika M., Tsimakidi C., Salamou E., Kaliampakos C., Gkougka D.
Pendeli's Children Hospital, Neurological Department

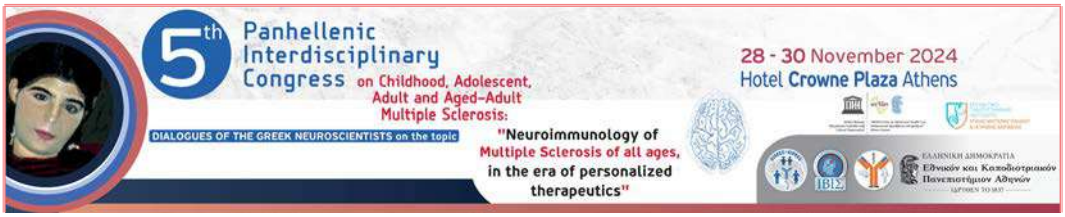
Introduction: Radiologically isolated syndrome (RIS) is characterized by the presence of MRI lesions typical of multiple sclerosis (MS), which meet the dissemination in space criteria but occur in individuals without accompanying demyelinating symptomatology. While RIS in adults has been extensively studied, there is still scarcity of data for the pediatric population and thus, clearly defined criteria for PED-RIS are not yet available.

Methods: A review of clinical, laboratory, and imaging data from the patient's medical records was conducted, along with a literature review.

Objective: To present a case of an adolescent with focal seizures and demyelinating lesions in MRI scan and discuss the appropriate therapeutic strategies.

Results: A 17-year-old female, with a history of primary generalized epilepsy until the age of 7y/o, developed focal seizures at the age of 15 y/o. During evaluation, brain MRI revealed lesions in the subcortical and infratentorial white matter. Spinal MRI was normal, identifying this case as prodromal RIS (pre-RIS). The lumbar puncture analysis showed type-3 oligoclonal bands, while tests for other demyelinating and systemic autoimmune diseases were negative.

Conclusion: The optimal therapeutic approach for RIS in adults remains not fully established and is even more uncertain in pediatric cases, with the pre-RIS stage not clearly outlined in relevant literature. The association of epilepsy as an MS symptom is challenging, as seizures are not a common initial manifestation. However, patients with RIS have an increased risk of developing MS, particularly at younger ages, and especially when infratentorial lesions and positive oligoclonal bands are present. Careful assessment of all clinical and paraclinical findings, as well as atypical MS symptoms like seizures or psychiatric symptoms, is essential for reliably identifying these patients within the purpose of a timely diagnosis and treatment.



MULTIPLE SCLEROSIS IN CHILDHOOD AND ADOLESCENCE - EXPERIENCE OF THREE PEDIATRIC NEUROLOGICAL CENTERS

Korona A.[1], Giorgi M.[2], Taximi S.[1], Mouskou S.[1], Ziaka V.[1], Balla M.[3], Nikolaidou M.[1], Pavlidou E.[4], Dinopoulos A.[2], Vartzelis G.[1], Boudris K.[1]

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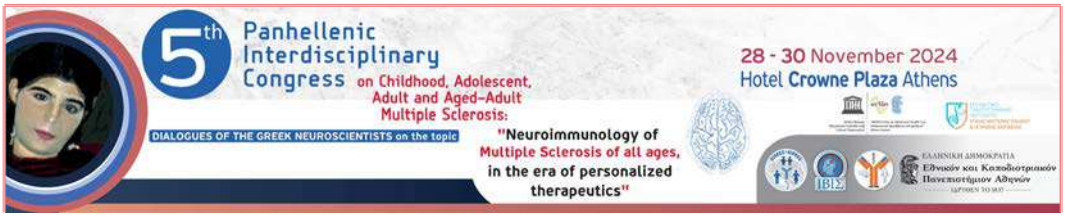
Introduction: Multiple Sclerosis (MS) occurs less often in children than in adults. Early initiation of disease-modifying treatment (DMT) appears to contribute to better prognosis and reducing disability in adulthood. However, the available approved treatment options in childhood MS are limited.

Aim: The presentation of real world data of childhood and adolescent MS cases from three Pediatric Neurological Centers.

Methods: We present 41 pediatric patients with MS from the Pediatric Neurological Departments of the Children's Hospitals "P.&A. Kyriakou", "Attikon" University Hospital and Interbalkan Medical Center - Ioannina University Hsopital, including demographic data, clinical, imaging and laboratory findings at disease onset, type and duration of treatment, and clinical and imaging relapses.

Results: Mean age at diagnosis was 13.5 years (9-16 years), 66% girls. The most common initial clinical manifestations of the disease were dizziness/vertigo, ataxia, numbness/tingling, and optic neuritis. At diagnosis all patients had multiple demyelinating lesions on brain imaging, and 24/41 also in the spinal cord. In addition, 3 patients had tumefactive lesions. Laboratory testing revealed positive oligoclonal bands (type 2 or 3) in all patients and absence of MOG and AQP-4 antibodies (40/41). All patients received disease-modifying therapy (DMT), the majority from the first episode (26/41): interferon beta-1a, glatiramer, fingolimod, dimethyl fumarate, teriflunomide, rituximab, ocrelizumab, mycophenolate mofetil. The majority tolerated the treatment well and only 2/41 discontinued due to adverse effects. Regarding efficacy, 10/41 children experienced clinical relapse and/or MRI activity during follow-up resulting in treatment switch. Almost all patients (39/41) remained with an expanded disability score (EDSS) of zero.

Conclusion: MS treatments had a good safety profile and efficacy in our cohort. Our experience with new DMTs in children might be limited, but is constantly increasing. Larger numbers of patients and long-term follow-up are needed for better understanding of immediate and late impact of DMT in pediatric patients.



MYELIN OLIGODENDROCYTE GLYCOPROTEIN ANTIBODY ASSOCIATED DISEASE (MOGAD) IN CHILDREN –EXPERIENCE OF THREE CENTERS

Giorgi M.[1], Korona A.[2], Mouskou S.[2], Angeli M.[1], Stephanede A.[1], Taximi S.[2], Nikolaidou M.[2], Skoulikaris K.[4], Vorgia P.[3], Vartzelis G.[2], Dinopoulos A.[1], Voudris K.[2]

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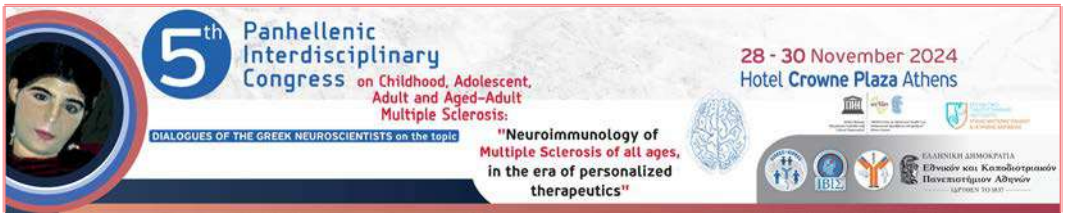
Introduction: MOGAD is a rare, relatively newly described demyelinating disorder of the CNS, presenting with various phenotypes such as optic neuritis (ON), transverse myelitis, acute demyelinating encephalomyelitis (ADEM), cortical encephalitis etc. Clinical presentation, disease course and prognosis differ among adults and children, as the latter demonstrate a rather indolent and diffuse initial attack, better recovery, fewer relapses, and less need for chronic immunomodulation therapy.

Aim: To retrospectively present a case series of children in the MOGAD spectrum from three Pediatric Neurology Centers.

Methods: 16 children (8 males, 8 females) from the Pediatric Neurology Departments of the Children's Hospital "P. & A. Kyriakou", "Attikon" University Hospital and the Pediatric Department of "PA.G.N.I." are included. Demographic data, clinical presentations, disease course, treatments given, relapses and disease prognosis are presented.

Results: Median age at disease presentation was 9 years old (3.5 - 15 years). The most frequent initial clinical presentation was ADEM (37.5%) followed by optic neuritis (25%). Other initial clinical manifestations included: four patients (25%) with cerebral (ADEM-ON, FLAMES, FUEL) and cerebellar syndromes, one with NMOSD and one with combined central and peripheral demyelination (CCPD). All patients were treated with intravenous methylprednisolone at initial episode. 37.5% of them required additional intravenous immunoglobulin administration, while two (12.5%) required also plasmapheresis. Almost all patients experienced complete recovery after induction therapy. All received oral prednisolone for a median of 3 months (1 - 6 months). Disease relapses including ADEM, ON, cerebral and cerebellar syndromes and CCPD occurred in 6 patients (37.5%). They received maintenance treatment with Rituximab (3 patients) or MMF (mycophenolate mofetil) and responded well, except for the FUEL patient, who relapsed on Rituximab and remains asymptomatic under MMF treatment.

Conclusion: MOGAD presents clinical heterogeneity in children. Clinical phenotypes are enriched as our knowledge expands regarding this entity. Although most patients present with monophasic disease course which responds well to steroids, a significant proportion will relapse. The majority of patients with recurrent MOGAD respond well to maintenance therapy.



PRESENTATION OF CASES WITH ACUTE DISSEMINATED ENCEPHALOMYELITIS (ADEM) IN CHILDREN FROM TWO PEDIATRIC NEUROLOGY DEPARTMENTS

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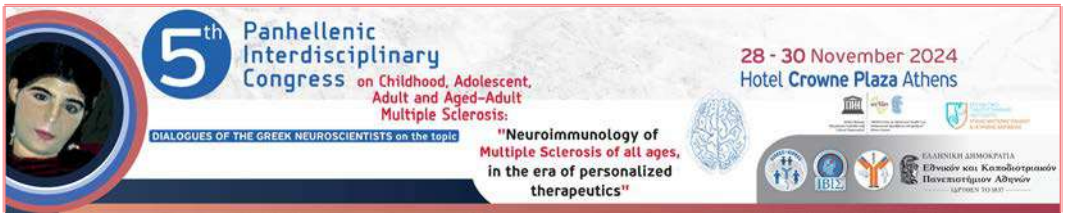
Introduction: Acute disseminated encephalomyelitis (ADEM) is a demyelinating disease, which mainly affects children and whose diagnosis is based on clinical and imaging criteria.
Objectives: The presentation of clinical and laboratory findings, treatment and prognosis of eight children with ADEM.

Methods: Eight children between the ages of 3 and 11 years were hospitalized for encephalopathy and behavioral disorders, four of whom also presented with fever. Four of the patients required hospitalization in the Intensive Care Unit (ICU). On clinical examination, five of the eight children had focal neurological signs. All patients showed MRI lesions in the white and gray matter of the hemispheres, in the basal ganglia and thalamus and some in the cerebellum and in three cases in the spinal column. In two of the patients, the lesions were not evident from the first imaging and a repeat MRI was needed. From laboratory testing, seven of eight patients had positive anti-MOG antibodies in serum and one in CSF, while three of them tested positive for an infectious agent (mycoplasma, HHV7 and parvovirus). Oligoclonal bands were type 1 or 4. Treatment included cortisone pulses followed by oral corticosteroids for at least 3 months, while γ-globulin was added to all patients. Three of the eight patients required plasmapheresis sessions due to deterioration or no response to treatment.

Results: All patients showed gradual improvement with complete neurological recovery. At 3 months, the brain MRI of all the patients showed no pathological findings and the anti-MOG serum titer was negative in most of them. One of the patients, who had a severe clinical picture with ICU hospitalization and fully recovered after treatment, presented a relapse after 3 years, at the age of 6.5 years, with a milder clinical picture, multiple lesions in the MRI and a positive titer of anti -MOG with excellent results. This patient received prophylactic treatment with rituximab.

Conclusion: Early diagnosis of ADEM is of major importance. Early treatment with corticosteroid therapy and additional γ-globulin plus adjunctive plasmapheresis in severe disease seems to lead to complete recovery while relapses are rare.



CASE SERIES OF CHILDREN WITH TUMEFACTIVE MULTIPLE SCLEROSIS (TMS) - A RARE CLINICAL ENTITY

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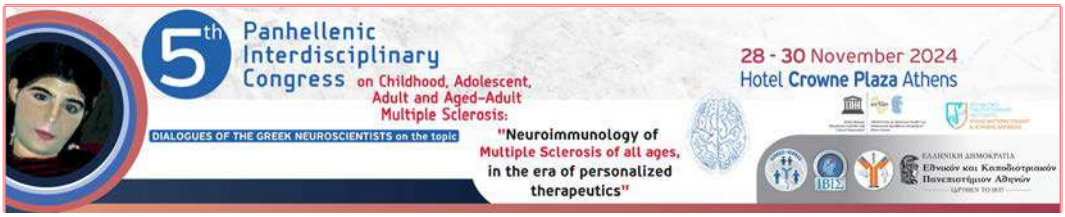
Introduction: Tumefactive multiple sclerosis (TMS) is an extremely rare form of MS in children. It presents with demyelinating lesions resembling a tumor, > 2 cm in diameter.

Purpose: The presentation of clinical-laboratory findings, treatment and outcome of three children with TMS.

Method:
1st patient: 12-year-old female adolescent with acute onset paraplegia and bladder dysfunction. Imaging examination revealed a mass-like demyelinating lesion in the left frontal lobe and a long lesion in the cervical and thoracic spinal cord. The Cerebrospinal fluid (CSF) analysis revealed Oligoclonal bands (OCBs) type 3 and an elevated IgG index. Initially, she was treated with intravenous methylprednisolone (IVMP), intravenous immunoglobulin (IVIG), and plasmapheresis sessions. Due to no response, she continued therapeutically with rituximab. She showed no improvement, so she switched to cyclophosphamide, with gradual response.
4 years later she is on preventive treatment with mycophenolate mofetil with no relapse.
2nd patient: 15-year-old female adolescent with dizziness, ataxia and pyramidal signs in the left lower limb. MRI showed multiple demyelinating lesions both supratentorial and infratentorial with a mass-like morphology and she type 3 OCBs. She was treated with IVMP with good response and was placed in a prophylactic treatment with dimethyl fumarate, having a normal clinical examination. Six weeks later, the patient experienced a relapse with dizziness, gait instability, and slurred speech, along with imaging deterioration. She received further doses of IVMP and the treatment was modified to rituximab.
3rd patient: 15-year-old boy with acute onset of left hemiparesis and dysarthria. The brain MRI revealed large lesions in the periventricular, deep, and subcortical white matter bilaterally, as well as in the corpus callosum. The CSF showed type 3 OCBs. He received treatment with 5 doses of IVMP. Due to lack of clinical and imaging improvement, after 10 days, he received further doses of IVMP and he was prophylactically placed on Rituximab.

Results: All patients initially experienced difficulty in controlling the disease. Two patients are on Rituximab treatment and one is on mycophenolate mofetil. They have shown a good response to the treatment so far.

Conclusions: TMS is extremely rare in the pediatric population. Of major importance is the differential diagnosis as well as the aggressive immediate therapeutic intervention with pulses of corticosteroids and possibly plasmapheresis. Patients require systematic monitoring and prophylactic treatment, with the preferred option being B cells therapies, such as Rituximab.



NEWLY DIAGNOSED MULTIPLE SCLEROSIS - PRESENTATION OF A CASE OF INTEREST

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Introduction: Multiple Sclerosis (MS) is a demyelinating disease of the central nervous system based on specific criteria. However, various challenges may arise during the diagnostic process. We present the case of a 42-year-old female patient with a family history of MS.

Methods - Objective: The patient was admitted due to progressively worsening brainstem syndrome, including bilateral internuclear ophthalmoplegia for 18 days. Ten days earlier, she was infected with COVID-19 with flu-like symptoms, which had already resolved. Brain MRI revealed a periependymal lesion around the 4th ventricle, suggesting NMOSD, as well as lesions in the spinal cord compatible with MS. Cerebrospinal fluid analysis showed type 3 oligoclonal bands. The patient received intravenous corticosteroids, but she developed mild asymptomatic bradycardia. As incidental findings, gallbladder thickening, pleural effusion, and ascitic fluid were observed, which were attributed to recent COVID-19 infection according to the literature. NMOSD testing was negative (2 times). During the investigation of a possible systemic disease, laboratory tests were negative, and the SACE level was mildly elevated. The patient showed clinical and imaging deterioration, with enhancement and extension of the lesion in the pons, as well as new lesions in the midbrain. She received corticosteroids again without developing bradycardia. However, the patient continued to worsen.

Results: Since the patient met the criteria for MS, it was decided to start anti-B cell therapy, which could help and, as much as possible, not negatively affect any other potential systemic disease. Eventually, the patient achieved complete remission of her symptoms and clinical signs.

Conclusions: In this case, while the imaging and laboratory findings suggested a systemic disease, and partially NMOSD, the patient did not meet the diagnostic criteria for these conditions. However, she did meet the diagnostic criteria for Multiple Sclerosis.

REAL-OCRE-ATH: PROTOCOL FOR RECORDING AND UTILIZATION OF CLINICAL AND LABORATORY REAL WORLD DATA FROM ACTUAL DAILY NEUROLOGICAL PRACTICE, OF THREE HUNDRED AND NINETY-THREE (393) PATIENTS WITH ALL SUBTYPES OF MULTIPLE SCLEROSIS, FROM THE MULTIPLE SCLEROSIS AND DEMYELINATING DISEASES UNIT AND CENTER OF EXPERTISE FOR RARE DEMYELINATING AND AUTOIMMUNE DISEASES OF THE CNS, AT AEGINITION HOSPITAL

Tzortzakakis M.[1], Rodamnakis G.[1], Athanasopoulos F.[1], Papathanasiou E.[1], Markoglou N.[1], Skarlis C.[2], Kotsari M.[1], Prapas P.[1], Koumasopoulos V.[1], Hasouras N.[1], Margeli M.[1], Raftogianni F.[1], Koukouraki A.[1], Chrysovitsanou C.[1], Karathanasis D.[1], Vakrakou A.[1], Papadimas G.[1], Stathopoulos P.[1], Koutsis G.[1], Andreadou E.[1], Stefanis L.[3], Evangelopoulos ME.[1], Anagnostouli M.[1,2]

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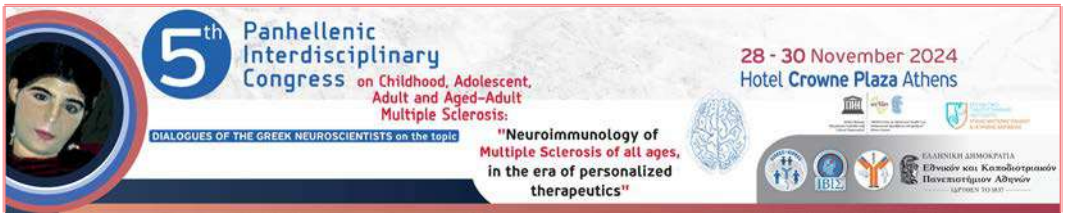
Introduction: The role of B lymphocytes in the pathophysiology of Multiple Sclerosis (MS) has expanded especially in the last decade, with a corresponding increase in circulating anti-B therapies, while during the coronavirus pandemic their use did not decrease, despite initial indications of their negative effect on the overall immune response of patients. Ocrelizumab is a recombinant humanized monoclonal antibody that selectively targets B cells expressing the CD20 antigen, resulting in their elimination, with very good efficacy and tolerance and long infusion intervals, every six months.

Method-Material: The files of 393 patients with MS, who were hospitalized in the last four years, 2020-2024, in the Ward D of Demyelinating Diseases, were reviewed, with a detailed recording of many demographic, clinical, laboratory and immunological data, with all the disease subtypes of the disease, with activity. The planning, preparation and information of all these patients for the next infusion requires a coordinated effort of neurologists and nurses as well as administrative employees.

Results: A total of 393 patients of both sexes and all subtypes of the disease were recorded, 157 men (40%) and 236 women (60%). Mean age of men 46±11.8, range 19-67 years, mean age of women 47±1.9, range 19-75 years, age at onset of men 44.5±11.6, range 18-66 years, age at onset of women 45.3±12.2, range 9-75 years, mean EDSS score of men at the start of Ocrelizumab 3.5±3.3, mean EDSS score of women at the start of Ocrelizumab 4.1±3.5, mean EDSS value of men one year after the start of Ocrelizumab 3.4±1.8, mean EDSS value of women, one year after the start of Ocrelizumab 3.7±1.9.

Conclusions: This initial recording of demographic and clinical data is part of the research protocol with the acronym RealOcreAth, which is currently underway, while the multitude of clinical and laboratory data we expect to highlight the obvious benefit of patients of all ages from treatment with Ocrelizumab, as it has been seen in daily practice, with an obvious impact on their quality of life.



NMO AND MOGAD IN OVERAGED PATIENTS: A CLINICAL SERIES FROM THE CENTER OF EXPERTISE FOR THE RARE DEMYELINATING AND AUTOIMMUNE DISEASES OF CNS, A′ DEPARTMENT OF NEUROLOGY, SCHOOL OF MEDICINE, NKUA

Markoglou N.[1,2], Georgoulas P.[2], Rodamnakis G.[2], Tzortzakakis M.[2], Boumis P.[2], Chatzieleftheriou Z.[2], Kalaras G.[2], Raftogianni F.[2], Tsipota C.[2], Chrysovitsanou C.[2], Karathanasis D.[2], Vakrakou A.[2], Psimenou E.[3], Stathopoulos P.[2], Koutsis G.[2], Evangelopoulos ME.[2], Stefanis L.[4], Anagnostouli M.[1,2]

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Introduction: NMOSD (Neuromyelitis Optic Spectrum Disorder) and MOGAD (MOG Associated Disease) are diseases seen more often in the daily clinical praxis. The average age at onset for NMO is 30-40 years, while MOGAD's incidence is higher in children comparing with adults. The diagnosis of these immunological diseases is much rarer in overaged patients with diagnostic and therapeutical challenges. We present two cases with diagnosis of NMO with AQP4 antibodies positivity at ages of 73 and 89 respectively and one case with MOGAD with diagnosis at age of 68.

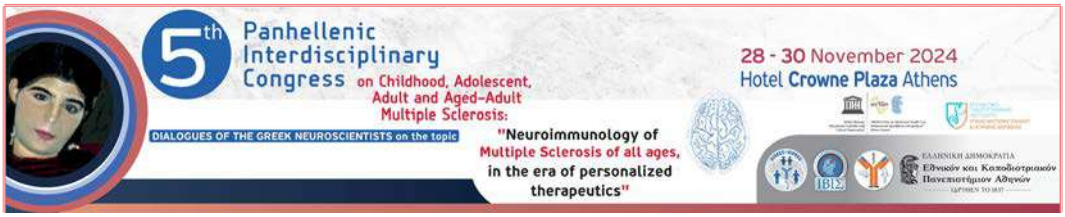
Description of Cases:

Case 1. Female patient 73 years old was admitted to the hospital due to paresthesia and paraplegia with subacute onset. In thoracic spinal cord MRI was revealed a lesion from T2-T10 with gadolinium enhancement and AQP4 antibodies were tested positive. She received 7gr of intravenous methylprednisolone with poor response and six sessions of plasma exchange giving her the ability to walk with one sided aid. Since her diagnosis she receives rituximab every 6 months and remains stable.

Case2. Female patient was admitted to the hospital due to paresthesia of the right arm and hemiplegia with subacute onset and blindness that occurred three days later. In the imaging test was revealed a long extensive transverse myelitis in cervical and thoracic spinal cord with gadolinium enhancement and hyperintense signal in both optic nerves. She was tested positive for AQP4 antibodies and received 6gr of intravenous methylprednisolone with no improvement and 6 sessions of plasma exchange with poor recovery. She will receive ravulizumab in the forthcoming days.

Case 3. Female patient 68 years old was admitted to the hospital due to monoparesis of the right lower extremity with slowly progression and pyramidic syndrome. In the MRI of the spinal cord was revealed lesions in C3-C4, C6-C7, T2-T3 and MOG antibodies were tested positive. She received intravenous methylprednisolone with mild recovery and she will start receiving immunosuppressants.

Conclusion: We presented three overaged cases with NMO and MOGAD with AQP4 and MOG antibodies positivity respectively. According to the references the diagnosis in overaged patients is very rare and the main clinical manifestation is long term transverse myelitis with poor response in immunosuppressants, as was confirmed with our cases. Attention is needed for the therapeutic options and the possible adverse events, due to therapy or the disease per se, in these patients.



A RARE CASE OF AN ADOLESCENT FEMALE PATIENT, OF GREEK ORIGIN, WITH AQP4 POSITIVE, NMOSD AND OPTIC NEURITIS AS THE FORMAL INITIAL SYMPTOM AND PERSONAL AND FAMILY HISTORY POSITIVE FOR AUTOIMMUNE DISEASES. DIAGNOSIS, FOLLOW-UP AND TREATMENT DURING THE FIRST AND SECOND RELAPSE

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Introduction: Neuromyelitis Optica Spectrum Disorder (NMOSD) is a rare demyelinating disease, with a worldwide prevalence that ranges from 0.5 to 4.4 cases per 100,000, with an increasing trend. It is a more rare neuroautoimmune condition especially in childhood, in need of more studies to determine clinical course and effective treatment regimens. Optic neuritis (ON) is a rare condition in adolescents, which leads to significant visual acuity loss, color vision deficits, retrobulbar pain and optic disc edema. ON can be idiopathic or associated with rare neurological conditions, such as NMOSD.

Description of Case: An 18-year-old female patient, with a personal history of Hashimoto's thyroiditis and asthmatic bronchitis and family history of psoriasis and rheumatoid arthritis, from mother and maternal grandmother, respectively, presented over a six-month period, four recurrences of persistent urinary tract infections and severe headache, especially during eye movements. No further investigation was performed at this age, while at the age of 21 the patient presented with sudden onset of optic neuritis of the right eye, with blurred vision (visual acuity 5/10) and disturbances in color perception. MRI of the brain, orbits, cervical and thoracic spinal cord did not reveal pathological findings. Lumbar puncture revealed T1 bands and a normal IgG Index. Investigation of autoantibodies revealed the presence of AQP4 autoantibodies in the serum. After acute phase treatment with methylprednisolone, the patient began prophylactic immunosuppressive therapy, with azathioprine 50mg twice daily, in another clinic. Over a period of one and a half years, she presented with clinical relapse with pyramidal symptoms in the left lower extremity, while OCT revealed thinning of the left retinal layer, while previously during the right ON episode, it was normal. In addition, MRI of thoracic spinal cord, at 3 Tesla revealed inhomogeneity.
The patient is being prepared to start satralizumab, as an add-on therapy, due to the progression of the disease.

Conclusions: NMO/NMOSD is a rare autoimmune disease of the CNS, especially in children and adolescents. ON is one of the most common initial symptoms in this age range, but neurologists' and parents' attention should also be focused on other less obvious symptoms, such as recurrent persistent urinary tract infections and atypical headache, as occurred with our patient. 3 Tesla MRI can highlight further pathological findings, as can OCT, which together can lead to timely escalation of treatment and better disease control and outcome.