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This Issue is Dedicated to the 7th Congress of the Society of Neurologists of the Republic of Moldova

Welcome to the Moldovan Medical Journal!

The Moldovan Medical Journal is an international scientific double-blind peer reviewed periodical edition, 4 per year, of the Scientific Medical Association of the Republic of Moldova designed for specialists in the areas of medicine, dentistry, pharmacy, social medicine and public health. From its debut the journal has striven to support the interests of Moldovan medicine concerning the new concepts of its development.

The Editorial Board warmly welcomes both the readers of and the authors for the journal, all those who are enthusiastic in searching new and more effective ways of solving numerous medicine problems. We hope that those who want to make their contribution to the science of medicine will find our journal helpful and encouraging.

Editorial Board

Emeritus Members of the Editorial Board

INDEXING AND ABSTRACTING

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2. Google Scholar (https://scholar.google.com/citations?hl=en&user=weWUEMAAAAAJ)
3. VINITI, All-Russian Scientific and Technical Information Institute (www.viniti.ru)
4. Ulrichsweb Global Serials Directory (www.ulrichsweb.serialssolutions.com)
5. Directory of Open Access Scholarly Resources (https://portal.issn.org/resource/ISSN/2537-6381#)
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17. CiteFactor Academic Scientific Journals (https://www.citefactor.org/journal/index/23553#.XAjn89szbIU)
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24. Central Scientific Medical Library of Sechenov First Moscow State Medical University (www.scsml.rssi.ru)
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28. Open Academic Journal Index (http://oaji.net/journal-detail.html?number=7489)

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The 7th Congress of the Society of Neurologists of the Republic of Moldova

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The 7th Congress of the Society of Neurologists of the Republic of Moldova with International Participation
Chisinau, September 16-18, 2021
Virtual

Program of the Congress

Thursday, September 16, 2021

European Academy of Neurology Day

09^{00}-09^{15} **Registration of the participants**

09^{15}-09^{30} **Welcome Messages**

- Prof. Dr. **Vitalie Lisnic** (Moldova)
- Prof. Dr. **Dafin Muresanu** (Romania)
- Prof. Dr. **Stanislav Groppa** (Moldova)
- Prof. Dr. **Ludwig Kappos** (Switzerland)
- Prof. Dr. **Alexandre Bisdorff** (Luxemburg)
- Prof. Dr. **Mihail Gavriliuc** (Moldova)

09^{30}-10^{15} – Dafin Muresanu (Romania) Challenges and opportunities in stroke recovery

10^{15}-11^{00} – Ludwig Kappos (Switzerland) Updates on diagnosis of multiple sclerosis

11^{00}-11^{15} **Coffee break**

11^{15}-12^{00} – Alexandre Bisdorff (Luxemburg) Update on vestibular disorders and how to approach them

12^{00}-12^{30} – Resident and Research Fellow Section speaker Info on Grants/News for Neurologists in Training

12^{30}-13^{30} **Lunch**

13^{30}-16^{40} – Interactive workshops

Dafin Muresanu (Romania) Rare cases of stroke

Ludwig Kappos (Switzerland) Switching of therapies in multiple sclerosis

Alexandre Bisdorff (Luxemburg) Targeted clinical vestibular examination on positional vertigo and head impulse testing

16^{40}-17^{00} – Closing remarks

Friday, September 17, 2021

08^{00}-08^{30} **Registration**

08^{30}-09^{00} **Opening ceremony**
Moderator – **Vitalie Lisnic** (Moldova)

- Prof. Dr. **Vitalie Lisnic**, President of the Society of Neurologists of the Republic of Moldova
- **Delegate** of the Ministry of Health
- Prof. Dr. **Emil Ceban,** Rector of *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova
- Prof. Dr. **Stanislav Groppa,** Deputy Rector of *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova
- Prof. Dr. **Grigore Zapuhlih**, Director of *Diomid Gherman* Institute of Neurology and Neurosurgery

Cerebrovascular Diseases Session
Panel Moderator – **Stanislav Groppa** (Moldova)

09^{00}-09^{40} – **Stanislav Groppa** (Moldova) The platform of excellence in stroke research

09^{40}-10^{15} – **Natan Bornstein** (Israel) Updates in the management of acute ischemic stroke based on current guidelines of the European Stroke Organization (ESO)

10^{15}-10^{30} – **Elena Manole** (Moldova) The Republic of Moldova's experience in participating in the international registry RES-Q

10^{30}-10^{45} **Coffee break**

10^{45}-11^{00} – **Pavel Leahu** (Moldova) The impact of the COVID-19 pandemic on the management of stroke in the Republic of Moldova

11^{00}-11^{15} – **Alexandru Gasnas** (Moldova) Stroke mimics in patients with symptoms of stroke

11^{15}-11^{30} – **Eremei Zota** (Moldova) Stepwise management of stroke patients: pre-hospital and hospital steps

11^{30}-11^{45} – **Daniela Efremova** (Moldova) Obesity as a risk factor for stroke in the population of the Republic of Moldova

11^{45}-12^{00} – **Pavel Gavriliuc** (Moldova) Management of non-traumatic and non-aneurysmal intracerebral hemorrhages

12^{00}-12^{15} – **Elena Costru-Tasnic** (Moldova) Clinical and laboratory biomarkers for predicting the hemorrhagic transformation of cerebral infarction: preliminary results of a prospective study

12^{15}-12^{30} – **Sorin Barat** (Moldova) IMSP IMU experience in the endovascular treatment of acute ischemic stroke

12^{30}-12^{45} – **Ion Preguza** (Moldova) Extension of the therapeutic window to 24 hours for mechanical thrombectomy. The impact for the Republic of Moldova

12^{45}-13^{00} – **Horia Berceanu** (Moldova) The beginnings of neurosurgery in Moldova

13^{00}-14^{00} **Lunch** **(Poster session No 1.** Moderator – **Oxana Grosu**, Moldova)

Neuromuscular Diseases and Multiple Sclerosis Session

Panel moderators – **Vitalie Lisnic** (Moldova), **Mihail Gavriliuc** (Moldova)

14^{00}-14^{20} – **Vitalie Lisnic** (Moldova) Epidemiological data on Myasthenia Gravis related to the SARS-CoV-2 pandemic in the Republic of Moldova

14^{20}-14^{40} – **Gabriela Radulian** (Bucharest, Romania) Updates on diabetic neuropathy

14^{40}-15^{00} – **Bogdan Florea** (Cluj-Napoca, Romania) The impact of diabetic neuropathy and other peripheral nerve diseases on the background of diabetes mellitus

15^{00}-15^{20} – **Alin Stirban** (Düsseldorf, Germany) Therapeutic approaches in diabetic neuropathy

15^{20}-15^{30} – **Aliona Cucovici** (Moldova) The impact of lifetime alcohol and cigarette smoking loads on Amyotrophic Lateral Sclerosis progression: a cross-sectional study

15^{30}-16^{00} – **Leone Maurizio** (Rotondo, Italy) Risk Factors for Amyotrophic Lateral Sclerosis

16^{00}-16^{30} – **Guy Rouleau** (Montreal, Canada) Genetics of Amyotrophic Lateral Sclerosis

16^{30}-17^{00} – **Ziemssen Tjalf** (Dresda, Germany) Updates in the diagnosis and treatment of diseases accompanied by optic neuromyelitis

17^{00}-17^{15} – **Ana Belenciuc** (Moldova) The prevalence and clinical profile of patients with multiple sclerosis in the Republic of Moldova

17^{15}-17^{30} – **Marina Sangheli** (Moldova) Vestibular manifestations in multiple sclerosis

17^{30}-18^{00} – **Questions and answers. Discussion**

18^{00}-19^{00} – **The executive report of the President and of the Treasurer of the Society. Election of the President of the Society and the Administrative Council**

Saturday, September 18, 2021

Headache and Pain Session

Panel Moderators – **Ion Moldovanu** (Moldova), **Stela Odobescu** (Moldova)

09^{00}-09^{15} – **Ion Moldovanu** (Moldova) The role of post-traumatic stress disorder in migraine chronification

09^{15}-09^{45} – **Vera Osipova** (Moscow, Russia) Subtleties in the diagnosis and treatment of chronic migraine

09^{45}-10^{00} – **Adina Roceanu** (Bucharest, Romania) New aspects in the Classification of Headache Disorders, 3rd edition

10^{00}-10^{10} – **Tatiana Lozan** (Moldova) Primary headaches in children and adolescents: diagnosis and treatment aspects

10^{10}-10^{20} – **Oxana Grosu** (Moldova) Post-COVID headache

10^{20}-10^{30} – **Pavel Leahu** (Moldova) The long-term therapeutic outcome of multifocal rTMS in migraine prevention

10^{30}-10^{45} – **Pedro Morgado** (Braga, Portugal) The treatment of anxiety in the 21st century

10^{45}-11^{00} – **Questions and answers. Discussion**

Dementia Section

Panel moderator – **Lilia Rotaru** (Moldova)

11^{00}-11^{20} – Alexander Kurz (Munich, Germany) Overview of dementia issues. The INDEED project

11^{20}-11^{40} – Saule Turuspekova (Almaty, Kazakhstan) Neurodegenerative dementias

11^{40}-11^{55} – Dan Cuciureanu (Iasi, Romania) Dementia. Diagnostic and treatment aspects

11^{55}-12^{10} – Lilia Rotaru (Moldova) Parkinson's Disease Dementia. Preliminary results of a cohort study in Moldova

12^{10}-12^{25} – Mihail Gavriliuc (Moldova) Novel aspects of vascular dementia

12^{25}-12^{35} – Olga Gavriliuc (Moldova) Cognitive impairment induced by low doses of trihexyphenidyl in patients with Parkinson's disease

12^{35}-12^{45} – Alexandru Andrusca (Moldova) The role of microelectrodes in deep brain stimulation of the subthalamic nucleus in patients with Parkinson's disease

12^{45}-13^{00} – Questions and answers. Discussion

13^{00}-14^{00} Lunch (Poster Session No 2, Moderator – **Oxana Grosu**, Moldova**)**

Epilepsy Session

Panel moderators – **Stanislav Groppa** (Moldova), **Vitalie Chiosa** (Moldova)

14^{00}-14^{40} – Cecille Landmark (Oslo, Norway) Treatment approaches in refractory epilepsy focusing on recently approved anticonvulsant remedies

14^{40}-14^{50} – Daniela Gasnas (Moldova) Familial epilepsy – clinical-epidemiological characteristics and next-generation sequencing in the population of the Republic of Moldova

14^{50}-15^{00} – Anatolie Vataman (Moldova) Anatomo-electro-clinical correlations in myoclonic epilepsy

15^{00}-15^{10} – Cristina Munteanu (Moldova) Nonconvulsive status epilepticus: diagnostic and treatment aspects

15^{10}-15^{30} – Dumitru Ciolac (Moldova) Cerebral integrity and connectivity in multiple sclerosis associated with epilepsy

15^{30}-16^{00} – Questions and answers. Discussion

Pediatric Neurology Session

Panel Moderator – **Svetlana Hadjiu** (Moldova)

16^{00}-16^{15} – **Svetlana Hadjiu** (Moldova) Neurological problems in children after the COVID-19 infection

16^{15}-16^{30} – **Cornelia Calcii** (Moldova) Particularities of status epilepticus in children

16^{30}-16^{40} – **Mariana Sprancean** (Moldova) Immunoenzymatic changes in ischemic stroke in children

16^{40}-16^{50} – **Ludmila Feghiu** (Moldova) Drug-resistant epilepsies in children: clinical cases

16^{50}-17^{00} – **Corina Griu** (Moldova) Cerebellar tumors in children: neurological manifestations in the late postoperative period

17^{00}-17^{10} – **Nadejda Lupusor** (Moldova) Sleep disorders in children after stroke

17^{10}-17^{20} – **Ludmila Cuznet** (Moldova) Imaging aspects in spastic cerebral palsy in children

17^{20}-17^{30} – **Stela Racovita** (Moldova) Neurogenetic aspects in Klinefelter's syndrome in men

17^{30}-17^{45} – **Questions and answers. Discussion**

18^{00}-19^{00} – **Congress Closing Remarks (virtual cocktail, awards, acknowledgments)**

Welcome Messages

Dear Colleagues,
Dear Members of the Society of Neurologists of the Republic of Moldova,
Distinguished Guests,

On behalf of the academic community of *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova, I would like to sincerely congratulate you on the organization of the VIIth Congress of Neurologists of the Republic of Moldova and the Day of the European Academy of Neurology.

Despite advances in medical sciences, the brain and nervous system remain insufficiently studied and investigated, providing an opportunity for ongoing research as neurological diseases often represent a challenge for clinical doctors. To provide qualified assistance to neurological patients, effective investigations and treatments based on scientific evidence are needed.

As in other medical specialties, the neurologist must be informed about the latest progress in this particular field of activity, whether it is about new methods of diagnosis or treatment, whichi is not an easy task in the context of the accelerated pace of science development worldwide.

The organization of specialized national congresses is a unique chance to synthesize, share and assimilate the latest information. Being transmitted from the international level to the local one, in the native language of the professionals, the information becomes more accessible and, later, can be implemented more easily in the daily activity of doctors.

The event hosted by you, dear colleagues, is one of the most valuable, as it manages to bring together renowned local and foreign specialists with the same purpose – the dissemination of updated information with practical value. The fact that the event is held online offeres a great advantage – it is accessible by every neurologist.

Dear Colleagues and quests,

I hope that the information obtained during the Congress will have a significant impact on the quality of the medical act and also lead to new research studies in the field of neuroscience.

I wish all the participants good health and success in realizing the scientific program of the Congress.

Emil Ceban, MD, PhD, Professor
Rector of *Nicolae Testemitanu* State University
of Medicine and Pharmacy of the Republic of Moldova

Dear colleagues,

It is a great honour to have the opportunity to address you a few words regarding the National Neurological Congress, an important scientific and academic event we are about to attend.

The challenging period we face has brought significant changes to our professional and personal lives, forcing us to adapt to a new and unpredictable reality. However, the latest epidemiological developments showed us a glimmer of hope, signs that life can resume to some normality.

In this respect, I want to bring special thanks on behalf of Professor Claudio Bassetti, the President and the Board of the European Academy of Neurology (EAN) to the Society of Neurologists of the Republic of Moldova. Thank you for being such an active member and reliable partner, both as a society and on the individual level. As an EAN Board member, my position allowed me to closely watch your involvement over the years, and the progress has been remarkable.

On a personal note, as a scientist who focused his research in the neurorehabilitation field, my experience working together with Moldova neurorehabilitation specialists was flawless and rich in terms of scientific and medical developments. Therefore, on behalf of the European Federation of Neurorehabilitation Societies (EFNR), I want to congratulate you for the important progress made developing the necessary infrastructure and investing in medical personnel training.

I wish you an extraordinary congress and enjoy the wonderful and diverse scientific program the organizers have put together!

With deep consideration,

Prof. Dr. **Dafin F. Muresanu,** Chairman of EAN Communication and Liaison Committee
President of the European Federation of Neurorehabilitation Societies

Dear colleagues, friends,

I am thrilled to convey my warmest greetings and a heartfelt welcome to each and everyone who shares and respects Neurology and Neurodisciplines.

The passion for neurology gathered us again for this wonderful event – the 7th Congress of Neurologists of the Republic of Moldova. During the Congress the 2nd Day of the European Academy of Neurology (EAN) will take place in Moldova. The initiative to organize EAN Days within the National Neurological Congresses belongs to the Society of Neurologists of the Republic of Moldova.

Neither even the mighty COVID-19 pandemic, nor our busy lives could stop us enjoying this important scientific and educational event.

Interesting presentations, unusual perspectives and solutions for the common and least common clinical situations, know-hows and modern treatments tendencies are only the tip of the iceberg of the scheduled events.

Only shared vision and joint efforts proved their quality impact on our patients' lives and their disease unfolding. Thus, we are here to expand the professional development horizon. Equally important though is to build up our network of friends and good colleagues. So dare to jump in and ignite your curiosity for an amazing journey the organizing committee prepared. Be inquisitive, ask questions and open your mind for new learning opportunities and amazing experiences!

Life is beautiful!

Sincerely yours,

Vitalie Lisnic, MD, PhD, FEAN, Professor of Neurology
The President of the Society of Neurologist of the Republic of Moldova

Moderators and Distinguished Speakers

Vitalie CHIOSA, MD, PhD, Assistant Professor of Neurology
Researcher, Laboratory of Neurobiology and Medical Genetics
Nicolae Testemitanu State University of Medicine and Pharmacy
Chisinau, the Republic of Moldova

Doctor Vitalie Chiosa is an Assistant Professor at the Department of Neurology No 2 of *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova and the chief of studies at the same department. He has been working as a researcher in neurology for the last 14 years in the Laboratory of Neurobiology and Medical Genetics of *Nicolae Testemitanu* State University of Medicine and Pharmacy.

Vitalie Chiosa graduated from *Nicolae Testemitanu* State University of Medicine and Pharmacy, Medical Faculty (1992-1998), and received his postgraduate neurological residency at the same university (1998-2001). He held two 3-months fellowships in clinical neurophysiology (2008-2009 and 2010) at Geneva University Hospitals, Switzerland and clinical internship in 2006-2008.

The main areas of scientific interest of Doctor Chiosa are focused on epilepsy and neurophysiology. He is the author of more than 40 scientific publications in national and international medical journals.

Mihail GAVRILIUC, MD, PhD, Professor of Neurology
Nicolae Testemitanu State University of Medicine and Pharmacy
Chisinau, the Republic of Moldova

Professor Mihail Gavriliuc is the Head of Neurology Department No 1 of the *Nicolae Testemitanu* State University of Medicine and Pharmacy (SUMPh), Chisinau, the Republic of Moldova.

Mihail Gavriliuc graduated from Chisinau State Medical Institute, the Republic of Moldova with diploma of honourable mention and specialized as neurologist at the Department of Neurology and Neurosurgery of Chisinau State Medical Institute.

Professor Gavriliuc started his academic activity in 1991, as an Assistant Professor at the Department of Neurology and Neurosurgery with medical genetic course of *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova. Between 1996 and 2001 he worked as an Associate Professor within the same department.

Mihail Gavriliuc has an impressive managerial experience, including: vice-director of the Institute of Neurology and Neurosurgery, Chisinau, the Republic of Moldova (2001-2010); dean of the Faculty of Medicine No 2 of *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova (2010-2012); vice-rector for international relations of *Nicolae Testemitanu* SUMPh (2012-2018); vice-rector for international students of *Nicolae Testemitanu* SUMPh (2018-2019).

The professional areas of interest of Professor Gavriliuc are: general neurology, ischemic tolerance of the nervous system, problem-based learning. As a result of his research activity, he has published over 100 papers in medical scientific journals in the country and abroad.

Stanislav GROPPA, MD, PhD, Professor of Neurology, Academician
Vice-rector for research of *Nicolae Testemitanu* State University of Medicine and Pharmacy
Chief of the Laboratory of Neurobiology and Medical Genetics
Director of National Center for Epileptology, Institute of Emergency Medicine,
Chisinau, the Republic of Moldova

Academician Stanislav Groppa is vice-rector for research of *Nicolae Testemitanu* State University of Medicine and Pharmacy (SUMPh), president of the Scientific Council of *Nicolae Testemitanu* SUMPh, chair of neurology department No 2 of *Nicolae Testemitanu* SUMPh, chief of Laboratory of Neurobiology and Medical Genetics and Director of National Center for Epileptology, within the Institute of Emergency Medicine in Chisinau, the Republic of Moldova.

Stanislav Groppa acquired his medical degree in 1979 at State Institute of Medicine in Chisinau, the Republic of Moldova, with subsequent studies in Clinical Secondary Education in the specialty of neurology (1979-1981). In 1985 he defended his PhD in medical sciences at the Institute of Medicine No 2 in Moscow, the Russian Federation, after completing his doctoral studies at the same institution (1982-1985). In 1992, he defended his Doctor habilitatus in medical sciences at the State University of Medicine of the Russian Federation, Moscow, and in 1995 was awarded the title of University Professor.

In 2007 Stanislav Groppa became a corresponding member of the Academy of Sciences of Moldova, in 2008 he was elected academician-coordinator of the Medical Section of the Academy of Sciences of Moldova. In 2012 he became a full member of the Academy of Sciences and in 2014 – vice president.

Stanislav Groppa did internships abroad, including Pyongyang, North Korea and Beijing, China in 1991 (3 months); Bielefeld, Germany in 1995 (5 months). He has collaborated and continues to collaborate with scientists and scientific institutions from several countries around the world. He initiated several collaboration projects with universities of Geneva, Switzerland, and Kiel, Germany.

The outstanding results of the Academician are recognized both nationally and internationally, considering that he has been awarded the titles of Professor of Epilepsy at the European Academy of Epilepsy on January 13th 2002, and Specialist of Epilepsy at the European Academy of Epilepsy in Germany in October 2003.

The main areas of clinical and scientific interest are: stroke, epilepsy, dementia, neurogenetics and pain. Academician Stanislav Groppa has published over 450 papers, including nine monographs, five textbooks, seven methodological papers. He is the author of doctoral training programs, residency training programs and clinical secondary education. Under his supervision 16 doctoral theses in medical sciences were defended, including three second doctoral theses. He holds 17 patents and 11 certificates of innovation.

Stanislav Groppa is currently a member of the Stroke Society of Central and Eastern European Countries; The International Association for Neurology and Neuroscience within the European Stroke Society; The Society for the Study of Neuroprotection and Neuroplasticity, *Nicolae Testemitanu* SUMPh Senate and Scientific Council; Assembly of the Academy of Sciences of Moldova; Founder and President of the League for Combating Epilepsy in the Republic of Moldova; Vice-President of the Society of Neurologists of the Republic of Moldova; Chairman of the Neurology Commission within the Ministry of Health, Labor and Social Protection of the Republic of Moldova; Chairman of the Commission for Licensing and Professional Certification of Neurologists and Neurosurgeons of the Republic of Moldova; Chairman of the Methodical Commission in the field of neuroscience; elected member of the American Academy of Neurology; Visiting Professor at the University of Tennessee, Memphis, USA, Department of Neurology; Elected Honorary Member of the Romanian Academy of Medical Sciences; member of the Romanian Society Against Epilepsy; member of the European Academy of Neurology and its Stroke and Epilepsy panel; Professional member of the American Heart Association and the American Stroke Association; member of the Russian National Society of Neurology; member of the Romanian Stroke Society; member of the International Neuroscience Association.

Academician Stanislav Groppa is a member of the editorial board of scientific journals: "Medical Journal of Health Sciences", Chisinau, the Republic of Moldova; "Curierul Medical", editor-in-chief 1998-2000, and honorary member of the editorial board; Perinatology bulletin; "Acta Neurologica Moldavica", Romania; "Эпилепсия и пароксизмальные состояния", Moscow; "Society, Man, Health", editor-in-chief, 1998-2000; Mental Health Magazine; Scientific-practical magazine "Infomed"; magazine "Akademos" of the Academy of Sciences of Moldova.

Svetlana HADJIU, MD, Phd Professor of Neurology
Nicolae Testemitanu State University of Medicine and Pharmacy
Chisinau, the Republic of Moldova

Professor Svetlana Hadjiu is the head of the Pediatric Neurology Clinic within the Department of Pediatrics of *Nicolae Testemitanu* State University of Medicine and Pharmacy (SUMPh), based at the Mother and Child Institute, Chisinau, the Republic of Moldova. Also, she is a member of the Ethics Committee of *Nicolae Testemitanu* SUMPh, a member of the Clinical Research Unit of SUMPh, a member of the senate. Mrs. Hadjiu participates in the Specialist Commission in the field of neurology of the Ministry of Health, Labor and Social Protection of the Republic of Moldova, and since May 2020 has been an Expert of the National Agency for Quality Assurance in Education and Research in Research and Innovation.

Svetlana Hadjiu graduated from Chisinau State Institute of Medicine, Faculty of Pediatrics, in 1985, and in the period 1995-1997 she completed the postgraduate specialization in pediatric neurology at *Nicolae Testemitanu* SUMPh. Mrs. Hadjiu's academic activity begins with the position of assistant professor between 1997-2000. Subsequently, after defending her doctoral thesis in medical sciences (PhD), she became an associate professor and head of studies at the Neuropediatric Clinic. In 2017, after defending her second doctoral thesis in medical sciences, she obtained the title of university professor and became the head of Neuropediatric clinics within *Nicolae Testemitanu* State University of Medicine and Pharmacy.

Professor Hadjiu has completed over 40 training national and international courses abroad, including Romania, Austria, Italy, France, Poland, Germany, United States of America. She has participated in numerous national and international conferences and scientific forums, as a participant, and later as an invited professor.

The fruitful scientific activity of the professor is presented in over 400 published scientific papers, including 2 monographs and 14 clinical protocols.

Her research interests have focused on disorders of nervous system development in children, epilepsy in children, perinatal hypoxic-ischemic disorders.

Currently, Svetlana Hadjiu is the President of the Society of Neuropediatricians of the Republic of Moldova "Neuropsychology Society of Child and Adolescent"; member of the board committee of the Romanian Society of Child and Adolescent Neurology and Psychiatry. She is also a member of the Society of Neurologists of the Republic of Moldova, the Society of Pediatricians of the Republic of Moldova, the Society of Pediatric Neurology of Romania, the European Society of Pediatric Neurology, the European Academy of Neurology.

Vitalie LISNIC, MD, PhD, FEAN, Professor of Neurology
Nicolae Testemitanu State University of Medicine and Pharmacy
Diomid Gherman Institute of Neurology and Neurosurgery
Chisinau, the Republic of Moldova

Vitalie Lisnic is a Professor of Neurology at *Diomid Gherman* Institute of Neurology and Neurosurgery and at *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova.

Dr. Lisnic received his MD degree in 1989 in the same university. In 1996 he received his first PhD degree, and in 2006 – the second PhD degree, both in *Nicolae Testemitanu* State University of Medicine and Pharmacy of Moldova.

To obtain more professional experience Dr. Lisnic completed internships in Neurology and Neurophysiology in Moscow, the Russian Federation, 1993; Charles University, Czech Republic, 1994; Landesnervenklinik of Salzburg, Austria, 1999; Emory University, Atlanta, USA, 2002-2003; National Institute of Neurology, Queen Square, London, UK, 2003; Vienna University, Austria, 2008; Department of Neurophysiology in Manheim, Germany, 2015.

The main fields of clinic expertise and scientific interests are: peripheral nerve disorders, neuromuscular diseases. In 2003-2004 Vitalie Lisnic was the Principal researcher in the grant on demyelinating neuropathies with participation of the Moldovan Research and Development Association and Civilian Research and Development Foundation of USA. He was also the Principal researcher in neuropathies, neuropathic pain, and depressive disorders projects.

For many years Vitalie Lisnic worked for the European Academy of Neurology (EAN) as a member of the Education Committee, member of the management group of the scientific panels on neuropathies, amyotrophic lateral sclerosis, neuroepidemiology and was clinical leader of the e-brain educational platform. Since 2017 he has been a Fellow of the EAN.

Nowadays Vitalie Lisnic is the President of the Society of Neurologists of the Republic of Moldova, delegate of the Republic of Moldova for the World Federation of Neurology (WFN), EAN, and member of the Education Committee of the WFN. Other professional memberships are as follows: American Academy of Neurology; European Stroke Organization; Movement Disorders Society; Romanian Society of Electrodiagnostic Neurophysiology (honorary member).

Professor Vitalie Lisnic is the author of 2 monographs, more than 150 scientific publications in Moldovan and International biomedical journals. Under his guidance were defended 5 PhD theses.

He is the member of the Editorial Board of the scientific journals: Ukrainian Neurological Journal, Ukrainian Journal of Medical and Social Expertise.

In 2012, Professor Lisnic was elected the member of the Editorial Advisory Board and in 2020 – the Managing Associate Editor of the Moldovan Medical Journal.

Ion MOLDOVANU, MD, PhD, Professor of Neurology
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Professor Ion Moldovanu is the principal scientific collaborator of *Diomid Gherman* Institute of Neurology and Neurosurgery, Chisinau, the Republic of Moldova, and former head of the Neurology Department of *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova.

Ion Moldovanu graduated from Chisinau State Medical Institute in 1972, the General Medicine Faculty, and received his postgraduate neurological specialization at the Republican Center of Neurology. In 1983 he received his first PhD degree (specialty – *Neurology*), and in 1991 – the second PhD degree (specialty – *Neurology*), both in *I. M. Sechenov* First Medical Institute, Moscow, Russia.

Professor Moldovanu performed an outstanding research activity acomplished both in the country and abroad (Russia, France, USA), which was succesfully translated both in his practical clinical activity and in the teaching career by giving inspiring lectures and practical courses to medical students, residents at the Neurology Department of *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova.

His research interests have been focused on autonomic nervous system disorders, headache, and movement disorders including variable aspects: Parkinson's disease, functional neurology, palliative care in neurology, and chronic pain. He has broad research contacts, and has been invited to participate at many international congresses and educational courses.

Professor Moldovanu has over 370 published papers, including 4 monographs, and 4 manuals. Under his guidance were defended 19 PhD theses. At present he is a scientific adviser of 4 PhD students.

Nowadays Ion Moldovanu is President of the Association of Headache and Pain of the Republic of Moldova, President of the Society of Psychoanalysis and Psychosomatics of Moldova, Vice-President of the Society of Neurologists of the Republic of Moldova. Other professional memberships are as follows: member of the International Headache Society, member of the European Headache Federation, Honorary Member of the French Society of Neurology, and Vice-President of the Moldovan-French Society *Moldova - Yvonne Aimeé.*

Professor Ion Moldovanu is the member of the Editorial Board of the following scientific journals: Acta Neurologica Moldavica (Iasi, Romania), Mental Health Journal, Director of the scientific journal Reverberations, Bulletin of the Academy of Sciences of Moldova, Medical Sciences (Chisinau, the Republic of Moldova).

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Professor of Neurology, Senior Neurologist, Chairman of the Neurosciences Department, Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, President of the European Federation of Neurorehabilitation Societies (EFNR), Chairman of the Communication Committee of the European Academy of Neurology (EAN), Ex-President of the Romanian Society of Neurology, President of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), Chairman of "RoNeuro" Institute for Neurological Research and Diagnostic, Corresponding Member of the Romanian Academy, Member of the Academy of Medical Sciences, Romania, and secretary of its Cluj Branch.

He is the member of 17 scientific international societies (being Member of the American Neurological Association (ANA) – Fellow of ANA (FANA) since 2012) and 10 national ones, being part of the executive board of most of these societies. Professor Dafin F. Muresanu is also a specialist in Leadership and Management of Research and Health Care Systems (specialization in "Management and Leadership, Arthur Anderson Institute, Illinois, USA, 1998"; "MBA – Master of Business Administration – Health Care Systems Management, The Danube University, Krems, Austria, 2003").

Professor Dafin F. Muresanu has performed valuable scientific research in high interest fields, such as: neurobiology of central nervous system (CNS) lesion mechanisms; neurobiology of neuroprotection and neuroregeneration of CNS; the role of the Blood-brain barrier (BBB) in CNS diseases; developing comorbidities in animal models to be used in testing therapeutic paradigms; nanoparticles neurotoxicity upon CNS; the role of nanoparticles in enhancing the transportation of pharmacological therapeutic agents through the BBB; cerebral vascular diseases; neurodegenerative pathology; traumatic brain injury; neurorehabilitation of the central and peripheral nervous system; clarifying and thoroughgoing study on the classic concepts of Neurotrophicity, Neuroprotection, Neuroplasticity and Neurogenesis by bringing up the Endogenous Defense Activity (EDA) concept, as a continuous nonlinear process, that integrates the four aforementioned concepts, in a biological inseparable manner.

Professor Dafin F. Muresanu is a coordinator in international educational programs of European Master (i. e. European Master in Stroke Medicine, University of Krems), organizer and co-organizer of many educational projects: European and international schools and courses (International School of Neurology, European Stroke Organisation Summer School, Danubian Neurological Society Teaching Courses, Seminars – Department of Neurosciences, European Teaching Courses on Neurorehabilitation) and scientific events: congresses, conferences, symposia – International Congresses of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), International Association of Neurorestoratology (IANR) & Global College for Neuroprotection and Neuroregeneration (GCNN) Conferences, Vascular Dementia Congresses (VaD), World Congresses on Controversies in Neurology (CONy), Danube Society Neurology Congresses, World Academy for Multidisciplinary Neurotraumatolgy (AMN) Congresses, Congresses of European Society for Clinical Neuropharmacology, European Congresses of Neurorehabilitation. His activity includes involvement in many national and international clinical studies and research projects, over 500 scientific participations as "invited speaker" in national and international scientific events, a significant portfolio of scientific articles (242 papers indexed on Web of Science-ISI, H-index: 24) as well as contributions in monographs and books published by prestigious international publishing houses. Prof. Dr. Dafin F. Muresanu has been honoured with: "Dimitrie Cantemir" Medal of the Academy of The Republic of Moldova in 2018, Ana Aslan Award 2018 – "Performance in the study of active aging and neuroscience", for the contribution to the development of Romanian medicine, National Order "Faithful Service" awarded by the President of Romania in 2017; "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Faculty of Medicine, the "Iuliu Hatieganu Great Award 2016" for the best educational project in the last five years; the Academy of Romanian Scientists, "Carol Davila Award for Medical Sciences / 2011", for the contribution to the Neurosurgery book "Tratat de Neurochirurgie" (vol. 2), Editura Medicala, Bucuresti, 2011; the Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca "Octavian Fodor Award" for the best scientific activity of the year 2010 and the 2009 Romanian Academy "Gheorghe Marinescu Award" for advanced contributions in Neuroprotection and Neuroplasticity.

Stela ODOBESCU, MD, PhD, Associate Professor of Neurology
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Mrs. Stela Odobescu is a PhD in medical sciences, associate professor, chief of the Functional Neurology Laboratory within *Diomid Gherman* Institute of Neurology and Neurosurgery, director of the National Center for Headaches and Autonomic Disorders, highly professional neurologist with clinical and scientific activity for more than 34 years.

The main areas of scientific research include the following topics: chronic pain, primary and secondary headaches, autonomic disorders, affective disorders, respiratory dysfunction syndrome, neurostimulation, biofeedback, methods of pharmacological and non-pharmacological treatment of chronic pain, etc.

The results of Mrs. Odobescu's research activity were presented in more than 200 published scientific papers, 3 national clinical protocols, 2 institutional protocols, 3 methodological recommendations, 3 patents, 15 innovations. She is the author of the monograph "Chronic migraine and the vegetative nervous system" (2012), co-author of a neurology textbook and the monograph "Headaches, facial and cervical pain. Diagnosis and treatment" (2007).

In 2000 she defended her doctoral thesis in medicine (PhD) on the topic "Imbalances of respiratory pattern in patients with suprasegmental vegetative disorders" (clinical, psychological, neurophysiological and therapeutic study), and in 2012 – the doctoral thesis in medicine on the topic "Chronic migraine and associated vegetative disorders (epidemiological, clinical-neurophysiological and therapeutic study)".

Since 2006 she has been the representative of the Republic of Moldova in the European Headache Federation. She is also a member of the International Headache Society. At the national level, she is vice-president of the Headache and Pain Society of the Republic of Moldova, member of the Scientific Profile Seminar in the field of Neurology.

Mrs. Stela Odobescu has completed numerous practical and research internships in the field of neurology abroad: France, Czech Republic, USA. As an invited lecturer, she presented reports in Ukraine, Bosnia and Herzegovina, Georgia, Russia. She was the scientific coordinator of a doctoral thesis in medicine (PhD) defended in 2019.

Lilia ROTARU, MD, PhD, Associate Professor of Neurology
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Doctor Lilia Rotaru has an extensive practical and research experience in the neurology field. She has been a senior scientific researcher in the Laboratory of Functional Neurology of the Institute of Neurology and Neurosurgery, Chisinau, the Republic of Moldova, for the last 19 years (since 2002). From 2014, Lilia Rotaru is the scientific secretary of the same institution. In 2020 she started her activity as a Project manager within the State Program 2020-2024: Major cognitive disorder (dementia) in patients with neurodegenerative and vascular disorders (20.80009.8007.39).

Lilia Rotaru graduated from *Nicolae Testemitanu* State University of Medicine and Pharmacy, Medical Faculty (1992-1999), and received her postgraduate neurological residency at the same university, at Neurology Department (1999-2002). In 2012 she obtained her PhD degree, and in 2015 – the Research Associate Professor title.

The main areas of scientific interest of Doctor Rotaru are focused on Parkinson's disease and other movement disorders, headache disorders, sleep disorders, mood disorders.

Guy ROULEAU, OC, OQ, MD, PhD, FRCPC, FRSC,
Professor of Neurology
Director, Montreal Neurological Institute and Hospital (The Neuro)
Montreal, Quebec, Canada
Chair, Department of Neurology and Neurosurgery, McGill University.
Director, Department of Neuroscience, McGill University Health Center (MUHC).

For nearly 30 years, Dr. Guy Rouleau and his team have focused on identifying the genes causing several neurological and psychiatric diseases, including autism, amyotrophic lateral sclerosis, hereditary neuropathies, epilepsy and schizophrenia, as well as providing a better understanding of the molecular mechanisms that lead to these disease symptoms. Among Dr. Rouleau's main achievements are his contribution to the identification of dozens of disease-causing genes and his discovery of new mutational mechanisms.

Dr. Rouleau has published over 850 articles in peer-reviewed journals and has been quoted more than 85000 times (Google Scholar). He has supervised more than a hundred students at the Masters, PhD and Post-doctoral levels in addition to receiving numerous awards for his contribution to science and society.

As a co-founder of the Tanenbaum Open Science Institute, Dr. Rouleau is pioneering a new way of doing research by transforming The Neuro into the first academic institution to adopt Open Science principles in order to accelerate discovery and benefit patients and society.

Saule T. TURUSPEKOVA, MD, PhD, Professor of Neurology
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Professor Saule T. Turuspekova is the Head of the Neurology Department with Neurosurgical course of *Asfendiyarov* Kazakh National Medical University, the chief neurologist of the Ministry of Health of the Republic of Kazakhstan.

Saule T. Turuspekova has over 180 scientific papers published in highly rated national and international journals, and presented at numerous scientific conferences and congresses in over 30 countries around the world.

Her research interests are focused on cognitive dysfunctions, dementia of different aetiology, radiation damage of the nervous system, neurorehabilitation, neurodegenerative diseases.

In 2015, Professor Turuspekova participated in the program "Space research and experiments of the Republic of Kazakhstan on the international space station during the flight of a Kazakh cosmonaut", and was the personal physician of the Kazakh cosmonaut Aydin Aimbetov. In the same year, she was the winner of the nomination "Pride of the University" and "The success of the year". In 2019, Professor Turuspekova was awarded the diploma "National pride of the Republic of Kazakhstan".

Saule Turuspekova is a member of the Association of Neurologists of the Republic of Kazakhstan, ESO, WSO, EAN, AD/PD, WFN, Guidepoint Advisors, IPA, ISPRM.

She is a member of the Editorial Board of the Astrakhan Medical Journal, ISSN 1992-6499, and the "Clinical practice journal" (Russian federal biomedical agency), ISSN 2220-3095. Professor Turuspekova presides over the Public Fund *"Save Our Brain. Central Asia Research Fund"*.

Abstracts

Atypical presentation of glioma tumor: autopsy results

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Abstract

Background: A brain tumor can appear in post-ischemic areas, and due to increased proliferation, venous thrombosis, hypercoagulability, and local factors it can induce stroke. These two conditions can mimic each other. The aim of the study was to analyze the missed cerebral glioma cases due to atypical presentation.
Material and methods: A retrospective analysis of autopsy protocols from 2017 till 2019 was performed and 17 cases of glioma clinically missed but identified at necropsy were selected.
Results: The mean age was 59.116 ± 14.33 years, mean hospital stay 23.8 ± 23.5 days, undergone surgeries 41.2% of cases. Cardiovascular risk factors: hypertension – 88.2%, diabetes – 29.4%, obesity – 23.5%, ischemic heart disease – 58.8% and history of stroke – 17.6%. Imaging described as ischemia – 56.3% of cases, hemorrhage – 47.1%, infections – 11.8%, multiple lesions – 52.9%. Tumor was suspected just in 23.5% of cases. Established discharge diagnoses: hemorrhagic stroke – 29.4%; ischemic stroke – 29.4%; ICH – 11.8%, CNS infections – 17.6%; tumor with another location – 11.8%. Histology confirms grade II gliomas in 11.8%, grade III – 29.4%, and grade IV – 58.8% according to the WHO classification. There was also detected during necropsy associated hemorrhagic stroke in 29.8% of cases, ischemic stroke – 11.8% or infection in 50% of cases.
Conclusions: The study showed that gliomas can present atypically from clinical and imaging point of view as ischemic or hemorrhagic stroke, which suggests the need to follow a well-established diagnostic protocol and increased awareness.
Key words: glioma, ischemic stroke, atypical, mimic, autopsy.

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Pulmonary embolism in stroke patients: autopsy results study

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Abstract

Background: Pulmonary embolism is a major contributor to in-hospital mortality after stroke and accounts for up to 50% of early deaths. The clinical picture could be unremarkable, so the complication is not recognized in a timely manner. The purpose of the study was to analyze the missed cases of pulmonary embolism after stroke.
Material and methods: A retrospective analysis of autopsy protocols from 2017 till 2020 was performed and 13 cases of thromboembolism clinically unidentified but detected at necropsy were selected.
Results: The study sample consists of 5 men (38.5%) and 8 women (61.5%) aged 47 – 83 years. By CT were confirmed as ischemic stroke 6 pts (46.8%), hemorrhagic stroke – 4 pts (30.1%) one of them underwent surgery (7.69%), ischemic stroke with hemorrhagic transformation – 3 pts (23.1%). It was the first event for 11 pts (84.61%) and 2 pts (15.4%) with recurrent stroke. Major cardiovascular risk factors were: hypertension – 2 pts (92.3%), obesity – 8 pts (61.5%), diabetes mellitus – 5 pts (38.46%), atrial fibrillation – 5 pts (38.46%), 1 patient (7.69%) with thrombosis in other areas. Autopsy results indicate pulmonary embolism as the direct cause of death in all patients, but just 2 pts (15.38%) presented suggestive clinical signs.
Conclusions: Patients with stroke are at higher risk of pulmonary embolism due to bed rest, limb paralysis and predisposing risk factors but just a small number of patients are recognized timely to act, that's why it is important to establish strict protocols and high awareness.
Key words: stroke, pulmonary embolism, risk factors, complications, death.

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Management of non-traumatic, non-aneurismal intracerebral hemorrhage

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Abstract

Background: Intracerebral hemorrhage is the second most common form of stroke after ischemic stroke. Common causes of spontaneous intracerebral hemorrhage are: hypertension, amyloid angiopathy, aneurysmal hemorrhages and vascular malformations. The purpose of this study was to evaluate the modalities of medical and surgical management of patients with non-traumatic intracerebral hemorrhage. Non-traumatic intracerebral hemorrhages account for 9 to 27% of all strokes worldwide. In total, the incidence of intracerebral hemorrhage varies from 12 to 31 cases per 100.000 patients. The incidence of intracerebral hemorrhages increases with age, doubling every 10 years after the age of 35. Neuroimaging is clinically important for the rapid diagnosis of intracerebral hemorrhage and the underlying etiology, but also for identifying the risk of hematoma growth, often associated with an unfavorable prognosis. Assessing the risk of hematoma expansion is both an opportunity for therapeutic intervention and a potential danger to hematoma removal surgeries. Mortality at 30 days after intracerebral hemorrhage ranges from 35 to 52%. Half of the deaths occurs in the first 2 days after onset.

Conclusions: Despite the lack of a specific course of treatment for intracerebral hemorrhages, the mortality rate has decreased in recent decades, possibly due to advanced supportive treatment and better control of risk factors and secondary prevention. The reduction in mortality is, however, counteracted by the increase in the number of neurologically deficient survivors.

Key words: intracerebral hemorrhage, intracranial hypertension, management.

Overview of vascular dementia

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Abstract

Background: Vascular disease contributes from 25 to 50 percent of cases of dementia, and vascular dementia is the second most common type of dementia in clinical and population studies, surpassed only by Alzheimer's disease. Vascular dementia refers to any dementia caused primarily by cerebrovascular disease or cerebral flow disorder and can be included in the spectrum of vascular cognitive impairment. Vascular dementia is a syndrome, not a disease and can be caused by any stroke or cardiovascular disease that leads to vascular injury or brain dysfunction, including any of the mechanisms of ischemic stroke (e.g., cardiac embolism, large vessel atherosclerosis, small vessel disease), or hemorrhagic stroke. The diagnosis of vascular dementia is not complete until cardiovascular risk factors have been identified, as this information is needed to develop a secondary prevention plan. Similar to vascular dementia, vascular cognitive deficit is a syndrome that can be caused by any cerebrovascular and cardiovascular disease that leads to vascular brain damage or dysfunction. Neuroimaging has greatly improved the ability to detect and diagnose strokes and silent manifestations of cerebrovascular diseases that affect cognition. Treatment includes the management of vascular risk factors, as well as pharmacological and non-pharmacological approaches.

Conclusions: The term "vascular cognitive impairment" refers to "cognitive impairment that is caused by / or associated with vascular risk factors". Better control of vascular risk factors may prevent development or progression of vascular dementia, but no effective treatment is known at this time.

Key words: dementia, vascular cognitive impairment, stroke, risk factor.

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Causes of traumatic brain injuries in the Republic of Moldova

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Abstract

Background: Traumatic brain injury (TBI) is a major source of health loss and disability worldwide. Many survivors live with significant disabilities, resulting in major socioeconomic burden. Annually, in Europe are registered 57000 of deaths and 1.5 mln. of hospitalizations. The goal of our study was to examine the number and most frequent causes of TBI in the population of the Republic of Moldova and their distribution in reference groups.
Material and methods: This study has included the 3-months' retrospective and 6-months' prospective data in 2 tertiary level hospitals in Moldova. Data were collected using specialized questionnaires, that were eventually analyzed.
Results: During these 9 months 518 patients with TBI were registered, aged between 0 and 79, 294 of them were adults and 224 children. The trauma circumstances have been documented in accordance with national and international guidelines. The main causes were the following: the 1st place – falls from height (277 cases), the 2d place – road traffic injuries (149 cases), the 3d place – interpersonal violence (73 cases) and on the 4th place – self-harm injuries (73 cases).
Conclusions: Our research provides a detailed picture of TBI-related situation in Moldova. To quantify the real burden of TBI, including the prevalence of TBI-related disability, more study is needed.
Key words: traumatic brain injury, trauma circumstances, disabilities.

Preliminary results of the ENERGY study (Ean NEuro-covid ReGistrY) in the Republic of Moldova

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Abstract

Background: ENERGY registry developed by the European Academy of Neurology studies neurological manifestations in patients with COVID-19 infections. *Diomid Gherman* Institute of Neurology and Neurosurgery joined these efforts in December 2020. The aim of the study was to present the Moldovan cohort of patients with COVID-19 infection and neurological manifestations registered in the ENERGY.
Material and methods: The registry recorded demographic data, comorbidities, complications, neurological symptoms in confirmed COVID-19 patients. The patients were evaluated at 6 and 12 months by phone.
Results: The Moldovan cohort of patients with COVID-19 and neurological manifestations by May 2021 consists of 168 patients (50.6% men and 49.4% women). Most patients (86.9%) had comorbidities, such as arterial hypertension – 83.3%, diabetes mellitus – 23.2 %, cardiovascular – 27.4 %, obesity – 21.4 %. History of neurological diseases with impact on patient's health was dementia 3.0%, Parkinson's disease – 1.2%, stroke – 19.0%, multiple sclerosis – 1.2%, neuromuscular disorder – 1.2%, neuropathy – 1.8%. Complications requiring medical intervention were dyspnea – 44.6%, pneumonia – 61.9%, cardiovascular – 7.1%, renal insufficiency – 1.2%, coagulation disorder – 4.2% and mechanical ventilation – 16.1%. New neurological findings in patients with COVID-19 infection were headache (24.4%), vertigo (14.3%), cognitive impairment (35.7%), stupor/coma (22.1%), stroke (62.5%), ataxia (11.4%), spinal cord disorder (7.2%), peripheral neuropathy (5.4%). Mortality rate in the cohort was 22.61%.
Conclusions: The Moldovan cohort of patients with neurological manifestations during COVID-19 infections registered in the ENERGY registry presented most frequently at the emergency department with stroke, cognitive impairment and headache. They have many comorbidities, history of neurological diseases, complications during hospital stay and high mortality rate.
Key words: ENERGY, EAN, Registry, NeuroCOVID.

Vestibular findings in multiple sclerosis patients

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Abstract

Background: Dizziness, vertigo, and imbalance combined with other clinical signs of multiple sclerosis (MS) patients like weakness, sensory loss, ataxia, may result in falls and accidents, as well as restrictions on outdoor activity, which can have a detrimental impact on social engagement and quality of life. Our aim was to identify vestibular deficits in patients with multiple sclerosis (MS).
Material and methods: This retrospective cohort study was conducted on a group of 94 MS patients, aged 18 to 68 years, admitted to our clinic over the course of a year (01.02.2019 – 01.02.2020).
Results: Out of 140 MS patients 94 had vestibular symptoms (59 women and 35 men, mean age 39 ± 6.3 years old). Fifty-seven patients had relapsing-remitting (RR), 27 – secondary progressive (SP), 7 – primary progressive (PP) and 1 – recurrent progressive (RP) MS form. The mean EDSS score was 4.3 ± 1.9. Imbalance was the most common reported symptom (90%), followed by dizziness (43%) and vertigo (17%). Nystagmus was present in 43% of patients, in 68% it was only horizontal and in 13% of cases unidirectional. Vertigo was more frequent in RR patients (24%), dizziness in PP form (57%) and imbalance in SP patients (96%). No significant correlations were found between disease severity (EDSS score) and vestibular findings except imbalance (p=0.037, r=0.242).
Conclusions: Vestibular symptoms are common in patients with MS. Understanding the underlying mechanism of vestibulopathy (peripheral, central, BPPV) may impact on prognosis and management strategies in patients with multiple sclerosis. Therefore, a prospective study is needed.
Key words: multiple sclerosis, vertigo, imbalance, dizziness.

Cognitive impairment and neuropsychiatric manifestations at the onset of multiple sclerosis: case report

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Abstract

Background: Multiple sclerosis (MS) is a demyelinating disease of the central nervous system that mainly affects young adults and leads to a wide range of signs and symptoms, including physical, cognitive and psychiatric manifestations. The cognitive manifestations are slow processing speed, reduced memory and attention performance. Psychiatric disorders include depression, anxiety, bipolar disorder, and psychosis. The first manifestations of the disease are various and sometimes atypical, they can also mimic any other condition.
Material and methods: Case report of early atypical manifestations of MS.
Results: A 26-year-old man presented with diplopia, cognitive decline (inattention and episodes of memory loss) and psychiatric impairment, rapidly progressing during the last 6 months. Dysphoria and anxiety appeared after the cognitive decline. Initially the patient was considered to suffer from a psychiatric disorder, but treatment with anticonvulsants (valproic acid) didn't produce any effect. Neurological examination revealed generalized hyperreflexia, a left pyramidal syndrome and diplopia. Brain MRI demonstrated multiple contrast enhanced ring like lesions (~ N10) in the periventricular and juxtacortical white matter, cerebellum, brainstem, genu of the corpus callosum and cervical spinal cord. Cerebrospinal fluid evaluation demonstrated a presence of specific oligoclonal bands. The treatment with methylprednisolone 1g/day for 5 days suppressed the psychiatric and cognitive manifestations. The patient was referred to disease modifying treatment.
Conclusions: Recognition of early atypical manifestations of MS such as cognitive impairment and psychiatric disorders is important to avoid diagnostic errors and inappropriate, potentially harmful treatments.
Key words: multiple sclerosis, cognitive decline, neuropsychiatric manifestations.

Clinical evaluation of patients with non-aneurysmal and non-traumatic subarachnoid hemorrhage

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Abstract

Background: Subarachnoid haemorrhage (SAH) accounts for about 3% of all strokes and 10% of haemorrhagic strokes, with a mortality of up to 50% of cases. In 85% of cases SAH is caused by an aneurysmal rupture, 10% – are non-aneurysmal, non-traumatic, and 5% – is due to other vascular causes. The purpose of the study was the analysis of the clinical course of patients with SAH, which was not determined by rupture of aneurysm or craniocerebral trauma.
Material and methods: Patients with non-traumatic and non-aneurysmal SAH hospitalized in the Institute of Neurology and Neurosurgery between 2019 and March 2021 were collected. The diagnosis was confirmed by cerebral CT and CT angiography.
Results: The study included 23 patients with non-aneurysmal, non-traumatic SAH with an average age of 59.5 years, 11 women among them. The most common risk factors were: hypertension – 20, smoking – 3, diabetes – 2, obesity – 3, dyslipidemia – 2, COVID-19 – 2, autoimmune diseases – 2. Clinical manifestations included: headache (23), nausea (13), dizziness (11), damage to the cranial nerves (6), motor deficiency (4), meningeal signs (15). Most patients had Hunt-Hess grade 2 (17/23), WFNS grade 1 (16/23), Fisher score grade 1 (13/23), mRs score 2 (17/23). Five patients were placed in the Intensive Care Unit, 5 – developed vasospasm, 2 patients – died.
Conclusions: Our study found that non-aneurysmal and non-traumatic SAH developed more frequently in the elderly adults with hypertension, had moderate severity and a moderate-mild post-SAH degree of disability.
Key words: subarachnoid hemorrhage, stroke, Hunt-Hess scale.

Clinical course and outcomes in immunocompromised patients with neuroinfections

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Abstract

Background: Medical conditions that weaken the immune system facilitate the development of the infections of the nervous system and modify its usual clinical pattern. The aim of our study was to analyze the clinical course and outcomes of immunocompromised patients with neuroinfections.
Material and methods: A total number of 201 patients (101 (50%) – immunocompromised) with neuroinfections, collected for 11 years (from 2007 till 2018) in a tertiary neurological center were analyzed. The following conditions were considered to be an immunosuppressed state: age > 65 years, use of immunosuppressive drugs, a history of splenectomy, diabetes mellitus, alcoholism, HIV (human immunodeficiency virus) infected patients, malignancy, pregnancy, autoimmune diseases and systemic vasculitis. The SPSS program was used to perform the descriptive analysis.
Results: Immunosuppressed patients were older (49±16.5 vs 39±13.6 years, p=0.000), mostly unemployed (65%, p<0.05), without any significant gender prevalence (men 57%). Encephalitis was the most prevalent syndrome in immunosuppressed (19% vs 6%, p<0.01) and meningitis – in immunocompetent patients (63% vs 49%, p<0.05) and had an abrupt onset in 28% of cases. Patients with immunosuppression had higher level of blood glucose (7.2 vs 5.83 mmol/l, p<0.001) and erythrocyte sedimentation rate (37 vs 27 mm/h, p=0.000). The mortality rate (28% vs 16%, p<0.05) and post-disease disability were noticed more frequently (40% vs 23%, p<0.01) in immunocompromised patients.
Conclusions: Immunosuppression is frequent in patients with neuroinfections, delays diagnosis and leads to a high level of mortality and disability.
Key words: neuroinfections, immunosuppression, meningitis.

Intraoperative ultrasonography in brain tumor surgery: 5-year experience

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Abstract

Background: Ultrasonography is an accessible imaging modality that provides real-time guidance with minimal risk or additional time. There is a strong correlation between ultrasonography and postoperative computed tomography when evaluating the extent of tumor resection, suggesting ultrasonography can have significant clinical implications. The objective of this study was to provide more evidence on the usage of ultrasonography in the determination of gross-total resection of brain tumors.
Material and methods: This study consisted of a retrospective review of patients treated at the Institute of Neurology and Neurosurgery between 2015 and 2020 for a brain tumor. All patients were treated with ultrasonography and then underwent postoperative tomography with or without contrast within first 3 days after surgery.
Results: A total of 85 cases were included. Ultrasonography results showed a strong association with postoperative tomography. Ultrasonography was able to accurately identify residual tumor in 100% of subtotal resection cases where resection was stopped due to invasion of tumor into eloquent locations. Cases involving gliomas had a 75% intended total resection rate. Cases involving metastatic tumors had an 87% intended total resection rate. The sensitivity and specificity were reported for ultrasonography in all included tumor pathologies, glioma cases, and metastatic tumor cases, respectively.
Conclusions: The use of ultrasonography may allow for a reliable imaging modality to achieve a more successful total resection of brain tumors. When attempting total resection, it was demonstrated an 81% total resection rate. Ultrasonography can be used in brain tumor surgery to improve surgical outcomes.
Key words: neurosurgery, intraoperative ultrasonography, tumor resection.

Immunoenzymatic changes in ischemic stroke in children

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Abstract

Background: Ischemic stroke (IS) in children is a major neurological emergency, being a primary cause of morbidity and mortality. The incidence of IS is 2 – 13:100000 children or 1:4000 in neonatal period. The purpose of the study was evaluation of the expressivity of immune parameters in children with IS to improve understanding of pathogenesis, early diagnosis and predictive factors of the disease.
Material and methods: In 2017 – 2019 in the Republic of Moldova a prospective study was carried out on a sample of 53 children with IS (study sample, SS), investigated by ELISA in the acute phase of the process determining the serum levels of endogline CD105 (ENG), S100B protein, vascular endothelial growth factor (VEGF), ciliary neurotrophic factor (CNTF), antiphospholipid antibodies (APA), and interleukin 6 (IL-6). These markers were also appreciated in 53 "practically healthy" children (control sample, CS). Six months after IS, serum levels of VEGF and S100B were re-assessed.
Results: Medium values of markers in acute phase were as follows: (1) ENG – 2.06 ± 0.012 ng/ml ($F=84.812$, $p<0.001$); (2) S-100B – 0.524 ± 0.0850 ng/ml ($F=9.330$, $p<0.01$); (3) VEGF – 613.41 ± 39.299 pg/ml ($F=60.701$, $p<0.001$); (4) CNTF – 7.84 ± 0.322 pg/ml ($F=32.550$, $p<0.001$); (5) APA –1.37 ± 0.046 U/ml ($F=60.701$, $p<0.001$); (6) IL-6 – 22.02 ± 2.143 pg/ml ($F=43.810$, $p<0.001$), which were significantly different from the levels in CS.
Conclusions: During the acute period of stroke in children, an increased serum level of the protein S100B, VEGF, CNTF, APA and IL-6 is observed, while CD 105 has low levels. These changes can have predictive role to improve prognosis of neurological outcome.
Key words: biomarkers, stroke, children.

Familial epilepsy – clinical-epidemiological characteristics and next-generation sequencing in the Republic of Moldova's population

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Abstract

Background: Although several theories are implicated in the origin of epilepsy, its cause is still unknown in about 50% of cases. To associate a gene with epilepsy for the first time, families with multiple affected members are needed. The aim of our study is carrying out a clinical-genetic study of multiplex families from the Republic of Moldova, for estimating the genetic biomarkers and establishing their weight in epileptogenesis.
Material and methods: An epidemiological, descriptive study (2018 – 2023) started with lancing a National Epilepsy Registry for multiplex families. Whole Exome Sequencing (WES) was performed on the first 11 families. Preliminary statistical methods were applied.
Results: Our National registry counts now 74 families including 186 members. First 11 families' WES results showed that the most involved chromosomes with candidate epileptogenic variants are the 1, 2, 3, 4, 7, 12, and 17. Top affected genes are the AUTS2, ATXN1, KCNMA1, IRF2BPL, SUFU, CENPE, SACS, EDC3, RYR2, ANKRD11, PTPRD, CHL1, MYH1, CC2D2A, LIAS, TBCD and AARS. From all the detected variants, 20.3% were classified as deleterious and probably pathogenic, 38.9% were marked as tolerated and benign and 22.8% were variants of unknown significance (VUS).
Conclusions: Our results represent an absolute novelty for our country, such studies having been never previously performed. Subjects continue to be recruited and the National Register of presumed genetic epilepsy is constantly being updated.
Key words: epilepsy genetics, whole exome sequencing, multiplex epilepsy families.

Update on current knowledge on poststroke epilepsy

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Abstract

Background: The main cause of seizures in adults beyond the age of 60s is represented by cerebrovascular diseases, mainly hemorrhagic and ischemic strokes. Poststroke epilepsy (PSE) is one of their complications, that leads to poorer quality of life, higher mortality, greater health expenditures and affecting the functional recovery after stroke. The aim of the study was to identify the factors involved in the occurrence of epileptic seizures after stroke and to summarize them in order to identify potential biomarkers of PSE. A literature review was initiated, based on the following keywords: "epilepsy", "stroke", "poststroke seizures", "poststroke epilepsy" which were searched on PubMed database. The following filters were applied: publication date – 5 years, species – humans, age of subjects – 18+, language – English. 320 results were identified, from which only Meta-analyses (1), Reviews (18) and Systematic Reviews (4) were analyzed (total – 23 papers). Studies report an overall incidence of early post-ischemic stroke seizures ranging from 2% to 33%, while that of late seizures spans from 3 to 67%. Seizure activity is identified in up to 8 – 13% of patients following intracerebral hemorrhage. In recent years, more studies started to evaluate blood biomarkers associated with the occurrence of PSE leading to the hypothesis that they are more accurate for the prognostic of PSE.
Conclusions: Diagnosis of PSE is often challenging because of the diversity of clinical manifestations. However, there are no reliable guidelines in clinical practice regarding most of the fundamental issues of PSE management.
Key words: epilepsy, stroke, poststroke seizures, poststroke epilepsy.

Efficacy of implementation of the FeSS protocol in thrombolysed stroke patients from Institute of Emergency Medicine

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Abstract

Background: Implementation of intravenous thrombolysis for acute ischemic stroke has significant impact on stroke outcome by reducing disability and post-stroke mortality rates. However, high risk for developing early complications persists. That's why, FeSS Protocol (additional screenings for blood glucose, temperature control and swallowing monitoring) has been implemented. The purpose of the study was to analyze the efficacy of the FeSS Protocol in reduction of complication rate after intravenous thrombolysis. We compared the data before and after its implementation.
Material and methods: Patients from Institute of Emergency Medicine who underwent thrombolytic treatment were included in this study. The rates of general and hemorrhagic complications were analyzed by comparing the period before (2015 – 2017) and after (2018 – 2020) implementation of the FeSS Protocol.
Results: According to the obtained data, in 2015 – 2017 period, 63 patients underwent the thrombolysis procedure, and in 2018 – 2020 – 124 patients. The rate of hemorrhagic complications in the first period was 11 (17.5%), 4 of which (6.3%) were fatal. In the second period there were 14 (11.2%) hemorrhagic complications, without any fatal cases. The percentage of general complications was higher in the first group – 32%, compared to 19.4% in the second group.
Conclusions: Hyperglycemia, fever and swallowing disturbances in the early post-stroke period are predisposing factors for the development of hemorrhagic and general complications, which negatively affect recovery after stroke. Tight monitoring and management of these parameters can improve the clinical and functional outcome of stroke patients.
Key words: stroke, FeSS, thrombolysis.

Co-occurrence of voltage-gated calcium channel and acetylcholine receptor antibodies: case report

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Abstract

Background: Voltage-gated calcium channels (VGCC) antibodies are generally associated with Lambert Eaton myasthenic syndrome (LEMS). Their coexistence with acetylcholine receptor (AchR) antibodies, which are specific for myasthenia gravis (MG), is extremely rare.
Material and methods: Analysis of one case of co-occurrence of VGCC antibodies and AchR antibodies.
Results: A 36-year-old female without myasthenic symptoms underwent thoracoscopic surgery after a coincidental diagnosis of thymoma (WHO type B2). Two years later she developed generalized muscle weakness (that improved slightly after exercise), dyspnea, diplopia, blepharoptosis, dysarthria and disphagia. Electrophysiological studies showed a 20% decrement. AchR antibodies were positive (32.1 nmol/l), anti-MuSK antibodies were negative while anti-type T VGCC antibodies were atypically positive (14.51 index). The patient received pyridostigmine, corticosteroids, plasmapheresis, but due to a lack of improvement, cyclophosphamide was considered. While undergoing treatment, she developed a myasthenic crisis most likely triggered by SARS-CoV-2 pneumonia. Repeated thoracic imaging also showed a novel massive cystic mediastinal growth. Surgical treatment was recommended and the hystopathological exam revealed an invasive recurrent thymoma associated with a cystic mass.
Conclusions: While up to 5% of patients with MG may test positive for VGCC antibodies, the clinical particularities of these patients have opened the debate whether LEMS and MG might overlap. Several other distinctive, but possibly interrelated features mark this case as unique, particularly the progression of the myasthenic crisis, the recurrence of thymoma and the associated cystic mass.
Key words: calcium channels, acetylcholine receptor, antibodies, myasthenia gravis, Lambert Eaton myasthenic syndrome.

Management of brain tumor-related epilepsy: case report

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Abstract

Background: Patients with brain tumor related epilepsy present a complex therapeutic profile and require a unique and multidisciplinary approach. Difficulty in managing epilepsy in patients with brain tumors stems from an overall resistance to medical therapy, frequent interactions between antiepileptic drugs and chemotherapeutic agents, and potential adverse effects of both medical and surgical treatment. Moreover, seizures significantly impact the quality of life, and continued seizures are associated with a poorer outcome.
Material and methods: We present the case of a young adult patient with a brain tumor-related epilepsy.
Results: A 38-year-old woman was admitted to our hospital with focal motor seizures, with impaired awareness, evolving into bilateral tonic-clonic. Her video-electroencephalogram monitoring revealed left temporo-frontal epileptiform discharges, frequently bilateral in wakefulness and sleepiness. Simple and contrasted magnetic resonance of the brain showed a lesion in the left temporal lobe. Patient began taking carbamazepine and levetiracetam, her seizures were partially controlled. A surgical resection was performed, and pathological analysis revealed anaplastic astrocytoma. Post-resection she has had a significant reduction in her seizures, and she is still taking antiepileptic drugs.
Conclusions: Patients with refractory epilepsy should be evaluated for potential epilepsy surgery. It is important to identify these patients early to limit the potential morbidity and mortality and to improve their quality of life.
Keywords: brain tumor-related epilepsy, refractory epilepsy, anaplastic astrocytoma.

Treatment of acute ischemic stroke by systemic thrombolysis combined with endovascular thrombectomy: case report

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Abstract

Background: A small number of acute ischemic stroke (AIS) patients meets eligibility criteria for systemic thrombolysis (ST) with recombinant tissue plasminogen activator, but its efficacy for large vessel occlusion is poor. Therefore, an increasing number of patients with large-vessel stroke are treated with endovascular mechanical thrombectomy (EMT).
Material and methods: We describe consequent events of our clinic's patient with AIS who underwent endovascular thrombectomy combined with thrombolytic therapy after conventional imaging – a brain non-contrast computed tomography (NCCT) and CT angiogram (CTA).
Results: A 51-year-old man was admitted in our clinic with signs and symptoms of a left middle cerebral artery (MCA) territory infarct. His National Institute of Health Stroke Scale (NIHSS) score was 22 on presentation and his brain NCCT showed left MCA M1 hyperdensity and Alberta Stroke Programme Early CT Score (ASPECTS) of 9. ST was initiated with door-needle time of 40 min and was ineffective. His CTA confirmed a left MCA distal M1 occlusion. Afterwards he successfully underwent thrombectomy, with a door-to-groin-puncture time of 120 min. His NIHSS score improved to 8 over the next 24 hours and he was discharged with NIHSS 4.
Conclusions: EMT seems to be a perfect option for patients with large-vessel stroke who did not benefit from ST. The presented case confirmed that early presentation and combined treatment with ST and EMT could be lifesaving options for patients with large-vessel stroke.
Key words: acute ischemic stroke, systemic thrombolysis, endovascular thrombectomy.

Role of nutritional and lifestyle factors on the Amyotrophic Lateral Sclerosis progression. Results from a multicenter cross-sectional study

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Abstract

Background: Amyotrophic Lateral Sclerosis is a devastating, untreatable motor neuron disease with unknown causes, but nutritional and lifestyle factors may play a role. To check this hypothesis, we conducted a multicentre cross-sectional study.
Material and methods: This study recruited 241 patients, 96 females, and 145 males; the mean age at onset – 59.9±11.8 years. According to El Escorial criteria, 74 patients were definite ALS, 77 – probable, 55 – possible, and 35 –suspected; 187 patients had spinal onset and 54 – bulbar. Patients were categorized into three groups, according to their ΔFS: slow (81), intermediate (80), and fast progressors (80).
Results: Current coffee consumers were 179 (74.3%), 34 (14.1%) were non-consumers, 22 (9.1%) – former consumers. The log-ΔFS was weakly correlated with the duration of coffee consumption (p=0.034), but not with the number of cup-years, or the intensity of coffee consumption (cups/day). Current tea consumers were 101 (41.9%), 6 (2.5%) were former-consumers, and 134 (55.6%) – non-consumers. The log-ΔFS was weakly correlated only with the consumption duration of black tea (p=0.028) but not with the number of cup-years. Current smokers were 44 (18.3%), former smokers – 10 (4.1%), and non-smokers – 187 (77.6%). The age of ALS onset was lower in current smokers than non-smokers, and the ΔFS was slightly, although not significantly, higher for smokers of >14 cigarettes/day. Current alcohol drinkers were 147 (61.0%), former drinkers – 5 (2.1%), and non-drinkers – 89 (36.9%). The log(ΔFS) was weakly correlated only with the duration of alcohol consumption (p = 0.028), but not with the mean number of drinks/day or the drink-years.
Conclusions: Our study does not support the hypothesis that coffee or tea consumption is associated with the ALS progression rate, possible minor role for smoking and alcohol drinking was suggested.
Key words: Amyotrophic Lateral Sclerosis, lifestyle factors.

Results of the cohort study of cognitive impairment associated with Parkinson's disease

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Abstract

Background: Cognitive impairment (CI) is frequent in Parkinson's Disease (PD), having particular features.
Material and methods: Sixty-five consecutive PD patients, (mean age 64.87 ± 7.69 y.o.; disease duration 50.21 ± 38.61 mo.; 48 women (43.2%), 63 men (56.8%)) underwent MoCA and Beck tests. Cognitive status was graded as: (1) normal and (2) impaired cognition.
Results: There were similar: ages (65.79 ± 7.13 vs 62.17 ± 12.21 y.o.), onset ages (61.44 ± 7.61 vs 57.00 ± 12.95 years), disease duration (49.63 ± 36.78 vs 66.00 ± 26.48) months, levodopa (574.58 ± 129 vs 249.55) and agonists doses (5.19 ± 3.02 vs 1.05 ± 0.05) and Beck scores (8.13 ± 6.21 vs 7.4 ± 3.85), in groups. CI was present in 59 (90.8%) patients; more frequent patients with cardiovascular risk factors (91.7% vs 80.0%, p > 0.05), symmetrical parkinsonism (41 pts (93.2%) vs 18 pts (85.7%), p > 0.05), and in first disease symptom bradykinesia patients (30 pts (93.8%) vs 23 pts (85.2%), p > 0.05). Upper / Lower Asymmetry Indexes (0.60 ± 0.37 vs 2.4 ± 0.97, p > 0.05) were lower in CI patients, all lower type patients (15 pts (100%) vs 18 pts (85.6%), p > 0.05) having CI. MoCA scores correlated with $UPDRS_{on}$ (r = -0.320, p <0.022), and red flags number (r = -0.590, p < 0.006).
Conclusions: CI is more expectable in akinetic, symmetric and lower type parkinsonism, also in patients with cardiovascular risk factors, with probable PD, and a more motor impairment.
Key words: cognitive impairment, Parkinson disease, cohort study.

SARS-Cov-2 associated periferal neuropathy and congenital myopathy: case report

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Abstract

Background: Association of congenital myopathy with COVID-19 – associated peripheral neuropathy is not reported. We aim to present such a case.
Material and methods: Clinical case of a 14-year-old male with history of myopathy from the age of 5 who presented with features of COVID-19-related polyneuropathy and multiple organ dysfunction syndrome.
Results: The patient was admitted with generalized muscle weakness, motor difficulties, unsteady gait, chest pain, respiratory failure. Physically – hyposthenic body type, muscle atrophy, cyanosis, shortness of breath, tachycardia, hepatomegaly. Neurologically – muscle pain on palpation, hypotonia, especially in lower limbs, distal hypoesthesia, loss of deep tendon reflexes and myopathic gait. IgG and IgM SARS-Cov-2 were elevated and the patient presented a history of fever one month before admission. The albumin and total protein were low, but serum creatine kinase, creatine kinase-MB, LDH, liver enzymes, D-dimers were elevated, as well as cerebrospinal fluid protein level. The chest CT showed fibro atelectasis of S3 and S10 segments of the left lung, pleural adhesions. Electromyography studies showed a myopathic pattern. The patient received five plasma exchange treatments and was weaned from mechanical ventilation. The treatment also included antibiotics, infusion therapy, dexamethasone, which resulted in a partial response.
Conclusions: The presented case of the association of congenital myopathy and Covid-19 associated peripheral neuropathy had a partial response to treatment. Such cases should be tailored by a multidisciplinary management team.
Key words: polyradiculoneuropathy, congenital myopathy, SARS-CoV-2, COVID-19.

Clinical features and outcome in patients with Guillain-Barré syndrome

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Abstract

Background: Guillain-Barré syndrome (GBS) is a heterogeneous group of autoimmune polyradiculopathies, in which disease biomarkers, and outcome predictors are under continuous research.
Material and methods: Thirty-three patients with GBS (12 females/21 males) aged between 24 and 73 years were assessed, using clinical data, Modified ERASMUS GBS Outcome (MEGOS) score and electromyography (EMG).
Results: The average age of onset was 52.1 ± 12 years. The mean time period before hospitalization was 15 days. Clinical symptoms at onset were areflexia (24%), paresthesia (25%), weakness in the legs (36%) and arms (22%). 15 patients (45.4%) had cranial nerves involvement, while 11 (33%) developed respiratory failure of which five (15%) required mechanical ventilation. EMG revealed myelinopathy in majority of the patients – 19 (70%), axonopathy – 6 (22%), and axonomyelinopathy – 2 (8%). 27 (81%) patients received plasmapheresis, 2 (6.06%) – plasmapheresis with immunoglobulins, and 6 (18%) received no plasmapheresis due to contraindications. Treatment outcomes were as follows: 29 (88%) patients saw improvement, 2 (6.06%) had stable disease. There were 2 (6.06%) deaths in the cohort. Mean MEGOS was 4.0 ± 2 (male 5.0 ± 2; female 4.0 ± 2). Patients with myelinopathy and axonomyelinopathy had a higher MEGOS. Hospitalization delay and higher MEGOS score correlated with more severe disease evolution.
Conclusions: Patients with delayed hospitalization, predominantly men, who had myelinopathy and mixed forms of GBS have a less favorable prognosis of the disease. Increased attention to the onset of symptoms consistent with GBS is needed in order to ensure a prompt diagnosis and hospitalization, as well as specialized treatment.
Key words: Guillain-Barre syndrome, onset symptoms, outcome, MEGOS.

Imaging aspects in Spastic Cerebral Palsy in children

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Abstract

Background: Magnetic resonance imaging (MRI) is commonly used in the investigation of children with cerebral palsy (CP). This investigation suggests hope in future therapeutic interventions of children with CP. The aim is to study the relationship between spastic CP type and brain MRI aspects.
Material and methods: In the years 2018-2020, 78 imaging results of children with spastic CP (age more than 5 years) were analyzed: 28 – tetraplegic CP (TCP), 26 – hemiplegic (HCP), 24 – diplegic form (DCP). The imaging results were analyzed by a trained specialist.
Results: Brain structural abnormalities relevant to spastic CP types were detected in 72 (92.3% [I 99.19 – 95.61], p = 0.01) children. TCP changes were detected in all children; those with DCP – at 22 (91.7% [I 97.34 – 86.06], p = 0.05); HCP – in 25 (96.2% [I 99.97 – 92.43], p = 0.01) cases. Common: ventriculomegaly (55.1%) – TCP and DCP, cerebral atrophy (53.8%) – TCP, unilateral porencephalic cerebral cyst (30.8%) – HCP; bilateral cysts (29.5%) of various localizations (cortical – 30.4% TCP and subcortical – 69.6% DCP). Other abnormalities: atrophic lesions in the basal and thalamic ganglia region (5.1%), diffuse porencephaly (2.6%), periventricular gliotic changes (17.9%).
Conclusions: Brain structural abnormalities in CP are varied and can be detected frequently by advanced imaging techniques, reflecting the relationship between CP form and characteristic imaging lesions. Early detection of brain abnormalities in children with CP may suggest the remote prognosis of the disease and the correct management of affected children.
Key words: cerebral palsy, imaging, child.

Evolution of status epilepticus in children

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Abstract

Background: Status epilepticus is defined as a neurologic emergency in which there is at least 5 minutes of continuous seizure activity or recurrent seizures with a return to baseline between seizures. The aim of this research was evaluation of clinical and etiological profile of refractory status epilepticus (RSE) among children.
Material and methods: The study was carried out between 2017 – 2021. All children have presented convulsive status epilepticus (SE), subsequently with development of RSE (refractory status epileptic). We try to identify the main characteristics of children with RSE and those without an evolution of RSE.
Results: Fifty-five children, out of whom 32 boys with SE were enrolled in the study, of which 20 children (36%) developed RSE. Central nervous system (CNS) infections were the most common causes of SE and development of RSE (51% of SE and 53% of RSE, p > 0.05). Noncompliance of antiepileptic medication served as the second cause for evolution of RSE. The overall mortality rate was 10.9%, the chances of death in case of RSE (20%) being higher than in case of SE (5.7%). The unfavorable prognosis was seven times higher in children with RSE, compared to children who developed SE (PR = 7.0; 95% CI:1.6 – 22.3).
Conclusions: In the management of CNS infections the possibility of developing RSE should be considered and promptly managed in an intensive care unit in order to reduce the risk of mortality and morbidity of this severe neurological condition.
Key words: status epilepticus, refractory status epilepticus, children.

Anxiety in epilepsy. Gender differences

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Abstract

Background: The aim of the study was to assess the prevalence of anxiety symptoms in women and men with epilepsy, and to evaluate their relationships with psychological variables: duration of the epilepsy disease, education, marital status, and urban/rural areas.
Method: In this study, 281 patients with epilepsy were evaluated: 157 women and 124 men, aged 18 – 71. Anxiety symptoms were evaluated with Hamilton Anxiety Rating Scale. The study took place at the National Center of Epileptology, Chisinau, the Republic of Moldova in 2020 – 2021.
Results: This study has demonstrated that anxiety symptoms are present in 56% of women and 35% of men. Anxiety is highlighted in 40% of women and 31% of men with higher education versus 64% of women and 36% of men with secondary education. Anxiety is present in 44% of single women, 60% – married, 70% – divorced, and 50% – widowed in comparison with men: 28% of single men, 40% – married, 33% – divorced. Anxiety is more evident in urban area – 31% of men versus 53% women in comparison with rural area 38% of men versus 59% women. With the progression of the epilepsy disease, the symptoms of anxiety are more pronounced in both men and women.
Conclusions: These results confirm that anxiety is more common in women especially in those married and divorced; psychological assessment and interventions are recommended to all patients with epilepsy, to reduce anxiety, improve the social competency and the quality of life.
Key words: anxiety, epilepsy, gender differences.

Assessment of risk factors in post-stroke cognitive impairment

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Abstract

Background: Cognitive impairment is a frequent symptom in post-stroke patients, with a prevalence range of 20% to 80%. Our study's aim was to analyze the previously reported risk factors in order to highlight predictors of a poor prognosis in post-stroke cognitive impairment. Articles containing the key words: "cognitive impairment", "stroke", "risk factors" were selected from PubMed databases. The following filters were applied: article type – meta-analysis, review, systematic review; period of time – 5 years; language – English; species – humans; age – 45 – 65+ years. 46 results were identified, but only 20 articles were selected as relevant. Analyzing identified data, we found out that the following risk factors had a strong association with cognitive impairment after stroke – in 60 – 80% of cases: increased age, low educational status, vascular comorbidities, prior transient ischemic attack or recurrent stroke, depressive illness, cerebral atrophy, white matter lesions, alcohol use. Also, we identified other risk factors with a low association – in 20 – 30% of cases with cognitive impairment after stroke: family history, genetic variants, carotid plaques, smoking, paresis**,** elevated homocysteine, low-density lipoprotein, uric acid, low triiodothyronine syndrome, anemia, decreasing serum retinoic acid level, elevated serum rheumatoid factor and matrix metalloproteinases-9 levels.
Conclusions: This literature review confirms the existence of studies with a high level of evidence on risk factors which trigger cognitive impairment in post-stroke patients. Acknowledgement of these risk factors could improve stroke management and rise these patients' quality of life.
Key words: stroke, cognitive impairment, risk factors.

Objective assesment of sympathetic electrodermal activity in patients with masticatory muscle pain

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Abstract

Background: Masticatory muscle pain is associated with autonomic disorders of different intensity; their identification leads to a more accurate diagnosis and a differentiated treatment. Currently, various scales and autonomic tests are used for this purpose, as well there are being developed neurophysiological diagnostic methods. For this purpose, electrodermal activity is being studied since the 1950s, which currently is further advancing due to modern recording and information processing technologies. The aim of the study was objective assessment of sympathetic nervous system activity (tonus, provisioning) in patients with masticatory muscle pain, with the application of the spectral analysis of electrodermal activity.
Material and methods: Thirty-four female patients with masticatory muscle pain were enrolled in the study. NeuroMEP (Neurosoft) diagnostic system was used to record electrodermal activity. For the assessment of the autonomic tone (rest) and autonomic provisioning (maxillary clenching test) there were used EDASymp, EDASympn, meanTVSymp, minTVSymp, maxTVSymp sympathetic indices, identified experimentally at the University of Connecticut (USA).
Results: The comparative analysis of the indices has shown that EDASympn and meanTVSymp are reproducible and characterize the activity of the sympathetic system during the rest and maxillary clenching. The range of values of sympathetic indices at rest/maxillary clenching were: EDASympn (0.222 – 0.668/0.360 – 0.4872 u.n.) and meanTVSymp (0.883 – 1.015/1.055 – 1.245).
Conclusions: EDASympn (normalized sympathetic component of the electrodermal activity) and meanTVSymp (index of sympathetic tone) sympathetic indices allow the objective assessment of the activity of the sympathetic nervous system, being reproducible in patients with myalgias.
Key words: masticatory muscles, myalgia, sympathetic electrodermal activity.

Anxiety and sympathetic skin responses in patients with masticatory muscle pain

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Abstract

Background: An important clinical aspect of masticatory muscle pain is its association with autonomic disorders and various mental states. Sympathetic skin response is a non-invasive approach for assessing sympathetic system function, allowing the determination of several autonomic indices (amplitudes), but their clinical interpretation is difficult. The aim of the study was to differentiate variants of sympathetic skin response and their correlations with the level of anxiety and pain intensity in patients with masticatory muscle pain.
Material and methods: There were enrolled 46 patients with masticatory muscle pain who were examined in standardized conditions with NeuroMEP (Neurosoft) for assessing sympathetic skin responses (SSR) – sympathetic amplitude (A2). There were used cutoffs for different SSR variants: 1) V1 – optimal A2 = 3.34 – 3.5 mV; 2) V2 – amplified A2 ≥ 3.51 mV; 3) V3 – diminished A2 ≤ 3.33 mV. There were used clinical indices: GAD7 questionnaire (anxiety level), CPI index (Characteristic Pain Intensity).
Results: There were observed the following variants in patients with masticatory muscle pain: V1 – 16 patients (34.78%); V2 – 25 patients (54.35%); V3 – 5 patients (10.87%). Patients with V2 variant had higher levels of anxiety (mean GAD7 score = 17.1): 1) severe anxiety – 17 patients (68%); 2) moderate anxiety – 7 patients (28%); 3) low anxiety – 1 patient (4%). V2 variant patients also had higher mean CPI values (54.1 – high intensity pain).
Conclusions: There were observed different variants of sympathetic response in patients with masticatory muscle pain, the amplified variant correlated with more serious clinical indices (higher anxiety and pain intensity).
Key words: sympathetic skin response, masticatory muscle pain, anxiety.

Prevalence and clinical peculiarities of Multiple Sclerosis in the Republic of Moldova

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Abstract

Background: Multiple sclerosis (MS) is a chronic autoimmune, inflammatory, neurodegenerative disease of the central nervous system and the most common disabling neurological disease in young adults. The disease natural evolution is almost not affected by the use of the disease modifying drugs. In this regard, the investigation of MS epidemiology in the Republic of Moldova is of raising importance. The purpose of this study is to update the information about the prevalence and demographic characteristics of MS at the country level as well as to determine the onset symptoms, clinical peculiarities and disability ratio.
Material and methods: The study included patients with clinical and imagistic defined forms of MS according to the McDonald 2017 criteria. Data collection included records analysis of MS patients diagnosed and treated by the neurologists from all regional hospitals at the country level, archives investigation of republican diagnostic centers as well as the analysis and assessment of the administrative records.
Results: As per December 31st, 2019, in the researched area of the country, 1542 MS patients were registered. Thus, a crude estimated prevalence is 34.0 per 100000 inhabitants (95% CI: 32.8 – 37.1). The female to male ratio was 1.9:1, with the mean age 42.0 years. The clinical peculiarities at the onset of the disease for various clinical subtypes were analyzed in relation with clinical spectrum of the first attack, sex distribution and disability ratio.
Conclusions: The estimated prevalence of multiple sclerosis in the Republic of Moldova is 34.0 per 100000 inhabitants. This proved to be lower than in European countries. More studies are needed for knowledge gathering of epidemiological and clinical data concerning MS prevalence in the country. Thus, the creation of the MS Registry of the Republic of Moldova is of mandatory importance.
Key words: multiple sclerosis, epidemiology, prevalence.

Four years' experience of participation of the Republic of Moldova in the RES-Q Registry

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Abstract

Background: The Republic of Moldova is a member of the Registry of Stroke Care Quality (RES-Q) project, initiated by the European Stroke Organization in 2016. The aim of this study was to analyze the in-hospital stroke care indicators for a period of 4 years in Moldovan hospitals according to the data of the RES-Q registry.
Material and methods: 15 hospitals treating stroke patients participated in the study. Each hospital registered at least 30 consecutive stroke patients for at least 1 month per year. The period of patients' data collection included the period from 2017 to 2020. The RES-Q statisticians processed the online data collection.
Results: The data of 2085 patients were analyzed with the mean age of 68 years, 51% were men. CT image was performed for 84% of patients and only 48% of them received it in the first hour after admission. The rtPA and/or thrombectomy was applied to 3% of all stroke patients. The carotid artery imaging was performed in 40% of cases. The in-hospital stroke mortality was 18%, mainly in tertiary hospitals. At discharge, 96% of patients were prescribed antiplatelet drugs, 84% – antihypertensive, 41% – statins, and 45.5% – anticoagulants for patients with atrial fibrillation.
Conclusions: Four-year monitoring of the in-hospital stroke care indicators revealed important deficiencies in the process of diagnosis and treatment of the acute stroke, mainly in rural hospitals. Immediate measures are needed to reorganize the stroke care service in Moldova.
Key words: stroke, registry, in-hospital quality indicators.

The impact of the pandemic on the in – hospital stroke quality indicators based on the RES-Q Register

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Abstract

Background: Coronavirus pandemic (COVID-19) has influenced not only global morbidity statistics, but also healthcare ones in relation to other diseases, including stroke. The aim of the study was to analyse the in-hospital quality indicators in patients with acute stroke during the pandemic based on the data of the RES-Q (*Registry of Stroke Care Quality*).
Material and methods: A retrospective analysis of all consecutive acute stroke patients from the Institute of Neurology and Neurosurgery of the Republic of Moldova was performed. The data collection included 1 month (March) comparative analysis in 2019 and 2020 of online registration, processed by the Statistic Department of the RES-Q platform.
Results: The study included 133 patients: 70 – from 2019 and 63 – from 2020, the mean age 68 ± 2 years, the mean NIHSS – 9 p. In 2020 there were more hospitalized women (57% vs 45%), more patients with haemorrhagic stroke (31% vs 25%), those needed treatment in the Intensive Care Unit (ICU) (41% vs 33%) and put on ventilator (29% vs 13%), and increased number of deceased (26% vs 20%). The number of brain CT imaging (99% vs 98%) and thrombolysis performed (3% vs 4%) did not show major differences.
Conclusions: The quality of the in-hospital stroke care was not dramatically affected by the pandemic. The delay in seeking medical care increased the number of patients requiring ICU placement and resulted in a higher number of deaths.
Key words: stroke quality indicators, register, COVID-19.

Epidemiological data on Myasthenia gravis related to SARS-COV-2 infections in the Republic of Moldova

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Abstract

Background: The aim of this study is to provide an estimated incidence of Myasthenia Gravis (MG) and to describe the pattern of the disease in the Republic of Moldova before and during the COVID-19 pandemic.
Material and methods: Multiple epidemiological sources were explored prospectively and retrospectively. The date the SARS-CoV-2 infection (March 11, 2020) was declared a pandemic was used as a reference and the data gathered the previous and the next year were compared and analyzed.
Results: During the time March 11, 2020 – March 11, 2021 – 28 new cases of MG were ascertained yielding a crude incidence rate of 10.6 per million persons-years (95% CI 6.7 – 14.5), 13.1 in women (95% CI 7.1 – 19.1) and 7.8 in men (95% CI 3 – 12.6) (F:M ratio of 1.6:1). The mean age of onset was 49.8 years (43.2 in women and 62.7 in men). Only 5 thymectomies were performed. Two deaths of previously diagnosed MG patients were registered, including one associated with the SARS-CoV-2 infection. In the time period March 11, 2019 – March 10 ,2020 – 26 new cases of MG were identified yielding a crude incidence rate of 9.67 per million persons-years (95% CI 5.96 – 13.38), 12.11 in women (95% CI 6.41 – 17.81) and 7.01 in men (95% CI 2.51 – 11.51) (F:M ratio of 1.7:1). The mean age of onset was 45.6 years. 17 thymectomies were performed.
Conclusions: During the COVID-19 pandemic, the incidence of MG was not significantly higher than the year before. However, patient management and hospital care have been markedly impacted.
Key words: myasthenia gravis, epidemiology, prevalence.

Brain structural integrity and connectivity in Multiple Sclerosis patients with epilepsy

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Abstract

Background: Seizures and epilepsy in multiple sclerosis (MS) have been related to grey matter (GM) pathology. However, the link between epilepsy occurrence and GM alterations in MS is still poorly understood. Hence, we aimed to investigate the integrity and network architecture of brain GM compartment in MS patients with concomitant epilepsy.

Material and methods: In 30 MS patients with epilepsy (MSE; age 41 ± 15 years, 21 females), 60 MS patients without epilepsy (MS; 41 ± 12 years, 35 females), and 60 healthy subjects (HS; 40 ± 13 years, 27 females), 3T MRI was acquired and served to quantify the lesion loads, volumes of cortical, subcortical, and hippocampal structures and to reconstruct the GM networks. The topological organization of GM networks was assessed by applying the graph theoretical analysis.

Results: The MSE patients compared to MS presented significantly higher lesion loads within the medial temporal cortex and hippocampal subfields (all $p < 0.05$). Similarly, lower volumes of temporal and parietal lobe cortices were attested in MSE patients compared to both MS and HS (all $p < 0.05$). On hippocampal regional level, lower volumes of hippocampal tail and presubiculum were detected in both MSE and MS patients compared to HS (all $p < 0.05$). Network architecture in MSE patients was characterized by a more clustered and assortative network topology compared to both MS and HS (all $p < 0.05$).

Conclusions: High lesion load, altered integrity of mesiotemporal GM structures, and network reorganization are associated with epilepsy occurrence in MS.

Key words: multiple sclerosis, epilepsy, structural integrity, connectivity.

Subarachnoid hemorrhage associated with COVID-19 infection: case series report

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Abstract

Background: Subarachnoid hemorrhage is a sudden bleeding in the subarachnoid space, representing 5-10% of all strokes. Several reports of Covid-19 infection and subarachnoid hemorrhage have been published. The objective of the study was to analyze subarachnoid hemorrhage in patients with COVID-19.

Material and methods: Retrospective study of all electronic medical records of patients with COVID-19 treated between March 2020 and May 2021. The subarachnoid hemorrhage was identified in 7 patients out of 204.

Results: The study sample included 3 men (42.9%) and 4 women (57.1%) with altered mental state, convulsions, severe headache, nausea and focal signs at the presentation. In one patient hemorrhage occurred 4 days after Covid-19 detection; in 5 patients the infection and hemorrhage were confirmed at admission, and 1 patient was diagnosed with SARS – Cov-2 during hospitalization. There was a marked increase in inflammatory markers (leukocytosis, increased ESR), the presence of pulmonary lesions in 8 pts. Angio CT revealed the presence of aneurysms in 5 patients. Most underwent surgery: by clipping – 6 patients, embolization of the anterior communicating artery – 1 patient and one attempt to ligate the left internal carotid artery. Out of 7 patients – 3 died and 4 were discharged.

Conclusions: The subarachnoid hemorrhage can occur both at the initial stage of COVID-19 infection and later after the treatment. The association of infection in patients with subarachnoid hemorrhage leads to pulmonary involvement with inflammatory response and worsening of neurological status with poor prognosis.

Key words: subarachnoid hemorrhage, COVID infection-19, tomography, angiography.

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Physician`s knowledge, attitudes and practices regarding the management of major cognitive disorders in the Republic of Moldova

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Abstract

Background: The number of people living with dementia worldwide is increasing exponentially. It is estimated to be doubled by 2030 and tripled by 2050. The management of cognitive disorders is a developing field in the Republic of Moldova. The aim of the study was the analysis of knowledge, attitudes and practices of physicians regarding patients with major cognitive impairment.
Material and methods: An online survey that included 24 questions about physicians' knowledge, attitudes and practices in the diagnosis, treatment and barriers to health care of these patients was spread through social media.
Results: 122 doctors (82.8% of females and 17.2% of males) completed the survey; 45.9% of the respondents are licensed neurologists, 25.4% psychiatrists, 13.1% family doctors, 9% psychologists, 5.6% other specialties. In their activity 36% of the respondents consult (daily) patients with cognitive disorders, and 63.9% – weekly. 54.1% of the participants mentioned the lack of social support for patients and families, 47.5% – difficulty in referring to other specialists, 45.9% – communication with patients, 36.1% had difficulties in diagnosis, 30.3% – communication with relatives, 29.5% – diagnosis and treatment of comorbidities, 28.7% – planning treatment. During the consultation 70.5% of doctors measure cognitive decline with dedicated tools and 55.7% knew a national or international guideline for dementia management. 38.5% of the participants mentioned that dementia patients are time and resource consuming and difficult to manage.
Conclusions: The study revealed that physicians are insufficiently prepared to manage dementia patients in the Republic of Moldova. The insufficient knowledge, the lack of diagnostic skills, deficient communication, inadequate plan management and personal negative attitude to such patients are the major pitfalls depicted.
Key words: cognitive disorders, dementia, KAP study.

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Medication overuse in patients with headache during the COVID-19 pandemic

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Abstract

Background: Medication overuse in patients with headache is the most important risk factor for secondary headache. According to ICHD criteria, the use of analgesics or triptans for more than 10 days / month and combined analgesics > 15 days / month, for more than 3 months is considered medication overuse. The aim of the study was to analyze the use of analgesics in patients with headache in the context of the COVID-19 pandemic and to establish the presence of medication overuse.
Material and methods: An online survey, launched through social media channels, was completed by the patients with headache and COVID-19 disease. Validated questionnaire gathered data on: demographics, COVID infection, the characteristics of headache before, during and after COVID-19 infection, abortive headache medication, behavior, sleep disorders, anxiety and depression.
Results: The study included 131 participants: 14 men (10.6%) and 117 women (89.31%), mean age – 37 ± 8.16 years. Before COVID-19 infection participants used analgesic drugs 3.67 ± 2.96 days / month, during the COVID-19 infection month – 10.44 ± 8.81 days / month, and in the post-COVID period – 12.27 ± 9.73 days / month. From the study group 9.1% of patients had medication overuse before COVID-19, during the Covid-19 period – 43% and after the COVID-19 – 33%.
Conclusions: The study proved increased analgesics consumption during and after the COVID-19 infection, possibly due to the association of a secondary headache, namely headache attributed to infection. Other factors will be elucidated in further research.
Key words: headache, COVID-19 infection, medication overuse.

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Clinical and laboratory biomarkers to predict haemorrhagic transformation of ischemic stroke: first data of a prospective study

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Abstract

Background: Haemorrhagic transformation of ischemic stroke represents the bleeding in the infarcted areas of the brain after the cerebrovascular accident. The aim of the study was to analyse the clinical parameters and the blood-brain barrier integrity biomarkers as prognostic factors for haemorrhagic transformation of ischemic stroke.
Material and methods: 80 patients with acute ischemic stroke, admitted within 24h from onset to the Institute of Neurology and Neurosurgery (Chisinau) in the period from 2018 to 2019 were prospectively analysed. The admission stroke severity, clinical risk factors, laboratory parameters were registered and venous blood for matrix metalloproteinases 2 and 9 measurement was collected. All patients were investigated by brain computer tomography at admission and on day 3, and/or at clinical deterioration for haemorrhagic transformation detection. Discharge status and 3-months follow-up was done to assess the functionality of the patients by the modified Rankin scale value.
Results: Haemorrhagic transformation occurred in 11 out of 80 analysed patients, with a higher proportion of women (72.7% vs 52.1%), older age (72.27±3.08y vs 70.66±1.25), and higher admission NIHSS score (15.54 vs 11.23). Both metalloproteinases were slightly increased in the patients with haemorrhagic transformation. Discharge functionality status was lower in the study vs control group (5 vs 3.68) with similar evolution at 3-months follow-up (4.8 vs 3.12).
Conclusions: Preliminary data analysis shows correlation between clinical and laboratory biomarkers and the risk of haemorrhagic transformation of ischemic stroke. More patients are required to be enrolled and studied for the statistically significant results.
Key words: ischemic stroke, haemorrhagic transformation, stroke biomarkers.

Guillaine-Barre syndrome COVID-19 associated

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Abstract

Background: Guillain-Barré syndrome (GBS) affects about 100 000 people every year worldwide with the incidence rates of 0.8–1.9 cases per 100000 people annually. A number of case series have reported GBS in association with COVID-19 infection.
The aim of our study was to analyse all cases of GBS COVID-19 associated, admitted in a tertiary level neurological hospital.
Material and methods: 3 cases with GBS associated with SARS-COV-2 infection were selected. The diagnosis was proved by electromyography (EMG) exam and lumbar puncture.
Results: Out of 3, there was 1 female and 2 males with GBS. The registered age was 46, 62 and 67 y.o. Patients developed the disease in 10, 15, and 30 days after the COVID-19 infection. The interval from onset to nadir was 6-9 days. Patients received 5, 10 and 11 points on mEGOS (Modified Erasmus GBS Outcome Score) at day 7 of admission. All patients developed flaccid tetraparesis and "socks" and gloves" sensation loss. Cranial nerves involvement was registered in 2 cases and 2 patients had autonomic disfunction. On EMG, 1 patient was confirmed with axonal polyneuropathy and another 2 with demyelinating polyneuropathy. One patient needed mechanical ventilation. All patients received plasma exchange and 1 benefitted from intravenous immunoglobulins. 1 patient died and other 2 received 4 and 5 points mRS at discharge.
Conclusions: GBS COVID-19 associated does not substantially differ from that triggered by other environmental factors.
Key words: Guillain-Barre Syndrome, SARS-COV-2, demyelinating disease.

Sleep disorders in post-stroke children

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Abstract

Background: Current studies highlight the importance of sleep in brain tissue recovery and the generation of new neural connections after a stroke. The aim of the study is to identify sleep disorders in post-stroke children and their impact on the results of neurological recovery.
Material and methods: 53 children (31 boys) aged 3 – 12 years post-stroke (after a period > 6 months). Sleep disorders were assessed using the *Sleep Disturbance Scale for Children (SDSC)* and neurological deficiencies – *Pediatric Stroke Outcome Measure (PSOM)*. The SPSS program was used for statistical analysis.
Results: According to the SDSC standardized T score, 73.6% of children had poor sleep quality and 26.4% had good sleep quality. In the group of children with sleep disorders, 59% had disorders of initiation and maintenance of sleep, 28.2% – excessive daytime sleepiness, 20.5% – sleep breathing disorders. According to the scores accumulated by the PSOM assessment, 83% of children had moderate or severe deficits and 17% had good results. The Spearman correlation coefficient between SDSC and PSOM score indicated a strong positive correlation (Spearman's rho correlation 0.82 ($p < 0.001$), and strongly correlates with neurological deficits.
Conclusions: Sleep disorders are common in post-stroke children. In our study, 73.6% of children presented sleep disorders, which strongly correlated with neurological deficits. Management of post-stroke sleep disorders may improve neurological and long-term recovery outcomes. Awareness of the importance of sleep for post-stroke recovery should be disseminated to medical and non-medical caregivers of these patients.
Key words: stroke, children, disorders, sleep, recovery.

Multiple ischemic stroke syndrome mimicking a tick-bite encephalitis: a case report

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Abstract

Background: Despite the advanced diagnostic procedures nowadays, doctors remain frequently challenged with difficulties in diagnosis establishment. Some features of the patient's history mislead even an experienced doctor.
Material and methods: case report of atypical stroke.
Results: A case of a 66-year-old man admitted to the Institute of Neurology and Neurosurgery from a regional hospital with severe headache, fever 38.5 C, vertigo, paresis in the left limbs, dysarthria. The patient periodically presented blood pressure spikes and generalized shivers, which hardly responded to hypotensive and antipyretic drugs.
Because of the high fever, history of tick bite 2 months before the admission, absence of pathological imaging on the CT scan on admission, the patient was primarily diagnosed with Encephalitis. Lumbar puncture, blood cultures and antibiogram were performed with no pathological findings. The MRI performed on the third day after admission showed multiple sub-acute ischemic zones. Echo-CG discovered an unclear formation in the projection of the anterior mitral valve, myxoma suspected. Patient was stabilized in Neurology Department and afterwards transferred to the Cardiology Department where he was diagnosed with infectious endocarditis.
Conclusions: Concomitant ischemic strokes should induce the suspicion of the underlying cardiac organic pathology. Echocardiography shall be considered for all patients with stroke; even if other risk factors are depicted. In order to prevent future strokes it is important to take all the risk factors under control.
Key words: stroke, endocarditis, encephalitis.

Neurological complications in children with COVID-19 infection

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Abstract

Background: Many studies suggest a mild course of COVID-19 infection in children. Severe complications with nervous system involvement associated with thrombotic and neurodestructive phenomena are reported. The aims of the study were to analyze the type of neurological complications associated with COVID-19 infection in children and to establish any age-related correlations.
Material and methods: A group of 67 children diagnosed with SARS-CoV2 was analyzed. The nervous system involvement was assessed by various diagnostic methods, such as EEG, CT and / or brain MRI, psychological counseling. The SPSS program was used for statistical analysis.
Results: Nonspecific neurological complications were registered in 40 cases (53.7%). They included headache – 35%, myalgias – 22.5%, anosmia – 17.5%, behavioral disorders – 12.5%, neurotic anorexia – 7.5%, mental disorders – 5%. Specific neurological complications were registered in 27 cases (46.3%), out of which: leukoencephalitis – 25.9%, Status epilepticus – 14.8%, toxic encephalopathy – 14.8%, cerebellitis – 11%, stroke – 11%, polyradiculoneuropathy – 7.4% , uncontrolled epilepsy – 7.4%, inferior flaccid monoplegia – 1 case (3.7%), transverse cervical myelitis – 1 case. Combined pathologies (leukoencephalitis with mixed stroke and venous sinus thrombosis, impaired vision) were registered in 3 cases. Severe cases were predominantly found in young children – 19 (28.4%). Severe neurological consequences were registered in 17 children (25.4%).
Conclusions: The SARS-CoV 2 virus affects the CNS in children and can sometimes begin with isolated CNS lesions. Young children are at higher risk of developing seizures, encephalopathy and other severe complications from SARS-CoV-2 infection. Further studies on COVID-19 infection are needed to elucidate the frequency of infection and disease forms in children population.
Key words: children, nervous system, complications, infection, Covid-19.

Drug-resistant epilepsies in children: clinical case

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Abstract

Background: Refractory epilepsy is estimated to affect 10-20% of children diagnosed with epilepsy. The impact of drug-resistant epilepsy can have a profound effect on education abilities, cognitive functioning presiding over intellectual disabilities, psychiatric comorbidity, physical injury, sudden death in epilepsy and poor quality of life. Various predictors of drug resistance have been identified; however, the exact prediction factor remains a challenge. The aim of the study is to present a case of drug-resistant epilepsy case with polymorphic seizures and various electroencephalographic video patterns.
Material and methods: observational study of the clinical case of drug resistance in children.
Results: The clinical case of the child with drug-resistant epilepsy, manifested by polymorphism crisis was confirmed by the video EEG monitoring. The 3.0T brain MRI epilepsy protocol revealed the structural thinning of the white matter of the cerebral hemispheres, periventricular cystic defects and diffuse periventricular gliosis changes with diffuse enlargement of the ventricular and cisternae cerebral systems and bilateral reduction of hippocampal areas, atrophic type. Treatment of the child included ACTH, Valproic acid, Levetiracetam, Perampanel, but freedom from seizures was not achieved. The prognosis remained reserved.
Conclusions: despite the antiepileptic drug treatment performed according to ILAE guidelines, the child continues to develop polymorphic epileptic seizures. The drug-resistant epilepsy is dependent on the child's age, type of seizures, electroencephalographic appearance, the presence of structural changes in the brain.
Key words: drug-resistant, epilepsy, child, refractory epilepsy.

Obesity as a risk factor for stroke in the population of the Republic of Moldova

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Abstract

Background: Obesity is a risk factor for various cardiovascular diseases, including stroke, which can be efficiently prevented. Several studies have evidenced abdominal obesity as an independent risk factor for stroke, being a stronger predictor of stroke than the body mass index. The study aims to explore the relationship between obesity and other stroke risk factors in the general population of the Republic of Moldova.
Material and methods: In November 2015, was initiated an epidemiological study in the population of the Republic of Moldova. The study protocol included: questionnaire, clinical examination, electrocardiography, laboratory examinations, and Doppler/Duplex ultrasound of the carotid arteries.
Results: In the study were included 1274 subjects (mean age 47.9 ± 13.6 years), among which 757 (59%) women and 517 (41%) men. The most common identified risk factors were abdominal obesity in 938 (74%), dyslipidemia in 758 (59%), and general obesity of different degrees in 508 (40%) subjects. Abdominal circumference significantly correlated with the systolic ($r = 0.44$, $p < 0.001$) and diastolic ($r = 0.46$, $p < 0.001$) blood pressure, body mass index ($r=0.84$, $p<0.001$), and uric acid ($r=0.42$, $p<0.001$). Body mass index significantly correlated with the systolic ($r = 0.41$, $p < 0.001$) and diastolic ($r = 0.39$, $p < 0.001$) blood pressure, abdominal circumference ($r = 0.84$, $p < 0.001$), and uric acid ($r = 0.33$, $p < 0.001$).
Conclusions: Dyslipidemia, abdominal and general obesity were the most commonly identified modifiable risk factors. Abdominal and general obesity were significantly associated with other stroke risk factors. Prevention of obesity and weight reduction need a greater emphasis in stroke prevention programs.
Key words: stroke, stroke prevention, obesity.

Acute disseminated encephalomyelitis with bilateral optic nerve involvement

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Abstract

Background: Acute disseminated encephalomyelitis (ADEM), possibly demyelinating is an acute, rapidly progressive autoimmune process characterized by CNS demyelination (frequently associated with involvement of optic nerves) due to immune-mediated inflammation, which requires rapid diagnosis and selection of appropriate early treatment. The aim of the study was to present an unusual case of ADEM with bilateral involvement of optic nerves.
Material and methods: A case study presentation.
Results: Case report study of a 47-year-old man presented with progressive loss of vision in both eyes, numbness in the upper and lower limbs, static and gait disorders, urinary retention. The clinical onset was preceded by a Covid-19 infection 3 weeks before presentation. ENG demonstrated sensitive axonal polyneuropathy, brain MRI – demyelination in left frontal lobe area; cervical and thoracic contrast MRI – without pathological changes, visual evoked potentials results suggestive of prechiasmic demyelinating involvement on the right side, lumbar puncture – impossible to perform, ophthalmological examination – neuroophthalmopathy of unknown etiology, anti-MOG, anti-AQP4 antibodies – negative. Progressive evolution of the disease, following the first-line treatment (Prednizolon 500 mg, N8) and plasmapheresis. Home discharge with second-line treatment with Azathioprine 50 mg without positive dynamics.
Conclusions: The presented case of ADEM proved no therapeutic effects to plasmapheresis and immunosuppressive treatment in spite of its autoimmune pathogenesis. Other therapy options to be considered: mofetil mycophenolate, IV IG, calcineurin inhibitors or other immunomodulatory agents.
Key words: encephalomyelitis, demyelination, antibodies, immunotherapy.

Insular cortex and epilepsy paradigm. Literature review

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Abstract

Background: The insula, first described in 1786 by Felix Vicq d'Azyr, later renamed Reil's island in 1809, was described by Clark as the fifth brain lobe in 1896. Initially considered an isolated lobe, belonging to the autonomic nervous system, it later proved to have broad anatomical and functional connections with brain structures. The relevant terms' combination [insula OR insular cortex] AND epilepsy was searched on PubMed database. The following filters were applied: publication date – 21 years, species – humans, age of subjects – 19+, language – English. Out of 170 identified results only Reviews (17), Retrospective studies (6), Case Reports (5) and Books (1) were analyzed (total – 27 papers). The insular cortex is a true anatomical hub for integration, with high connectivity to an extensive network of brain regions, and has a variety of functions. Insula has three main propagation pathways in the epileptogenic network, respectively, insular epilepsy can "imitate" other types of seizures: frontal hypermotor, temporal focal motor with oroalimentary automatisms or parietal focal somatosensory seizures. Insular seizures have a polymorphic semiology: from major symptoms, with insulo-opercular semiology-somatosensory manifestations, and pseudo-frontal semiology with hypermotor seizures, up to minor symptoms.

Conclusions: Although insula has a variety of functions and it is a part of epileptogenic networks, it remains an enigma to many clinicians to this day, and seizures with insular onset can mimic other types of epileptic seizures. Currently there is a need to improve the recognition and understanding of the semiology of insular seizures.

Key words: insula, insular epilepsy, insular seizures.

Arteriovenous malformations embolization in the modern era: case series report

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Abstract

Background: Cerebral arteriovenous malformations are complex high-flow lesions that can result in devastating neurological injury when they hemorrhage. Embolization for cerebral arteriovenous malformations has evolved in the last decade with evolution in both equipment and material. Endovascular interventions within arteriovenous malformations may include curative exclusion of arteriovenous malformations from circulation, embolization adjuvant to resection or radiation therapy, targeted closure of a previously identified bleeding site as well as palliative embolization. Fortunately, care by a multidisciplinary team experienced in the comprehensive management of arteriovenous malformations can offer excellent results in most cases.

Material and methods: We report the technical and management outcomes of our first cases of cerebral arteriovenous malformations treated with embolization. The clinical, angiographic, treatment, and outcome variables of consecutive cerebral arteriovenous malformation cases, treated with curative embolization between September 2019 and April 2021 in our center were retrospectively analyzed.

Results: In 12 patients, 12 arteriovenous malformations were identified. Fourteen embolization sessions were done. No cases of early hemorrhage after embolization occurred. All the patients were discharged at grade below 2 mRS. Angiographic cure was achieved in 2 patients (17%). The average size reduction was 80 %.

Conclusions: Embolization is a critical component of the multimodality treatment of cerebral arteriovenous malformations. It is clear that many arteriovenous malformations cannot be safely cured without the judicious use of this modality. In addition, embolization could serve as a curative option for arteriovenous malformations treatment with accepted morbidity and mortality.

Key words: arteriovenous malformation, embolization, endovascular.

Internal carotid artery stenting for secondary prevention of stroke: case series study

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Abstract

Background: Internal carotid artery atherosclerosis accounts for an estimate of 15 – 25% of ischemic strokes. Carotid revascularization techniques have proven useful in reducing the incidence of ischemic stroke. Nowadays, carotid artery stenting is a basic treatment for carotid stenosis.
Material and methods: The study represents a series of 60 consecutive symptomatic patients who underwent carotid stenting for critical carotid stenosis between August 2019 and April 2021. All the procedures were performed in Institute of Neurology and Neurosurgery. Main outcomes like morbidity and mortality rates at 30 days post procedure; repeated ischemic stroke in the territory of stented artery; and common complications were registered.
Results: All the patients were initially evaluated with an angiographic study (CT angio or angiography) for planning the intervention. The patients were operated under conscious sedation and with distal embolic protection. The design of the stents was chosen according to the vascular anatomy of carotid bifurcation. In our case series of patients, we did not register major complications during, or in first 30 days after the procedure. One patient had a hyperperfusion syndrome, which was resolved with careful arterial tension monitoring.
Conclusions: Carotid stenting is a safe and efficient procedure, with low periprocedural complications and good outcomes in correctly selected patients. Due to its minimal invasiveness, in the future it may become first choice procedure in the treatment of carotid artery stenosis.
Key words: ICA stenosis, stenting, stroke, atherosclerosis.

Myoclonic seizures and the frontal lobe

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Abstract

Background: Recent studies suggest a presumed focal origin of myoclonic seizures. In the current study, we aimed to appreciate the cortical sources of the interictal generalized discharges examining patients with myoclonic seizures using high-density EEG (HD-EEG).
Material and methods: In this study, 40 patients (mean age ± standard deviation: 25 ± 7 years; 14 males) with myoclonic seizures were included. All participants were scanned with a 3T MRI machine and 256-channel EEG recording. For spatio-temporal source reconstruction, LORETA (low resolution brain electromagnetic tomography) solution was applied.
Results: In all 40 patients, the electric sources of interictal generalized discharges were detected in the frontal lobe. In 17 (42%) patients the origin of discharges was in the middle frontal gyrus (Brodmann Area (BA)-9 in 7 patients, BA-10 in 3 patients, BA-6 in 4 patients and BA-8 in 3 patients). In 13 (33%) patients the origin was identified in the superior frontal gyrus (BA-6 in 9 patients, BA-10 in 3 patients and BA-8 in 1 patient). In 10 (25%) patients the source was localized in the inferior frontal gyrus (BA-11 orbital part in 8 patients and BA-46 in 2 patients).
Conclusions: HD-EEG data suggest that myoclonic seizures are not truly generalized seizures in the sense of global activation of the cortex, but rather restricted networks of cortex are involved in the discharges and primarily recruit the frontal lobe networks.
Key words: myoclonic seizures, frontal lobe, high-density electroencephalography.

Headaches in the context of the COVID-19 pandemic: preliminary results of a national survey

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Abstract

Background: Headache in the context of the COVID-19 pandemic is a largely discussed topic being divided into a pre-infection headache, headache attributed to COVID-19 infection, and post-COVID headache. The aim of the research was to analyze the evolution of headache syndrome in patients who have experienced COVID-19 infection.
Material and methods: An online survey was conducted in people with COVID-19 and headache using a validated and ethically approved questionnaire and data were collected for 3 months (February - May 2021) on demographics, comorbidities, clinical signs of COVID-19 infection, headache before, during, and after COVID-19 infection, signs of anxiety, depression and sleep disorders.
Results: The study showed that half of the respondents had different forms of headache before the COVID-19 infection. During the period of infection with Sars-Cov-2 – 91% of respondents experienced headaches attributed to COVID-19, which were intense, generalized, associated with vertigo, nausea, autonomic signs, pronounced asthenia (80%), and pain with another localization (85.5%). Persistent headaches after COVID-19 were reported by 62.7% of respondents and 16.7% of them – severe forms.
Conclusions: The headache attributed to COVID-19 infection was prevalent in the presented group being intense and associated with pronounced asthenia. The percentage of patients with persistent headaches in the post-COVID period is worryingly high which increases the degree of functional disability of patients, individual and social burden.
Key words: headache, COVID0-19, survey, post-COVID.

Clinical characteristics of primary headaches in Moldovan adolescents

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Abstract

Background: Accurate diagnosis of primary headache types is very important for correct prophylaxis and treatment, but this is sometimes complicated in the adolescence due to similar clinical features of migraine (MG) and tension-type headache (TTH). The aim of this study was to evaluate the specific clinical characteristics of MG and TTH in adolescents in the Republic of Moldova.
Material and methods: We studied 1486 adolescents (10 – 19 y.o.) diagnosed with primary headache.
Results: Regardless of the type, the frequency of headaches was higher in girls ($p < 0.001$) without difference according to age ($p = 0.395$) and residence ($p = 0.003$) criteria. The duration of headache was higher among girls, in late adolescence and from urban area ($p < 0.001$). The pain intensity was significantly higher in MG ($p < 0.001$), in late adolescence and in urban area ($p < 0.001$). The pain pressure feature was characteristic for over 60% of adolescents with both types of primary headache (MG – 60.5%, TTH – 68.5%). Bilateral pain was a specific characteristic for both types of headaches, but its prevalence was significantly higher in TTH (30.3% vs 55.9%, $p < 0.001$). Among the symptoms that may be associated with headache, a common feature for both types of primary headache was phonophobia (MG – 85.4%, TTH – 72.8%, $p < 0.001$).
Conclusions: During adolescence, especially in 10–14 y.o. adolescents, MG and TTH have similar characteristics, causing difficulties in differentiating these two types of primary headaches.
Key words: migraine, tension-type headache, adolescents, clinical features.

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Cerebrovascular disease associated with Parkinson's disease in Moldovan cohort study: preliminary results

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Abstract

Background: Parkinson's disease (PD) is frequently associated with brain vascular lesions (BVLs). Studies suggest that the latter may influence the severity of the disease.
Material and methods: BVLs on MRI were determined in 78.4% of 111 consecutive PD patients (mean age 64.87 ± 7.69 y.o.; disease duration 50.21 ± 38.61 mo.; 48 women (43.2%), 63 men (56.8%)).
Results: White matter lesions were present in 73 patients (pts.) (65.77%): 61 pts. (54.95%) – deep white matter, 46 pts. (41.44%) – periventricular white matter, and 41pts. (36.94%) – both locations. Lacunes were determined in 19 pts. (17.12%), cerebral fissures deepening – 52 pts. (46.85) %), perivascular spaces dilation – 34 pts. (30.63%), ventricular system dilation – 29 pts. (26.13%). Patients with and without BVLs had similar ages (65.43 ± 7.64 vs 61.01 ± 7.64), ages at PD onset (60.95 ± 8.09 vs 56.01 ± 8.59) and disease duration (49.98 ± 36.76 vs 60.01 ± 52.31). They had insignificantly higher Beck (7.26 ± 5.62 vs 6.86 ± 4.34), $PDQ3_{(Parkinson's\ Disease\ Questionnaire)}$ (59.71 ± 20.38 vs 51.94 ± 27.69) and $NMS_{(Non\ Motor\ Symptoms)}$ (75.06 ± 45.21 vs 71.67 ± 26.35) scores; and lower $MoCA_{(Montreal\ Cognitive\ Assessment)}$ scores (21.92 ± 4.25 vs 22.38 ± 4.57). QRISK3 scores (19.68 ± 16.16 vs 12.90 ± 6.58) and levodopa equivalent daily dose (639.98 ± 223.05 vs 439.69 ± 404.87) were significantly higher in patients with BVLs.
Conclusions: Brain vascular lesions were common in our PD patients, and were associated with higher QRISK3 scores, as well as with higher levodopa equivalent daily dose, suggesting more disease severity.
Key words: Parkinson's disease, brain vascular lesions, magnetic resonance imaging.

Vascular risk factors in patients with Parkinson's disease. Motor and cognitive aspects

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Abstract

Background: Vascular risk factors (VRFs) are common in Parkinson's disease (PD) patients. Studies suggest the association of VRFs with motor severity and cognitive decline in PD.
Material and methods: In 111 consecutive PD patients (mean age 64.87 ± 7.69 y.o.; disease duration 50.21 ± 38.61 mo.; 48 women (43.2%), 63 men (56.8%)) VRFs were assessed by $QRISK3_{scale}$.
Results: VRFs were present in 106 (95.5%) patients: $HBP_{(High\ Blood\ Pressure)}$ – 74 pts. (66.7%), dyslipidemia – 36 pts. (32.4%), $DM_{(Diabetes\ Mellitus)}$ – 20 pts. (18.0%), previous stroke – 14 pts. (12.6%), atrial fibrillation – 12 pts. (10.8%), smoking – 32 pts. (28.8%). Mean VRFs number per patient was 2.62 ± 1.39. PD onset age (60.44 ± 8.11 vs 60.80 ± 12.79) and disease duration (50.54 ± 38.74 vs 43.20 ± 39.44) were similar in groups. PD+VRFs patients had higher $UPDRS_{on}$ (36.11 ± 12.19 vs 20.00 ± 6.98, p = 0.011) and akinesia-rigidity scores (0.75 ± 0.61 vs 0.38 ± 0.13, p = 0.001). $PDQ39_{(Parkinson's\ Disease\ Questionnaire)}$ (54.41 ± 27.67 vs 41.25 ± 20.16, p > 0.05) were higher, and $MoCA_{(Montreal\ Cognitive\ Assessment)}$ scores (21.64 ± 4.32 vs 22.60 ± 3.29) lower. Significant differences were found for $MoCA_{naming}$ (2.79 ± 0.41 vs 3.00 ± 0.00, p = 0.001), $MoCA_{abstracting}$ (1.46 ± 0.67 vs 2.0 ± 0.01, p = 0.001) and $MoCA_{orientation}$ (5.58 ± 0.99 vs 6.00 ± 0.01, p = 0.004) subscores.
Conclusions: The frequency of vascular risk factors was high in our PD patients, the most common being HBP. Their presence was associated with motor severity and changes in specific cognitive subscores.
Key words: Parkinson's disease, vascular risk factors, MoCA test.

The role of microelectrode recording during Deep Brain Stimulation of Subthalamic Nucleus in patients with Parkinson's disease

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Abstract

Background: Deep brain stimulation of the subthalamic nucleus improves symptoms of Parkinson's disease. However, the clinical outcome depends on the accurate location of the final electrode. Multiple microelectrode recording is believed to improve the precision, although it prolongs the duration of surgery. We hypothesize that patients implanted in the central trajectory have the same outcome as patients implanted decentrally.
Material and methods: This study was carried out in UKSH Kiel and included 556 patients treated from 1999 until 2018 with bilateral STN-DBS (safety population). Pre- and postoperative efficacy data were available from 400 patients. The outcome parameter was the stimulation-induced improvement of the UPDRS for PD. We compared patients with both electrodes centrally to that bi-decentrally. The rate of surgical complications was determined with postoperative imaging.
Results: A decentral tract was chosen in 41% of the electrodes (central, n = 471 electrodes; decentral, n = 329). Motor improvement was not different between patients with electrodes implanted bicentral (44.39% ± 22.71) or decentral (43.22% ± 17) trajectory bilaterally (p = 0.5571). Similar results were obtained for the hemi body score and subscores for akinesia, tremor, rigidity, postural instability and gait disorder. The overall bleeding rate was 2.78% and not dependent on the number of penetrations.
Conclusions: Outcomes between the groups did not differ and, therefore, the use of mMER is likely to improve the outcome. Comparison with other cohorts does not disclose a higher rate of bleeding complications in this cohort with mMER.
Key words: STN, DBS, mMER, outcome, complications.

Post-traumatic stress disorder in epilepsy: clinical case

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Abstract

Background: Epilepsy has many faces and affects the person at the psychic-soma level. The function of doctors is not only to cure the disease, but also to take into account all the surrounding factors (social, family, school) to facilitate the harmonious development of the sense of identity.
Material and methods: Patient T was sent to the National Center for Epileptology at the age of 15 with an established diagnosis of epilepsy dating back 4 years. The evolution of seizures took place in two stages with marked decrease in their frequency under the effect of treatment. The patient benefited from psychoanalytic psychotherapy sessions with a frequency of once a week for 6 months.
Results: Emotional and psychological trauma was addressed only during psychotherapy and the result was a clear improvement in the condition. Subsequently, spontaneous seizures were rarer, but emotionally triggered seizures occurred; they gradually became less common during psychotherapy.
Conclusions: The psychotherapeutic approach to epilepsy in this case demonstrates a close connection with the patient's life events, but also with his history and subjective position. In conclusion, epilepsy, like other pathologies, is at the border between neurology and psychopathology.
Key words: epileptic seizures, psychic trauma, psychotherapy.

Stroke quality indicators in Balti Clinical Hospital

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Abstract

Background: The cerebrovascular pathologies are among the most important causes of morbidity, mortality and disabilities worldwide and in the Republic of Moldova. The aim of the study was the analysis of the stroke care quality indicators of patients in Balti Clinical Hospital.
Material and methods: We present a retrospective study that included medical records (from January to April, 2021) of 72 patients with stroke, confirmed clinically and by cerebral CT scan.
Results: The mean age of the patients included in our study was 65.8 ± 14.7 years old, 34 men and 38 women. The mean timing from the first symptoms till the admission at the Emergency department was 7.0±3.5 hours. The mean timing spent at the Emergency department was 3.0 ± 1.5 hours. CT-scan examination 24 hours after hospitalization was performed in 63.75% of the patients. Cerebral vessel dopplerography was performed in 6 patients. Thrombolytic therapy was not performed in any of the patients. The mean duration of treatment was 10.0 ± 3.0 days. 65 patients were discharged with an amelioration, while 7 patients died.
Conclusions: The qualitative indices in specialized medical care for cerebral attack patients in Balti Clinical Hospital were influenced by the following factors: patients' presentation out of the therapeutical window as well as the impossibility of performing a cerebral CT-scan in the first 24 hours at the hospital, as well as the Covid-19 pandemic situation.
Key words: cerebrovascular accident, quality indices, thrombolytic therapy.

Phenotypic heterogeneity of amyotrophic lateral sclerosis: a report of three cases

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Abstract

Background: Motor neuron disease (MND) incorporates a spectrum of neurodegenerative syndromes involving both upper and lower motor neurons to a variable degree. Amyotrophic lateral sclerosis (ALS) is the most prevalent MND, but its atypical forms can make ALS a diagnostic challenge.
Material and methods: Ambidirectional analysis of three atypical ALS cases diagnosed on the basis of clinical signs and electromyography results.
Results: We report one case of pseudopolyneuritic ALS: a 60-year-old male with predominantly lower motor neuron lesion signs restricted to the lower limbs for a year, followed by cranial progression, upper motor neuron signs, cognitive deficit, which led to significant motor impairment, dysphagia, breathing difficulties and a fatal outcome within 3 years. Electrophysiological studies showed indirect signs of upper motor neuron damage and diffuse fasciculations. We also report the case of a 44-year-old female presenting with dysarthria, dysphonia and dysphagia followed by a progressive muscle weakness of the right limbs, whose electromyography showed spontaneous motor activity; and the case of a 78-year-old female presenting with isolated bulbar dysfunction and a false-positive edrophonium test, who was ultimately diagnosed with progressive bulbar palsy.
Conclusions: These cases illustrate the diagnostic challenges associated with ALS and the extensive differential diagnosis that is required. Simplified diagnostic criteria (such as the recently proposed Gold Coast Criteria) are more inclusive for heterogeneous phenotypes, a fact that speeds the diagnostic process and the initiation of treatment.
Key words: amyotrophic lateral sclerosis, pseudopolyneuritic, flail leg, bulbar palsy.

Cervical related disability – interactions of pain features, psychological states and clinical presentation

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Abstract

Background: Cervical pain related to different spine pathologies is a major cause of disability. The relationship between clinical patterns, pain, psychological states was demonstrated. Disability in patients with cervical pain remains still high.
Material and methods: A total of 42 patients (14 males, 28 females) with cervical pain were assed using visual analogue scale (VAS), hospital anxiety and depression scale (HADS), patient health questionare-9 (PHQ-9), neck disability index (NDI) and other clinical data.
Results: Acute pain was present in 24 % of patients while gradual in 76%. Among clinical patterns the most common form was referred pain (52%) followed by axial neck pain (33%) and radiculopathy in (14%). NDI correlated with pain intensity (VAS) and the psycho-emotional state (for HADS and PHQ-9, $p < 0.001$). A higher depression score was found in patient with referred pain and radiculopathy (mean 8.0 points ±4 points according to PHQ9 score). Also, NDI was higher in patients with comorbidities, current joint pain and systemic disorders, referred pain, with acute onset, and no previous trauma.
Conclusions: The results from the current study highlighted an association between NDI and pain intensity and psychological state, predominantly in the group with referred pain, and radiculopathy. Acute cervical pain, with no previous trauma, with systemic disorders and other joint pain interfered with a higher risk for developing disabilities. Further research looking at multiple factors such as clinical presentation features of cervical pain and clinical outcomes will additionally guide the development of adequate management strategies for cervical pain.
Key words: cervical pain, neck disability index, depression, psycho-emotional state.

Institute of Emergency Medicine experience in the endovascular treatment of acute ischemic stroke

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Abstract

Background: Mechanical thrombectomy is the method of choice and can be the only useful method in the treatment of acute ischemic stroke caused by large vessel occlusions. Mechanical thrombectomy has been used in the Institute of Emergency Medicine since 2018. The results of treatment during this period are presented in this paper.
Material and methods: 25 patients hospitalized in the Institute of Emergency Medicine with acute ischemic stroke during the years 2018-2021, for whom the procedure of mechanical thrombectomy by stent retriever or stent retriever plus aspiration catheter was applied, were subjected to retrospective study. Several patients' variables were assessed, including the quality of revascularization (Thrombolysis in Cerebral Infarction Score) and the modified Rankin score at 90 days.
Results: Successful recanalization (Thrombolysis in Cerebral Infarction Score at least 2B) was obtained in 84.6% of patients, the score of 3 was achieved in 65.4% of patients. Hemorrhagic complications were established in 2 cases. Estimated mortality was in 23.1% of cases. Of all patients who completed three months from re-permeabilization by May 2021, 58.8% show a modified Rankin score of 0 – 2.
Conclusions: The implementation of mechanical thrombectomy in acute stroke completes the protocol of providing specialized healthcare within the stroke unit and improves the treatment results in this unit.
Key words: stroke, large vessel occlusion, thrombectomy.

Malnutrition impact on stroke outcome: an analysis of a patient cohort 3 months after recanalization treatment

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Abstract

Background: Malnutrition is thought to affect 30% to 70% of hospitalized patients. Little is known about consequences of undernutrition during the acute phase of stroke. We would like to assess the impact of pre-infarction malnutrition on stroke patients treated with thrombolysis and/or thrombectomy.

Material and methods: We performed a retrospective observational study on a cohort of stroke patients who benefited from thrombolysis and/or thrombectomy during 2015 in Saint Joseph Hospital's Stroke Unit. The main objective of our research was to observe the clinical course of undernourished patients compared to the non-undernourished ones, using the NIHSS score at the stroke unit discharged and the 3 months modified Rankin score. Undernutrition was defined by a body mass index of (BMI) ≤ 21.

Results: A total of 81 patients with thrombolysis and/or thrombectomy treatment were included. The median BMI in < 70-year-old patients was 24.5 and 25 in > 70-year-old patients. Initial severity measured by baseline NIHSS score was comparable among the undernourished and non-undernourished patients. Undernourished patients over 70 had a more severe neurological state at discharge (NIHSS 8.5 versus 3.9, NS) and were more disabled 3 months after discharge (Rankin 3.1 versus 2, NS).

Conclusions: Undernutrition prior to stroke seems to have an impact on the functional prognosis of cerebral infarction, especially in patients > 70 years of age. Lack of significant results may be explained by the limited statistical means. A complementary study with a larger cohort is planned in order to assess this hypothesis.

Key words: undernutrition, cerebral infarction, body mass index.

Paroxismal disorders in children with cerebellar tumors

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Abstract

Background: The cerebellum is involved in the pathogenesis of epileptic and non-epileptic paroxysmal disorders. Cerebellar lesions or the removal of cerebellar structures leads to a decreased effectiveness of antiparoxysmal treatment. The paroxysmal activity in patients with cerebellar tumors is currently not fully studied. The aim of the study was to find out the frequency of clinical paroxysmal disorders, the duration and intensity of paroxysmal activity of the brain in children with cerebellar tumors.

Material and methods: There were enrolled 36 pediatric patients with brain tumors: left hemisphere (LH) – 15; vermis (VE) – 11; right hemisphere (RH) – 10. The paroxysmal clinical manifestations, duration of the paroxysmal activity (Paroxysmal Index, Ip, %) and the intensity of the paroxysmal activity (Io, %) were studied via 3D computerized EEG method and brain localization system technology (BrainLoc – 4).

Results: The observed frequency of non-epileptic paroxysmal disorders were: orthostatic syncope (OS) – 11.1%; nocturnal phobias (NP) – 22.2%; hypnic jerks (HJ) – 44.4%; sleep talking (ST) – 33.3%; night terrors (NT) – 22.2%; enuresis (EN) – 11.1%; bruxism (BR) – 22.2%. The following associations of paroxysmal disorders were observed: OS + EN (11.1%); NP + HJ + ST (22.2%), NT + HJ (11.1%), BR + HJ (11.1%). The following values of Ip/Io indices were observed: LH lesion – 8.9 ± 1.31%/72.4 ± 3.89%, RH lesion – 8.7 ± 1.39%/77.9 ± 4.92%, VE lesion – 2.29 ± 2.11%/52.5 ± 8.6%.

Conclusions: In children with cerebellar tumors, non-epileptic paroxysmal disorders were observed in 11.1 – 44.4% of cases. In case of lesions affecting the cerebellar hemispheres, the duration and intensity of the paroxysmal activity is higher when compared to vermis lesions.

Key words: paroxysmal disorders, paroxysmal index, paroxysmal intensity, cerebellar tumors.

Autonomic evoked potential indices in children with cerebellar tumors

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Abstract

Background: The cerebellum is an important cerebral structure in autonomic homeostasis maintenance. In patients with cerebellar tumors following the dislocation of brain structures, various autonomic disorders occur, including suprasegmental disorders. The aim was to study the indices of autonomic evoked potentials, at the stimulation of the left and right hand in patients with cerebellar tumors.

Material and methods: There were studied 15 healthy children and 36 pediatric patients with cerebellar tumors: left hemisphere (LH) – 15; vermis (VE) – 11; right hemisphere (RH) – 10. To record the evoked autonomic potentials, there was used NeuroMEP complex (Neurosoft). The latent period (LP, s) and the maximum amplitude of the autonomic response (Amax, mV) were analyzed. The statistical veracity (p) was calculated in comparison with healthy children.

Results: Autonomic indices when stimulating the left hand were: RH lesion – LP = 1.44 ± 0.19 s, Amax – 3.01 ± 0.12; LH lesion – LP = 1.33 ± 0.009, Amax – 2.80 ± 0.13 ($p < 0.01$); VE lesion – LP = 1.35 ± 0.04 ($p < 0.01$), Amax – 2.56 ± 0.15 ($p < 0.001$). Healthy children – LP – 1.54 ± 0.05, Amax – 3.40 ± 0.15.

Autonomic indices when stimulating the right hand were: RH lesion – LP = 1.39 ± 0.11, Amax – 2.65 ± 0.1 ($p < 0.05$), LH lesion – LP – 1.44 ± 0.13, Amax – 3.15 ± 0.21, VE lesion – LP – 1.32 ± 0.04 ($p < 0.005$), Amax – 2.60 ± 0.009 ($p < 0.01$). Healthy children – LP – 1.49 ± 0.006, Amax – 3.37 ± 0.22.

Conclusions: In children with cerebellar tumors, there was observed a generalized autonomic deficit in the vermis lesion and mainly homolaterally in the lesion of the cerebral hemispheres. Injury of the vermis, as opposed to lesions of the hemispheres, is manifested with a decrease in the conduction velocity of the nerve impulses, through the autonomic pathways.

Key words: cerebellar tumors, latent period, autonomic response amplitude.

Overlap mechanisms of transient global amnesia and COVID-19 infection: review

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Abstract

Background: An increasing number of patients with Transient Global Amnesia (TGA) was reported during the COVID-19 pandemics. However, there are limited data on the mechanisms of TGA linked with this infection. The aim of the study was to analyze the effect of COVID-19 infection on the hippocampal function and its potential mechanisms for TGA. A narrative literature review was performed, while searching on PubMed the following keywords: "transient global amnesia", "COVID-19", "hippocampus". Ten English-written publications (clinical cases, cross-sectional studies, prospective studies) were selected. The time period covered was 2019 – 2021. During recovery from COVID-19, frequent cases of neurocognitive deficits (78%) were reported. It's also known that TGA can be triggered by physical and emotional stress. It is possible that TGA's pathogenesis (arterial ischemia, venous congestion, metabolic stress) could involve the CA1 hippocampal region – the most sensitive area to hypoxia, linked to afferent inputs from the medial and lateral entorhinal cortexes. These regions include high concentrations of Zinc ions and play a key role in modulating memory and spatial learning. Meantime, SARS-CoV-2 was previously detected in the olfactory bulb, amygdala, entorhinal, temporal and frontal cortex (20%); and most severe cases COVID-19 were associated with Zinc deficiency (57.4%).

Conclusions: The review highlights the precipitating events for TGA and their implications at the hippocampal level, jointly with similar pathophysiological changes reported in the novel coronavirus infection. This could explain the effect of COVID-19 infection on the hippocampus function and the potential mechanisms for TGA.

Key word: COVID-19, transient global amnesia, hippocampus (CA1 region).

Percutaneous discectomy in lumbar disc herniation treatment

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Abstract

Background: Multiple surgical treatment methods of a disc herniation are known our days but some controversies may occur in the individual selection of the operation type. In spite of the registered successes in degenerative pathology treatment, the term of "Failed back syndrome" was established. This in turn has imposed the development and implementation of minimally invasive techniques, such as percutaneous discectomy (PD). The main goal of current study was the evaluation of the efficiency of PD in pain syndrome reduction (by VAS scale) at lumbar disc herniation (LDH) treatment.
Material and methods: The study was based on the analysis of 100 cases with LDH, that were operated in 2016 – 2020 through PD. The results of the treatment were appreciated according to the pain relief, neurological deficit reduction, the psycho-emotional state improvement, decrease of analgesic intake, length of hospitalization and the return to daily activity (Denis scale).
Results: PD proved to be a convenient method of treatment. Out of 100 patients, 78 showed the disappearance of pain and the reduction of the neurological deficit after the procedure, 12 patients showed improvements over 3 months according to the Denis Scale. 10 patients underwent microsurgical treatment due to the absence of improvement in syndromes.
Conclusions: The results of the study showed an effectiveness of 78% of the total, with the improvement of the VAS and Denis Scales criteria and a fast and early recovery of patients. At the same time, their hospital stay was reduced by only 24 hours.
Key words: Disc herniation, percutaneous discectomy, Denis scale.

Prevalence of polyneuropathy in patients with Parkinson`s disease in Germany

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Abstract

Background: The prevalence of the peripheral neuropathy (PN) is of 4.2 – 8% in those over 65 y.o. In patients with the Parkinson's disease (PD) a PN – prevalence of 34.2 – 55% was reported. Low vitamin B12-blood level was present in 13% of PD patients. There is a higher prevalence of PN in levodopa-treated patients (36.1%) than in naive (12.1%) and in healthy controls (8.1%).
Material and methods: We examined 601 patients with PD. Of them, 407 patients underwent electrophysiological examination.
Results: 444 (73.9%) had clinically PN. Of 407 patients who underwent electrophysiological investigations, in 361 (88.7%) PN was confirmed. The most common was axonal (304 patients; 84.2%), sensory (282; 78.1%), and slight (78; 21.6%) or moderate (164; 45.4%) PN. Of 471 patients receiving levodopa, 369 (78.3%) had clinical PN, compared to 75 (56.8%) of 132 levodopa-naive patients ($p<0.01$). At the T1 – time – point of first – diagnosis of polyneuropathy, 179 patients (40.3%) of 444 with PN had a vitamin B12-deficiency. In 585 of patients, 38 (33.3%) of 114 levodopa-naive PD patients had vitamin B12-deficiency at the T1, compared to 129 (27. 1%) of 471 levodopa-treated PD patients ($p=0.2$).
Conclusions: Peripheral polyneuropathy is very common in PD. In our group of PD patients the prevalence of a clinical polyneuropathic syndrome was very high and in almost 90% of cases it was confirmed electrophysiologically. 40% of patients with PN had a vitamin B12 deficiency. Levodopa-treatment was more common in PD patients with PN than in those without.
Key words: Parkinson's disease, polyneuropathy, Vitamin B12 deficiency.

Efficacy of transcranial motor-evoked potentials in avoiding the postoperative neurologic deficit for brain tumors with allocation in eloquent regions

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Abstract

Background: Motor-evoked potentials (MEPs) are the well proven method to assess the descending motor pathways and detect neurological impairment. Muscle action potentials of the upper or lower limbs are the responses to the central stimulation. This study aimed to elucidate the clinical efficacy of TcMEP monitoring during resection surgeries of tumors from eloquent brain areas.
Material and methods: TcMEP monitoring data of 83 patients were prospectively reviewed. The patient's age varied between 16 and 81 years, 44 males (53.0%), 39 females (46.4%). None of these patients had a neurological deficit before the surgery. The MEPs were evoked by transcranial electrical stimulation through spiral electrodes placed over the primary motor cortex and were recorded by needle electrodes inserted into the following muscles: biceps, abductor pollicis brevis, and anterior tibialis muscles. MEPs were continuously recorded throughout surgery. The following stimulation parameters were used: number of pulses – 5, duration of each pulse – 0.5 ms, inter-pulse interval between – 2-4 ms, stimulation intensity –50-150 mA. When MEP amplitudes decreased by more than 50%, MEP stimulation was repeated and MEP changes were reported to the surgeon.
Results: No postoperative motor deficit was found in 71 out of 83 patients with stable MEP amplitudes. Postoperative paresis developed in 12 patients. MEP decrease in amplitude (>50%) occurred in six patients (7.2%). Two patients had permanent paresis, caused by vascular injury during tumor resection.
Conclusions: Monitoring of motor-evoked potentials during brain tumors operations located within or adjacent to eloquent brain regions is an effective technique to detect acute intraoperative injury and to avoid postoperative neurologic deficit.
Key words: motor-evoked potentials, eloquent brain areas, postoperative paresis.

Epileptic encephalopathy with CSWS: clinical case

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Abstract

Background: Continuous spike-wave of sleep syndrome (CSWS), according to the ILAE, is characterized by epileptic seizures, neurocognitive deterioration, and specific EEG changes, mainly affects girls (40/60 ratio) between the age of 4 – 7 years. The aim of the study is the analysis of the clinical case of the CSWS in the context of scientific literature and prognosis evaluation, assuming correct application of the international protocol.
Material and methods: Clinical case presentation.
Results: A 10-year-old girl (18.09.2002) came in on 21.09.2012 with history of myoclonic seizures. Hypnogenic myoclonic jerks were described on the night video-EEG monitoring. The awake EEG pattern was unremarkable, but the sleep EEG pattern had characteristic signs of CSWS. The patient has no pathological history, the MRI was unremarkable. The therapy with clobazam 10 mg in the evening was initiated. Night video-EEG monitoring on 08.06.2013 was unremarkable. The patient is monitored for 9 years. On 27.07.2018, the dose was adjusted (5 mg). At the moment the patient is without neurocognitive decline, under treatment and continues the scheduled follow-up. From the epidemiological and symptomatic point of view, our case is homogeneous according to literature, located in the first standard deviation of the Gaussian curve. Considering the diagnosis, the recommended treatment achieved the goals: cessation of seizures, normalization of the EEG pattern, and the preservation of neurocognitive abilities.
Conclusions: In the case of a non-structural etiology, early diagnosis and treatment initiation, provides favorable prognosis, with preservation of neurocognitive abilities and cessation of clinical and electrophysiological signs.
Key words: CSWS, video-EEG monitoring, clobazam.

3D segmentation for neurosurgical preoperative planning: case series report

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Abstract

Background: In Neurosurgery, 3D technology has emerged as a technique with the potential to provide detailed information on the three-dimensional orientation of objects within the surgical site before surgery. These models can be used for preoperative planning, such as finding the best cranial approach and avoiding eloquent areas of the brain. The aim of the study was to determine the impact of 3D technology on neurosurgery development.
Material and methods: Fused MRI and Angio-CT images of 6 patients, treated in the Institute of Neurology and Neurosurgery, with various cerebrovascular diseases were used. Their final images were used for picture reconstruction, 3D segmentation, which were eventually used for planning of the optimal surgical approach.
Results: A detailed technique for picture acquisition, 3D reconstruction and visualization of the clinical cases was reported. For 2 patients with brain tumors, the 3D models were exported in Virtual Reality environment to choose most optimal approach by avoiding eloquent areas. In other 2 patients with brain aneurysm, the 3D their cerebral vessels were printed to acquire its real sizes and most optimal clipping sizes and angles. For last 2 patients with skull defects, special molds were 3D printed for creating symmetrical implant, to avoid modeling them by hand.
Conclusions: The case series prove that using 3D technology in neurosurgical planning shortens the length of surgery, offers more flexible surgical approaches with less intra- and postoperative complications and serves as perfect environment for teaching younger neurosurgeons and residents advanced neurosurgical techniques.
Key words: 3D, segmentation, planning, neurosurgery.

The evolution peculiarities of neural axis congenital malformations: clinical case

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Abstract

Background: The development of malformation of the Central Nervous System and Spinal Neural Axis are some of the most common congenital malformations of the nervous system, usually with a progressive evolution and require a complex attitude in their management. The aim of the study was to present a clinical case of a patient diagnosed with an abnormality of CNS and of spinal neural axis, associated with active congenital hydrocephalus and spina bifida.
Material and methods: a girl with anomaly of CNS and of spinal neural axis, associated with active congenital hydrocephalus and spina bifida was admitted in the Hospital of Mother and Child Health Care in 2019.
Results: The malformations were not established during the intrauterine period at the ultrasonic examination. After birth a neurosonography and the cerebral CT determined the active advanced communicating hydrocephaly. Also, it was found spina bifida and erupted thoraco-lumbar meningoradiculocistocel associated with deep paraparesis and sphincterian disorders. The spinal column radiography determined the absence of the vertebral arches, level L1 – S1. Because the hernia bag was broken with CSF eliminations, the patient was taken to be operated in two stages simultaneously, in 24 hours after birth. Under the ultrasonic guidance a ventriculo-peritoneal shunt was applied. The postoperative period followed without particularities with antibiotic therapy.
Conclusions: The use in complex of all diagnostic methods led to an adequate, optimal address of both development anomalies. The electroneurography, and the pre-, intra- and postoperative electromyography could be good methods of choice in the diagnosis and treatment of patients with spina bifida.
Key words: malformations, neural axis, neurosurgery, electroneurography.

Cerebral venous thrombosis after COVID-9 infection: case report

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Abstract

Background: Cerebral venous thrombosis is a stroke that affects the veins and sinuses of the brain and could be promoted by para-meningeal and systemic infections, like COVID-19.
Material and methods: case report study.
Results: A 29-year-old female admitted with complaints of blurred vision, headache, general weakness, dizziness. The disease started acutely, 3 days before the hospitalization and 2 days after the discharge from infectious diseases facility due to SARS-COV-2 infection, with "blurred" vision, "thunderclap" headache with nausea, vomiting and diarrhea, generalized tonic-clonic seizure. From the past history was mentioned a medical abortion at 20 years, migraine with aura, 10 years use of oral contraceptives, COVID-19 infection confirmed 15 days before. CT-angiography of the brain revealed the partial occlusion of the transverse sinus on the right. A set of general laboratory analyses was performed to establish the procoagulant status: Protein S – 141% (70 – 130%), Protein S – 50% (57 – 53%). Thus, the patient has several risk factors that could promote a prothrombotic process: recent COVID-19 infection, history of use of oral contraceptives, S protein deficiency and migraine with aura.
Conclusions: The coexistence of several risk factors in a young patient increases the risk of developing cerebral venous thrombosis. The SARS-COV-2 infection may be involved in triggering the procoagulant cascade in such patients. The most common symptom reported by patients at the onset of cerebral venous thrombosis is headache, followed by seizures and neurological deficits.
Key words: COVID-19, cerebral venous thrombosis, stroke.

Clinical features of cerebral venous thrombosis based on a series of 50 cases

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Abstract

Background: Cerebral venous thrombosis (CVT) is responsible for approximately 1% of all strokes. Diagnosis is often delayed due to non-specific clinical features and the subacute course of the disease. We aimed to analyze the clinical pattern of patients with CVTs in a tertiary neurological hospital.
Material and methods: The study included patients with CVTs, admitted to the Institute of Neurology and Neurosurgery between 2008 and 2021. The diagnosis was confirmed by MRI and/or CT-angiography images.
Results: Totally 50 patients with CVTs were included, with a median age of 45.3 years, 27 females. The venous infarct was noticed in 13, subarachnoid hemorrhage – in 7, and no cerebral parenchymal lesion was seen in 25 cases. The thrombus occluded superior sagittal sinus (23), transvers sinus (18), cavernous sinus (16), cerebral veins (3). In 16 patients there were multiple venous sinus involvement. Risk factors were present in 34 cases: infections (22), prothrombotic states (6), puerperium (4), cancer (4), oral contraceptives (3), head injury (3), autoimmune disease (1). In 7 cases multiple risk factors were noticed. The most common clinical features were: the abrupt onset (34), intracranial hypertension (33), headache (29), focal deficit (18), visual loss (13), epileptic seizures (8). 5 patients (10%) died. 27 patients were prescribed anticoagulants and 5 patients received modified Rankin score 0 at discharge.
Conclusions: Young adults with new onset headache, visual loss or other focal lesions should be evaluated for CVT in order to avoid severe consequences and long-term disability.
Key words: cerebral venous thrombosis, stroke, prothrombotic state.

Neurogenetic aspects in men with Klinefelter's syndrome

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Abstract

Background: Klinefelter's syndrome (KS) is the presence of one or more supernumerary X chromosomes. The aim was the investigation of the cytogenetic variant in men with KS, for the assessment of neurological phenotypes.
Material and methods: Were investigated 98 men with infertility, having as selection criteria, lack of sperm in the ejaculate, elevated values of Follicle-stimulating hormone (FSH), Luteinizing Hormone (LH), and the following phenotypic aspects: small testes, hypogonadism, cryptorchidism, waist high and disproportionate, gynecomastia, mental retardation, psychosocial problems. Karyotyping was performed according to standard methods G-banding.
Results: The most common cytogenetic variant diagnosed in 25 (25.5%; [95 CI 21.1 – 29.9], p = 0.05) patients with SK was homogeneous free trisomy 47, XXY (22 cases – 88%), followed by: mosaic form (47, XXY / 46, XY: 1 case), polysomies X – Y variants (48, XXYY and 49, XXXXY: 2 cases). In the patients with variant 47, XXY the classical and mosaic forms showed a mild to moderate mental retardation (36.0%; [95 CI 26.4 – 45.6], p = 0.05), language disorders with cognitive-verbal retardation (48.0%; [95 CI 38.01 – 57.99], p = 0.05), slow motor development (20.0%; [95 CI 12.0 – 28.0], p = 0.05), coordination disorders (8.0%; [95 CI 2.57 – 13.43], p = 0.05), immature behavior (60.0%; [95 CI 50.2 – 69.8], p = 0.05). In patients with variants 48, XXYY and 49, XXXXY, moderate to severe mental retardation (50.0%; [95 CI 14.64 – 85.36], p = 0.05), severe cognitive-verbal retardation (50.0%; [95 CI 14.64 – 85.36], p = 0.05), behavioral problems and life-threatening problems were found in 100%.
Conclusions: The cytogenetic variant of KS depends on the number of supernumerary X chromosomes, being determinant in the characteristic of neurological phenotypes.
Key words: Klinefelter's syndrome, cytogenetic, neurologic, phenotype.

Correlation between neurological impairment and liver status in Wilson's disease

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Abstract

Background: The most widely recognized aspect of the neuro-hepatic relation is hepatic encephalopathy, in which neurotransmission in the brain is altered. Of course, there are many conditions that affect both the liver and the nervous system, Wilson's disease being one of the best known. The aim was to characterize the neurological manifestations of Wilson's diseases in terms of symptom type and degree of neurological impairment and correlate these features with degree of abnormalities in copper metabolism, and hepatic status.
Material and methods: 15 patients diagnosed with Wilson's disease were characterized by examination in terms of symptoms including consciousness, activities of daily living as reported by the patient. The neurological manifestations were analyzed in relation to copper abnormalities and liver status.
Results: Most patients (52.9%) exhibited tremor and ataxia, whereas 9.3% were dystonic, and 7.3% had Parkinsonism. Discrete signs were observed in 19.6% of patients. A positive correlation between neurological impairment and higher level of free cooper was observed (Pearson $r = 0.71$). Poor correlation was identified between neurological impairment and hepatic disturbances.
Conclusions: The neurological manifestations of Wilson's disease did not appear to be correlated with hepatic status. These results draw our attention to the symptomatic variability of Wilson's disease, and an individualized approach to each patient is essential.
Key words: Wilson's disease, hepatic copper, neurological status.

Stroke or not? Stroke mimics and chameleons: uncommon presentations of a common disorder

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Abstract

Background: Up to 30% of suspected stroke presentations will subsequently have a different diagnosis. Two scenarios must be considered: a false positive "mimic", and a false negative "chameleon". Also, contemporary brain imaging techniques induce a greater risk of finding "incidentalomas". The objective of this review is identifying and describing the most frequent clinical situations in which these scenarios are encountered.
Material and methods: The relevant terms combination [chameleon OR mimic OR incidentaloma] AND stroke were searched on PubMed database. The following filters were applied: publication date – 5 years, species – humans, age of subjects – 18+, language – English. 320 results were identified, from which only Meta-analyses (1), Reviews (20) and Systematic Reviews (4) were analyzed (total – 25 papers).
Results: Stroke can have an unusual presentation and can often not be immediately recognized. Stroke mimics account for up to 25% of admissions for probable strokes, most commonly described including seizures, migrainous aura, venous thrombosis, posterior reversible encephalopathy syndrome and neoplasms. The commonest identified chameleons were: altered mental status, syncope, hypertensive emergency, systemic infection and suspected acute coronary syndrome. The increased use of MRI also leads to incidental findings in suspected stroke patients, such as: meningiomas, cavernomas, and aneurys.
Conclusions: Having unusual presentations, stroke can often not be immediately recognized. The problem with chameleons is more serious than with mimics, because patients are not identified in time, and are not properly treated. Physicians should consider the above-mentioned diagnoses for subsequent appropriate management.
Key words: chameleon, mimic, incidentaloma, stroke.

Neuroimaging in patients with epilepsy

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Abstract

Background: Recent advances in neuroimaging have significantly changed the clinical approach to patients with epilepsy. Structural neuroimaging may be able to identify prognostic features in patients more likely to respond to antiepileptic drug treatment. The aim of the study was to assess the role of neuroimaging techniques in the diagnosis of patients with epilepsy.
Material and methods: 352 patients with epilepsy, from the National Center for Epilepsy were evaluated by cerebral CT, 1.5 – 3 Tesla MRI and protocol epilepsy MRI.
Results: In our study, only 22.2% of the patients, benefited from high-performance neuroimaging by using epilepsy protocol according to international recommendations. CT and low-resolution MRI (below 1.5 Tesla) are able to identify only extended cerebral lesions, like posttraumatic and ischemic gliosis (in 52.5%), arteriovenous malformation. Instead, highly epileptogenic lesions, like cerebral cortical malformations and hippocampal sclerosis were mainly identified by using 3 Tesla MRI with or without epilepsy protocol (5.9% vs 12.7). 64.8% of all patients with epilepsy had structural etiology, but 15.6% still remained with unknown etiology and poor responsiveness to antiseizure medication.
Conclusions: MRI techniques greater than 1.5 Tesla remains the gold standard in epilepsy neuroimaging and is crucial in detection of highly epileptogenic lesions and individualized treatment.
Key words: neuroimaging, epilepsy, MRI.

Transcranial magnetic stimulation in the treatment of refractory and superrefractory status epilepticus

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Abstract

Background. Pharmacological treatment of Refractory status epilepticus (RSE) and Super-refractory status epilepticus (SRSE) remains a challenge, while transcranial magnetic stimulation (TMS) is one of non-pharmacological options considered to attempt.
Objective of the study. We present two intriguing cases of RSE and SRSE successfully managed by pharmacological approach and TMS.
Material and methods. All data were collected from medical database. Patients underwent all pharmacological stages of the treatment of RSE/ SRSE and TMS.
Results. A 73-year-old female suspected of ischemic stroke with aphasia and right hemiplegia and a 63-year-old female with generalized tonic-clonic seizures evolved to unconscious state, were admitted to ICU. In both cases lab tests, cerebrospinal fluid, brain computed tomographies as well as magnetic resonance imaging were unremarkable. In the first case video-electroencephalography (EEG) monitoring showed pathological patterns and protocoled pharmacological treatment failed. At the third stage, repetitive TMS was associated to continuous midazolam. In the second case, fluctuating lateralized rhythmic delta activity on EEG was not resolved despite phenytoin, phenobarbital, propofol and ketamine administration. Under TMS sessions, diffuse delta slowing and background reactivity were observed. Following days after withdrawal of anesthetic and TMS modulation, clinical status and patients' EEG improved.
Conclusions. Synergistic effects of pharmacological and TMS modulation probably suppressed seizure activity and helped us to acquire favorable outcomes in management of RSE and SRSE.
Key words: Refractory status epilepticus, super-refractory status epilepticus, transcranial magnetic stimulation.

Comorbidities and cognitive decline: relations and interactions in stroke patients

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Abstract

Background: Cognitive decline in stroke patients represents a common issue that can result in poor rehabilitation outcomes and require bigger resources from healthcare systems. Although cognitive conditions can be regarded as separate diagnosis, it is clear that presence of several comorbidities are more common in patients with cognitive disorders. The aim of our study was to determine the most common associations of comorbidities in patients with stroke and cognitive decline.
Material and methods: A retrospective analysis of patients with stroke admitted to rehabilitation unit was performed. Patients with cognitive decline were analyzed separately in order to highlight main comorbidity groups.
Results: Comorbidity number was identical in patients with or without cognitive decline, counting about 4 – 5 additional diagnosis. Cognitive disorders were registered in 11% of the patients. Among most common comorbidity groups were observed the cardiovascular conditions mainly hypertensive cardiopathy in 56 % and atrial fibrillation in 48 % followed by metabolic pathologies, such as diabetes in 24% and hyperlipidemia in 22% of the patients. Among the most common functional deficits in patients with cognitive decline were hemiparesis and speech disorders.
Conclusions: Cardiovascular and metabolic group of conditions are the most common groups of comorbidities in patients with stroke and cognitive decline. A more sensitive research including clustered/ group analyses should be performed in order to determine comorbidity interaction in patients with stroke and cognitive deficits.
Key words: stroke, cognitive decline, dementia.

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Nonconvulsive status epilepticus – a diagnostic and therapeutic challenge

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Abstract

Background: Nonconvulsive status epilepticus (NCSE) is certainly an underdiagnosed pathology with chameleonic presentation. NCSE represents a persistent change in the level of consciousness, behavior, autonomic function, and sensorium associated with continuous epileptiform electroencephalographic (EEG) changes, but without major motor signs. NCSE comprises a group of syndromes with a wide range of response to anti-epileptics from self-limiting to refractory forms. It lacks prominent motor characteristic, but may have subtle motor signs (twitching, blinking). NCSE occurs in 8 – 37% of the ICU patients. The diagnosis and treatment are not straightforward and depend on clinical presentation, etiology, EEG findings. However, it is not always clear how electrographic activity contributes to clinical impairment or to ongoing neuronal injury. EEG criteria for NCSE are – definite electrographic seizure activity with typical evolution; periodical epileptiform discharges (EDs) or rhythmic discharge with clinical sign; rhythmic discharge with either clinical or electrographic response to treatment. More difficult is when there are EDs on EEG but they do not achieve the diagnostic criteria, we must look for: subtle motor signs time-related with EDs; spatio-temporal evolution; EEG and clinical improvement with anti-epileptics.
Conclusions: Thus, NCSE diagnosis requires high index of suspicion in patients with risk factors and suggestive clinical features. Availability of continuous EEG is lacking in many centers and diagnosis is delayed. Early recognition and treatment are essential to optimize therapeutic response and to prevent neurological and systemic consequences. Overdiagnosis and aggressive treatment can contribute to high morbidity and mortality.
Key words: nonconvulsive status epilepticus, NCSE definition, NCSE diagnosis, EEG criteria, treatment.

Neuropathies associated to malignant lymphomas

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Abstract

Background: Malignant lymphomas account for 3 – 4% of all cancers. The nerve damage in non-Hodgkin's (NHL) and Hodgkin's lymphoma (HL) may occur prior to the clinical expression of lymphoma or develop over time. Often, patients address neurologists without known lymphoma. Lymphoma-associated neuropathy shall be differentiated from the complications and side effects of lymphoma treatment. NHL is responsible for the most peripheral nerve complications. Diffuse nerve infiltration is the major cause of neuropathy with axonal damage. The clinically developed entities vary from multiple asymmetric mononeuropathy, polyneuropathy or plexopathy to more generalized patterns like polyradiculoneuropathy. The alteration of the peripheral nerves in HL is less common. HL implies immunological mediated inflammation and extensive demyelination, such as Guillain-Barré syndrome. Some patients, including those with neurolymphomatosis, register a positive response to immunomodulatory treatments, such as steroids and IVIG. In this regard, neurolymphomatosis is frequently misdiagnosed as chronic inflammatory demyelinating polyneuropathy. The electrodiagnostic criteria of definite chronic inflammatory demyelinating polyneuropathy of European Federation of Neurological Societies (EFNS) and Peripheral Nerve Society increase the accuracy of the diagnosis.
Conclusions: Accurate clinical assessment combined with electrophysiology exam facilitate the early diagnosis and interventions in malignant lymphoma. A lymphomatous neuropathy should be considered even if the diagnostic criteria of chronic inflammatory demyelinating polyneuropathy are met, particularly in patients with associated pain syndrome. Electrophysiological evaluation is mandatory in any neuropathy of obscure etiology where lymphomas are placed for differential diagnosis.
Key words: malignant lymphomas, Hodgkin, non-Hodgkin, electrophysiology.

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