

TUZLA  
BRAIN  
WEEK 2020

# BOOK OF ABSTRACTS

TUZLA BRAIN WEEK 2020



09. - 13./03. - MEDICAL FACULTY UNIVERSITY OF TUZLA

## ORGANIZERS



## PARTNERS



**BH Futures Foundation**



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**IBRO**  
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*Clinic of Ophthalmology  
University Clinical Centre Tuzla*

TUZLA  
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## IMPRESSUM

### **Alisa Dedić**

*President of the Student council "Medicus"  
Medical faculty, University of Tuzla*

### **Edina Sejdin**

*Project Coordinator  
Medical faculty, University of Tuzla*

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### **Emir Begagić**

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*Head of the Scientific Research Team  
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*Medical faculty, University of Zenica*

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### **MEDICUS**

*Student council of Medical Faculty, University of Tuzla*

### **BoHeMSA**

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### **EESTEC**

*Electrical Engineering Students' European Association, LC Tuzla*

### **IPIA**

*International business-information academy*

### **BHFF**

*BH Futures Foundation*

### **Students Council of Mechanical Engineering faculty**

# INTRODUCTORY WORDS



**Edina Sejdin**  
*Project Coordinator*

International (Bio)medical Student Congress Tuzla Brain Week is a project created by enthusiastic members of Students Council of Medical faculty in Tuzla "MEDICUS".

The aim of this project is to promote neuroscience and to improve students knowledge about prevention and treatment of neurological and psychiatric illnesses or any other. It started as a project celebrated along with global initiative "Brain Awareness Week" every March and it has that form till this day, funded and supported by DANA and FENS seventh year in a row. Being a part of this story gives an opportunity to many students to present their student scientific research paper, to improve their presenting skills and also to express all the knowledge you need in creating one scientific paper.

Tuzla Brain Week is one of a kind, because it offers a chance for young students and medical doctors to improve their clinical skills, knowledge and to become a part of a great story celebrating neuroscience and medicine in general.

Edina Sejdin

Tuzla, 29/02/2020.



**Alisa Dedić**  
*President of SV "MEDICUS"*

Dear Participants,

It is my pleasure to welcome you to International (bio)Medical Student Congress Tuzla Brain Week 2020 and the city of Tuzla. Our goal was to encourage students to expand their knowledge and engage themselves more with the scientific research work. What you will see in the next five days, is the product of amazing work done by more than 80 members of Organising Committee who worked tirelessly in the last 2,5 months to give you the best experience during this year TBW2020. None of this would be possible without them, and as a president of Student Council "MEDICUS", thank you, every single one of you for your contribution to this amazing event.

To all our guests, please use this event to make new friends, to learn something new, create new ideas, give the best of you during your oral session, enjoy in our city and have fun.

To all students, always remember this quote by Nelson Mandela:

"Education is the most powerful weapon which you can use to change the world."

Alisa Dedić

Tuzla, 29/02/2020.



**Amina Mustačević**

*Head of Scientific Research team*

Dear participants, colleagues and friends,

We are honored to welcome you on behalf of the Scientific Research Team to this year's Tuzla Brain Week (TBW) and our Student Scientific Research Session as a part of this congress.

TBW is a traditional project implemented by the Student Council of Medical faculty in Tuzla "MEDICUS" back in 2013. and it was created by the idea of students willing to work on the promotion of neuroscience. This year, TBW has become congress and the goal is to promote neuroscience, new procedures, facts, ideas, integration of neuroscience with other sciences and to connect students. TBW is held within the "Brain Awareness Week" initiative every March for the past six years and it is supported by DANA, FENS and IBRO as the only project of this type in Bosnia and Herzegovina.

The theme of this year's congress is called "Brainstorming". It is one of the creative techniques in which a large number of ideas are given in order to solve a given problem, with the aim of expressing the full capacity of imagination and intellectual abilities.

Welcome to Tuzla at Tuzla Brain Week 2020 and we hope to see you next year !

Mustačević Amina.

Tuzla, 02/03/2020.



**Emir Begagić**

*Editor in chief*

Dear participants,

I'm honored to welcome you to International (bio)Medical student congress Tuzla Brain Week 2020. It is my pleasure to serve as editor in chief of this years TBW.

Organizing committee worked very hard, but with immense enthusiasm in order to organize best Tuzla Brain Week so far. TBW always strives to be a meeting place for students and also a platform for the presentation of student scientific work, and this year we did our best to ensure the best conditions for these activities.

I would like to personally thank all the members of the organizing committee for their hard work, as well as all the students who have submitted their scientific papers for this year's congress. I'm looking forward to meeting you all in Tuzla.

Emir Begagić

Zenica, 25/02/2020.

## SCIENTIFIC RESEARCH TEAM



**Amina Mustačević**

*Head of Scientific Research team  
Medical faculty, University of Tuzla*



**Emir Begagić**

*Editor in chief  
Medical faculty, University of Zenica*



**Nermin Đuzić**

*International Burch University - Department  
of Genetics and Bioengineering*



**Ilma Ahmetagić**

*Medical faculty, University of Tuzla*

# TUZLA BRAIN



**Dado Pavić**

*Medical faculty, University of Tuzla*



**Aida Sinanović**

*Medical faculty, University of Tuzla*



**Ariana Gjocaj**

*Medical faculty, University of Tuzla*



**Jasmina Dedić**

*Medical faculty, University of Tuzla*

# PROGRAM AND SCHEDULE

day 1

## DAY 1 - MARCH 9TH 2020 - MONDAY

TIME	EVENT	VENUE
14:30-15:45	Registration	Faculty of medicine (Main Hall)
16:00-17:00	Opening Ceremony	Faculty of medicine (Amphitheatre 1)
17:00-17:20	Caffe Pause	Faculty of medicine
17:20-18:50	Plenary lectures	Faculty of medicine (Amphitheatre 1)
<p>A Key role for metabolism and epigenetics in pathogenesis and inheritance of brain disorders Dr. Ali Jawaid, MD, PhD</p> <p>Neuroscience and mental health Doc.dr.med.sc. Nermina Kravić, neuropsychiatrist, subspecialist of child and adolescent psychiatry and psychotherapy</p> <p>Art and medicine-painters. Did Ophthalmological condition change their later work? Dr. Amra Nadarević-Vodenčarević, ophthalmologist</p>		
20:30	Gala Dinner (for active participants)	Restaurant Royal
20:30	Social programme (for passive participants)	Restaurant Zrno Soli

## DAY 2 - MARCH 10TH 2020 - TUESDAY

9:00-12:00	Student scientific research session	Faculty of medicine (Amphitheatre 1)
9:00-9:15	INTRODUCTION	
ORAL SESSION I		
9:15-10:15	THE ROLE OF GIANT MACROADENOMA RESECTION IN PSYCHOTIC VS PROLACTIN DISORDER Adi Ahmetpahić MD, Amina Šahbaz, Esma Hasanagić, Walid Sarmini MD, Ibrahim Omerhodžić MD ( Neurosurgery, Neuropsychology )	
	THE EVOLUTION OF COMPLICATED TOXIC ENCEPHALOPATHY IN DECOMPENSATED CIRRHOSIS Popescu Sanziana, Chivu Ana Maria, Mihai Tudor, Dr. Vladut Catalina ( Neurology )	
	ANTIPHOSPHOLIPID SYNDROME PRESENTING AS PAPHILOEDEMA WITH NO EVIDENCE OF CEREBRAL VENOUS THROMBOSIS: CASE REPORT Kanita Selmanović, Šejla Romanić, Amra Nadarević-Vodenčarević MD, Neringa Jurkute-Moorfields MD ( Ophthalmology )	
	THE ROLE OF SURGICAL TREATMENT IN HIGH GRADE GLIOMA THERAPY Nejra Mlačo, Bakir Kudić, Sabina Komić, Zarina Babić, Mersad Baručija MD,PhD ( Neurosurgery )	
	PREVALENCE AND IMPORTANCE OF STAPHYLOCOCCUS AUREUS IN NASAL MUCOSA AMONG MEDICAL FACULTY STUDENTS Andrej Milaković, Suzana Đukarić, Ognjen Raljić, Ružica Lukić ( Microbiology )	
	TREATMENT EFFICIENCY OF ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION WITH PRIMARY PCI METHOD AT UNIVERSITY CLINICAL CENTER TUZLA Dedić Alisa ( Other )	
10:15-10:45	LUNCH BREAK	

## DAY 2 - MARCH 10TH 2020 - TUESDAY

### ORAL SESSION II

#### INTRACRANIAL HEMORRHAGE CAUSED BY CEREBRAL ARTERIOVENOUS MALFORMATION IN A CHILD: CASE REPORT

Selen Čović, Elna Biber, Eldin Burazerović MD  
( Neurosurgery )

#### PREVALENCE OF OPHTHALMIC DISEASES AMONG COMPETITORS OF THE FRIENDLY COMPETITION OF SPECIAL OLYMPICS "PARALLEL"

Hadžić Amar, Drljević Naida, Hadžić Denis, Mehić Dženeta, Zahirović Saima  
( Ophthalmology )

#### CASE REPORT: PATHOLOGICAL FRACTURE OF FEMORAL NECK

Ilma Ahmetagić, Emir Begagić, Bradarić Dženeta  
( Other )

10:45-11:45

#### CASE REPORT : DEEP VEIN THROMBOSIS

Enida Mujagić, Dino Buljubašić  
( Neurosurgery )

#### BREVUNDIMONAS DIMINUTA: OPPORTUNISTIC INFECTION IN IMMUNOCOMPROMISED PATIENT

Ognjen Raljić, Andrej Milaković, Nikola Lubura, Ružica Lukić  
( Microbiology )

#### FARMAKOGRAFIJA WEBAPP: A NOVEL APPROACH TO MEDICAL STUDENT EDUCATION IN MEDICATION PRESCRIBING

Semir Hadžić, Emir Bećirović, Amir Bećirović  
( Other )

# day 2

## DAY 2 - MARCH 10TH 2020 - TUESDAY

TIME	EVENT	VENUE
	Professional workshops	
9:00-13:30	Endovascular Neurosurgery and Interventional Neuroradiology	Clinic for Radiology
14:00-16:00	Brain Injuries - Advanced Life Support	Community Health Center Tuzla
12:00-13:30	Practical guide to Imaging Proctols : CT and MRI Angiography	Clinic for Radiology
14:00-15:30	Neurophysiology in Clinical Practice	Clinic for Neurology
14:00-16:00	Neontal Cranial Ultrasound Standard Views	Pediatric Clinic
16:30-18:30	Basic Suture Materials and Suturing Techniques	Institute for Microbiology
16:30-18:00	The Effect of Hyperbaric Oxygen Chamber	Faculty of Medicine
20:00	Social programme	Gypsies bar

# day 3

## DAY 3 - MARCH 11TH 2020 - WEDNESDAY

TIME	EVENT	VENUE
ALL DAY LONG	Professional workshops	
09:00-12:00	Future of Surgery: Minimally-Invasive Cardiac Surgery	Clinic for Interventional Cardiology
09:00-12:00	NeuroOnkology: Neurosurgeon's Treatment of the Brain Tumor	Clinic for Neurosurgery
12:00-13:30	Brain Diseases – Brain Pathology	Institute for Pathology
10:00-12:00	Physical Therapy: Hope After Brain Stroke	Clinic for Physiotherapy and Rehabilitation
10:00-13:30	3D Printing in medicine	Faculty of Mechanical Engineering
14:00-16:00	Brain Injuries - Advanced Life Support	Community Health Center Tuzla
16:00-18:00	The effects of Music Therapy on Anxiety and Depression	University hotel Dorrah
17:00-18:30	TBW Science Cafe	Caffe Bar Charlie
20:00	Social programme	Irish Pub

# day 4 & 5

## DAY 4 - MARCH 12TH 2020 - THURSDAY

TIME	EVENT	VENUE
10:00-15:00	Biomedical Engineering	National Theatre Tuzla
10:00-10:20	Introductory Word	
10:20-11:00	Application of 3D printer in Medicine Toni Duspara, Bachelor of Mechanical Engineering	
11:00-11:45	Seat belt accessory Students of the Faculty of Mechanical Engineering Tuzla	
11:45-12:15	Presentation: Depresija-App Kenan Suljić	
12:00-12:45	Pause	
12:45-13:30	Fly Lab Kenan Kraković	
13:30-14:00	Artificial intelligence in biomedical engineering Nermin Đuzić & Lemana Spahić Bachelors of Science in Genetics and Bioengineering	
17:00-18:30	TBW Quiz	American Corner Tuzla

## DAY 5 - MARCH 13TH 2020 - FRIDAY

TIME	EVENT	VENUE
12:00-14:00	Closing Ceremony	Faculty of Medicine

## ABOUT PARTNERS

**EESTEC (Electrical Engineering Students' European assoCiation)** is a non-partisan, non-profit organization of and for Electrical Engineering and Computer Science (EECS) students at universities, institutes and technical schools in Europe awarding an engineering degree. The aim is to promote and develop international contacts and the exchange of ideas among the students of EECS. The association achieves its aim through improving technical knowledge of EECS students, introducing them to the industry and the educational system of other countries.

**ICMS (International Congress of Medical Sciences)** organized by the Association of Medical Students in Bulgaria - Sofia, is an international event that has been organized for 19 consecutive years and welcomes more than 500 participants every year. The congress gives the opportunity to ambitious students and young doctors from all over the world to present their research work in a set of different poster and oral sessions. Furthermore, you can join a variety of hands-on workshops and keynote lectures by world-renowned scientists and doctors. We aim to inspire innovation, promote academic quality in medical education and mediate collaboration between medical students around the world. We are proud to say that the International Medical Students' Congress of Bucharest offers not only the greatest number of scientific events of all European congresses, but also on the most diverse subjects, including conferences and workshops on most of the medical specialties. Besides the chance to take part in high-quality scientific events, we encourage you to take advantage of the opportunity to present your research in front of experienced doctors.

Created with passion and care, the IMSCB is a yearly occasion not only to develop your medical knowledge, but also to achieve and practice your skills in any specialty. The congress offers the amazing chance to discover yourself, fructify your passion and learn to love the art of medicine.

**BoHeMSA (Bosnian and Herzegovinian Medical Students' Association) Local Committee Tuzla:** Our goal is promotion, development and implementation of different projects important for Medicine, science and public health. We are trying with our work to make an impact on to students so they could enhance their knowledge, skills and make them better leaders in the future.

**BHFF (The Bosnia & Herzegovina Futures Foundation)** was established in 2015 with a vision to transform the lives of talented youth and break down ethnic barriers in Bosnia and Herzegovina through the power of technology and education.

**SaMED (Sarajevo International Medical Students Congress)** is a gathering of young researchers from the field of biomedical sciences, promoting exchange of knowledge, improvement of scientific work and growth of ideas.

**SCMSA (Suez Canal Medical Students' Association)** is an independent, Non-profit and Non-political association of medical students in Suez Canal University. SCMSA is a full member In IFM-SA-Egypt.

**OSCON (Osijek Congress)** is an international congress of translational medicine for students of biomedical sciences and young physicians. At the congress you can participate as an active or passive participant. We also invite people from other countries to apply and participate in the congress. The topics of your work do not have to be related to the official theme of this year's OSCON, but can be from any biomedical area.

**FASMR (Federația Asociațiilor Studenților în Medicină din România)** is a NGO from Romania which represents the professional, scientific, social and cultural interests of the students.

# TUZLA BRAIN WEEK 2020



**09/03/2020 - 13/03/2020**



**TUZLA, BOSNIA & HERZEGOVINA**

# #brainstorming

# CONTENT

## NEUROSURGERY

- 1 THE ROLE OF GIANT MACROADENOMA RESECTION IN PSYCHOTIC VS PROLACTIN DISORDER  
*Adi Ahmetpahić MD, Amina Šahbaz, Esmā Hasanagić, Walid Sarmini MD, Ibrahim Omerhodžić MD*
- 2 THE ROLE OF SURGICAL TREATMENT IN HIGH GRADE GLIOMA THERAPY  
*Nejra Mlačo, Bakir Kudić, Sabina Komić, Zarina Babić, Mersad Baručija MD, PhD*
- 3 CEREBRAL ARTERIAL-VEIN MALFORMATION IN A CHILD: CASE REPORT  
*Selen Čović, Elna Biber, Eldin Burazerović MD*
- 4 CASE REPORT : DEEP VEIN THROMBOSIS  
*Enida Mujagić, Dino Buljubašić, Adnan Čičkušić MD*

## NEUROLOGY

- 1 THE EVOLUTION OF COMPLICATED TOXIC ENCEPHALOPATHY IN DECOMPENSATED CIRRHOSIS  
*Popescu Sanziana, Chivu Ana Maria, Mihai Tudor, Dr. Vladut Catalina*

## OPHTHALMOLOGY

- 1 PREVALENCE OF OPHTHALMIC DISEASES AMONG COMPETITORS OF THE FRIENDLY COMPETITION OF SPECIAL OLYMPICS "PARALLEL"  
*Drljević Naida, Hadžić Amar, Hadžić Denis, Mehić Dženeta, Zahirović Saima*
- 2 CASE REPORT: ANTIPHOSPHOLIPID ANTIBODY SYNDROME (APS)  
*Kanita Selmanović, Šejla Romanić*

## MICROBIOLOGY

- 1 PREVALENCE AND IMPORTANCE OF STAPHYLOCOCCUS AUREUS IN NASAL MUCOSA AMONG MEDICAL FACULTY STUDENTS  
*Andrej Milaković, Suzana Đukarić, Ognjen Raljić, Ružica Lukić, MD, PhD*
- 2 BREVEVUNDIMONAS DIMINUTA: OPPORTUNISTIC INFECTION IN IMMUNOCOMPROMISED PATIENT  
*Ognjen Raljić, Andrej Milaković, Nikola Lubura, Ružica Lukić MD, PhD*

# CONTENT

## OTHER

### 1 TREATMENT EFFICIENCY OF ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION WITH PRIMARY PCI METHOD AT UNIVERSITY CLINICAL CENTER TUZLA

*Dedić Alisa, Jahić Alan MD*

### 2 CASE REPORT: PATHOLOGICAL FRACTURE OF FEMORAL NECK

*Emir Begagić, Dženeta Bradarić, Adnan Keštović MD*

### 3 FARMAKOLOGIJA WEBAPP: A NOVEL APPROACH TO MEDICAL STUDENT EDUCATION IN MEDICATION PRESCRIBING

*Semir Hadžić, Emir Bećirović, Amir Bećirović*

## PROGRAM AND SCHEDULE

	TIME	PART OF THE SESSION	SCIENTIFIC COMMITTEE AND REVIEWERS
1.	09:00 – 09:15 o'clock		Introduction
2.	09:15 – 10:15 o'clock	Oral session I	<b>Prof. Mirsad Hodžić MD, PhD</b> – Clinic for Neurosurgery <b>Prof. Omer Ć. Ibrahimagić MD, PhD</b> – Clinic for Neurology <b>Assoc. Prof. Nermina Kravić MD, PhD</b> – Psychiatry Clinic <b>Prof. Fatima Numanović MD, PhD</b> – Institute for Microbiology <b>Prof. Svemir Čustović MD, PhD</b> – Orthopaedics and Traumatology Clinic <b>Prof. Nermin Salkić MD, PhD</b> – Internal Medicine Clinic
3.	10:15 – 10:45 o'clock		Lunch break
4.	10:45– 11:45 o'clock	Oral session II	<b>Prof. Harun Brkić MD, PhD</b> – Clinic for Neurosurgery <b>Assoc. Prof. Zikrija Dostović MD, PhD</b> – Clinic for Neurology <b>Assoc. Prof. Elvir Bećirović MD, PhD</b> – Psychiatry Clinic <b>Prof. Fatima Numanović MD, PhD</b> – Institute for Microbiology <b>Prof. Svemir Čustović MD, PhD</b> – Orthopaedics and Traumatology Clinic <b>Prof. Fahrija Skokić MD, PhD</b> – Pediatric Clinic
5.	11:45 – 12:00 o'clock		Rewards

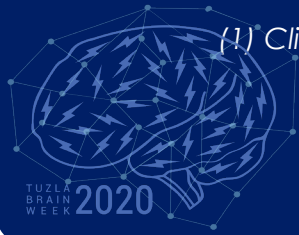




# Neurosurgery

# THE ROLE OF GIANT MACROADENOMA RESECTION IN PSYCHOTIC VS PROLACTIN DISORDER

Adi Ahmetpahić MD (1,2), AMINA ŠAHBAZ (2), Esma Hasanagić (2),  
Walid Sarmini MD (1), Ibrahim Omerhodžić MD (1,2).



(1)\* Clinical Center of University in Sarajevo, Clinic for Neurosurgery,  
Sarajevo, 71000 Bosnia and Herzegovina  
(2) Sarajevo School of science and technology,  
Sarajevo, 71000 Bosnia and Herzegovina

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## ABSTRACT:

### INTRODUCTION

Psychosis is a common symptom of many medical and neurological conditions. According to World Health Organization, it is defined as presence of hallucinations, delusions or both. Pituitary adenomas are most common form of tumor occurring in the sellar region and main cause of pituitary disease in adults. Symptoms include: acromegaly, severe depression, strong headaches, drug seeking behavior and other psychological disturbances. It is supposed that after pituitary adenoma operation, symptoms are alleviated and general quality of life is improved. This leads us to think about correlation between sellar tumors and psychosis and cognitive processes.

### CASE DESCRIPTION

36-year old psychiatric patient managed as acute polymorphic psychotic disorder with symptoms of schizophrenia (F 23.1) according to ICD, since 2004. After stabilization, therapy was stopped in 2009. In 2016, patient was evaluated again after psychotic episodes. Patient was admitted and CT and MRI showed giant skull base tumor in sphenoidal sinus, sellar, parasellar and clival region. This was followed with hyperprolactinemia of 255,000  $\mu$  IU / ml (reference val-

ues for males 78-380  $\mu$  IU / ml). Patient underwent transfacial skull base approach surgery. Postoperatively, prolactin levels decreased to 96,280  $\mu$  IU / ml.

### DISCUSSION

Today, sellar tumors are rarely associated with psychotic syndrome. One of the other main symptoms of the patient was hyperprolactinemia. It is not certain whether it was caused by endocrinology treatment or macroadenoma. After the surgery, significant improvement in psychotic symptoms was not present in this case, which does not support assumed correlation between psychosis and presence of pituitary tumor.

### CONCLUSION

Even though symptoms were in regression, direct correlation between giant adenomas and psychosis cannot be confirmed during the 2-year follow-up. Similar cases demand a multidisciplinary approach due to possible side effects of therapy.

### KEYWORDS

macroadenoma, hyperprolactinemia, transfacial approach, acute polymorphic psychotic disorder

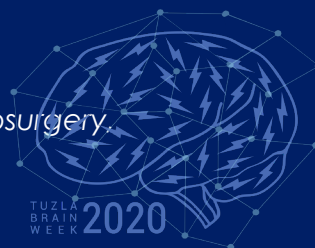
# THE ROLE OF SURGICAL TREATMENT IN HIGH GRADE GLIOMA THERAPY

Nejra Mlačo (1), BAKIR KUDIĆ (1), Sabina Komić (1),  
Zarina Babić (1), Mersad Baručija MD PhD (2)

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## ABSTRACT:

### BACKGROUND

High-grade gliomas represent the most devastating forms of brain cancer. Surgery is commonly the initial therapeutic approach for tumor debulking and obtaining tissue for a definitive diagnosis, followed by radiation and chemotherapy as standard treatment options.

### AIM

This study discusses the role of surgical management of high-grade gliomas and aims to determine whether there is any benefit regarding recovery of neurological deficit and alleviating symptoms.

### METHODS

This was a retrospective study, which included 36 patients surgically treated for high-grade glioma at the Clinic of Neurosurgery, Clinical Center University of Sarajevo. We retrieved the records of patients diagnosed with gliomas at this clinic during the period from January 2017 to January 2018 and collected data on gender, age, pathologic diagnosis, main symptoms, neurological status before and after surgery, size of resection, tumor recurrence. Data analysis was performed using the IBM SPSS program (version 23).

### RESULTS

Surgical procedure was total resection in 63.9% cases. Subtotal resection was performed in 5.6 % patients and tumor reduction was performed in 13.9% patients. Biopsy alone was performed in 16.7% patients. On discharge, patients who underwent tumor resection (biopsy excluded) had a neurologic deficit in regression in 63.3% cases and fully recovered in 10% cases. 20% patients had a normal neurologic status both before and after surgery. One patient treated with tumor reduction also had persistent neurologic deficit. One patient had a lethal outcome due to postoperative complications. In all cases where only biopsy was performed, neurologic deficit persisted after surgery.

### CONCLUSION

Tumor resection results in a long term decrease of neurologic deficit and symptoms, mainly by reducing intracranial pressure. Accordingly, the biopsy alone doesn't improve neurologic status. Tumor resection increases the Karnofsky Performance Score of the patient which allows further cancer treatment.

### KEYWORDS

high-grade glioma, size of resection, biopsy, surgical treatment, neurologic deficit

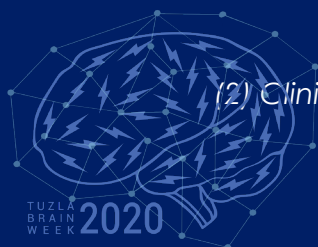
# CEREBRAL ARTERIAL-VENOUS MALFORMATION IN A CHILD: CASE REPORT

SELEN ČOVIČ (1), Elena Biber (1), Eldin Burazerović MD (2).

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Sarajevo, 71000 Bosnia and Herzegovina

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## ABSTRACT:

### INTRODUCTION

Intracranial hemorrhage (ICH) in children often causes death or lifelong disability. In previous reports of pediatric ICH, the most common underlying causes for hemorrhage were intracranial vascular anomalies such as arteriovenous malformations (AVMs). An arteriovenous malformation (AVM) is an abnormal tangle of blood vessels connecting arteries and veins, which disrupts normal blood flow and oxygen circulation. Most common symptoms are: headaches, seizures, vomiting and muscle weakness in one part of the body. Symptoms may begin at any age but usually emerge between ages 10 and 40.

### CASE DESCRIPTION

We report a case of a 15-year old boy presenting with a severe headache and vomiting. After a CTA, a CT and an MRI scan the patient was diagnosed with a arterial-venous malformation in the right front lobe of the brain. The AVM blood supply was coagulated and the malformation was dissected after which the patient had no evident neurological deficit.

### DISCUSSION

Cerebral AVM malformations can be treated by 3 different surgical approaches: microsurgery, endovascular surgery and radiosurgery. The treatment option is determined by the Spetzler grading system that classifies the malformations by the size of nidus, eloquence of the brain and venous drainage of the AVM. In this case a microsurgical approach was used.

### CONCLUSION

Managing patients with AVM malformations includes a multidisciplinary approach and depends on the status of the patient, the characteristics of the malformation and the practitioners experience. Innovations in imaging technology, such as 3-D imaging and in surgical treatments have the potential to improve surgical precision and safety in removing brain AVMs and preserving surrounding vessels.

### KEYWORDS

child, intracranial hemorrhage, arteriovenous malformation

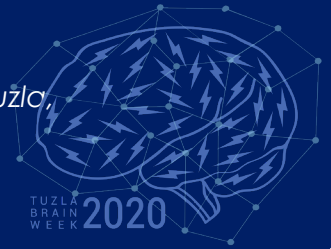
# CASE REPORT : DEEP VEIN THROMBOSIS

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## ABSTRACT:

### INTRODUCTION

Deep vein thrombosis (DVT) is a term used to describe a blood clot that develops within a deep vein in the body. Etiopathogenesis includes Virchow's triad: endothelial lesion, flow congestion and hypercoagulability of blood.

DVT can develop at any age but is most common in people over the age of 40. DVT in 40-70% cases starts asymptotically, and becomes noticeable when it engages veins of wider caliber. Most common symptoms include pain, swelling, tenderness in one leg, warm skin turning to a reddish or bluish colour over the affected area.

Differentials of DVT are muscle injuries, acute arterial ischemia, pathological fractures of femur etc. DVT occurs in 75% of surgical knee interventions, 60-70% after lower limb amputations and 50-100% spinal injuries.

### CASE DESCRIPTION

A 30-year-old lady presented to the neurology department with lower back pain. A review of her past medical history revealed that she had sciatica extending through the right hip and buttock and down the right

leg. Condition gets worse when patient sits, cough, or sneeze. She has also felt numb, weak, or tingly at times through the leg. T2 scan of low back was normal. A phlebography order showed DVT.

### DISCUSSION

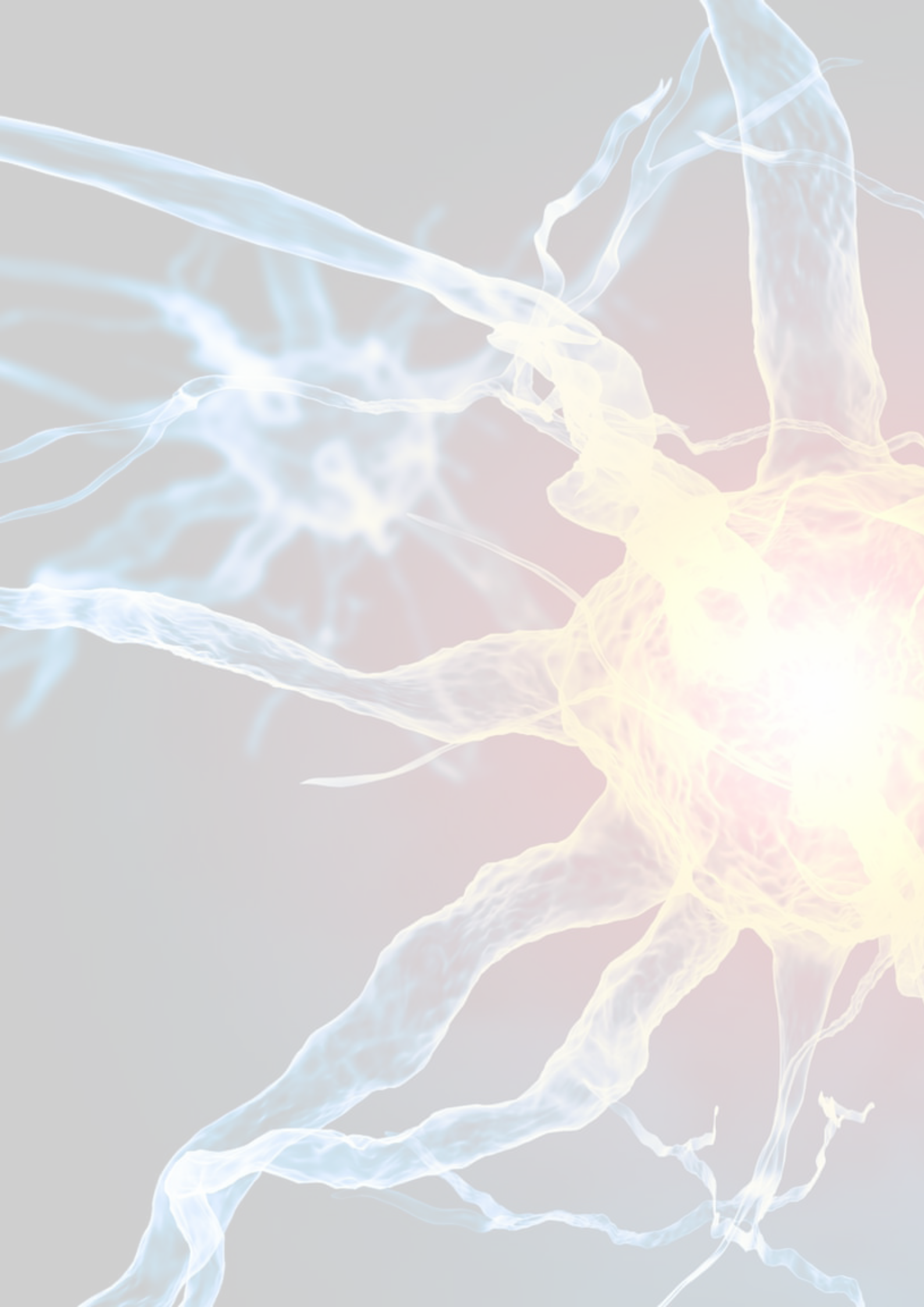
There are several ways to diagnose DVT, including : physical examination revealing swelling, discolouration and soreness in the affected area; ultrasound ; blood tests; venography ; CT or MRI scans. Primary prophylaxis includes reduction of venous arrest, anticoagulant medications or application of dextran. Thrombolysis or surgical thrombectomy are secondary prophylaxis.

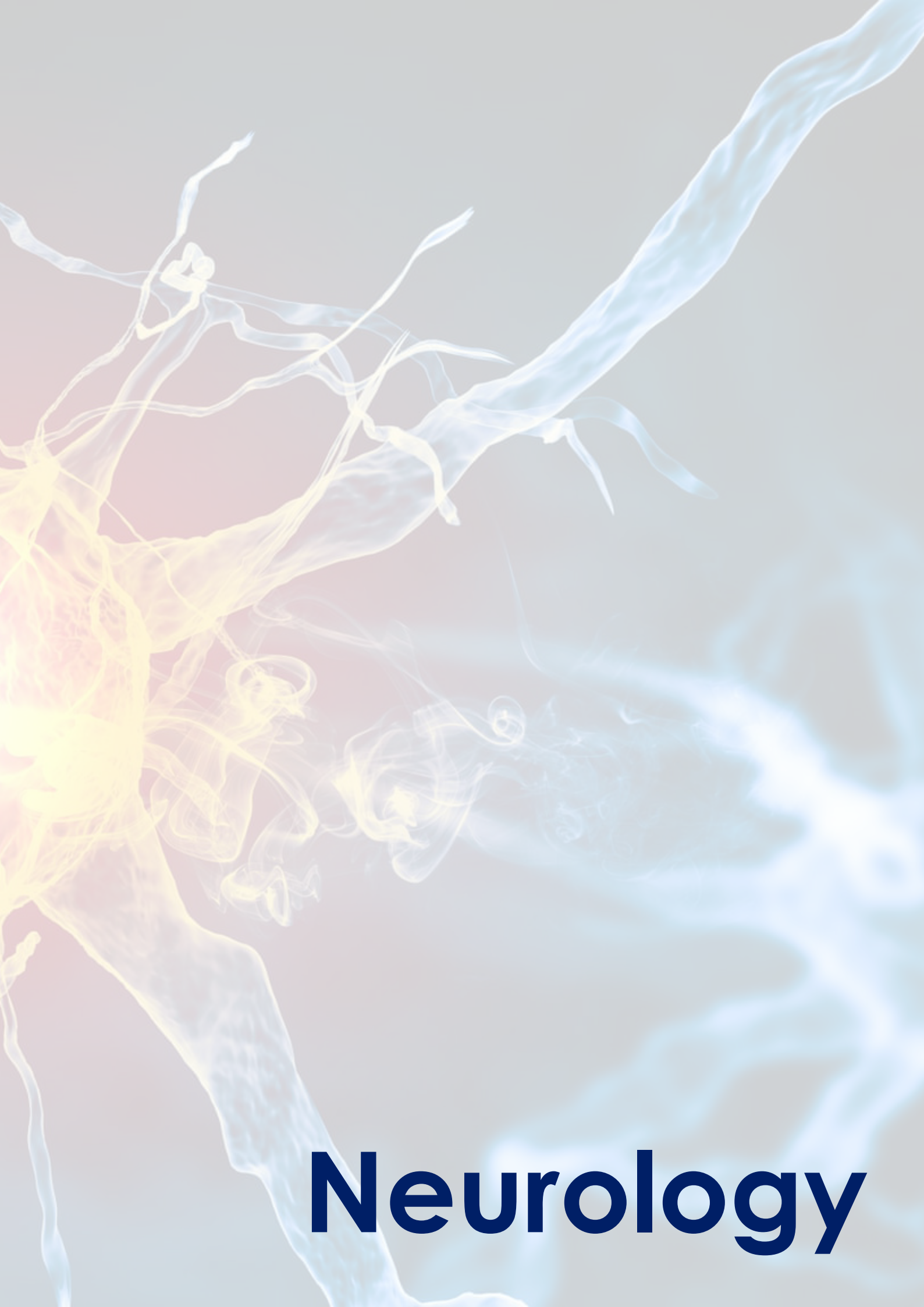
### CONCLUSION

DVT diagnosis is based on anamnestic information, basic physical examination which should include evaluation of peripheral pulses in older patients with exercise-induced calf pain, and functional tests.

### KEYWORDS

Thrombosis, sciatica, veins, phlebography

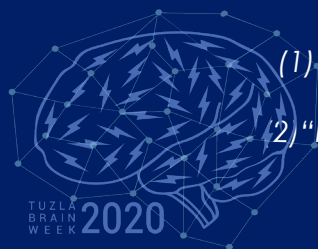




# Neurology

# THE EVOLUTION OF COMPLICATED TOXIC ENCEPHALOPATHY IN DECOMPENSATED CIRRHOSIS

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## ABSTRACT:

### INTRODUCTION

Portosystemic encephalopathy is a serious complication of chronic liver disease and is broadly defined as a reversible alteration in mental status and cognitive function occurring in the presence of liver failure. Gut-derived neurotoxins that are not removed by the liver because of vascular shunting get to the brain and cause the symptoms that we know of as hepatic encephalopathy.

### CASE DESCRIPTION

We report the case of a 47-year old admitted with abdominal distension due to ascites and diffuse abdominal pain for 2 days. The patient has a history of decompensated cirrhosis class Child-Pugh C (12 points) due to hepatitis B and alcoholic, refractory ascites and stage 2 esophageal varices. From his prior admission we can recall spontaneous bacterial peritonitis (one year prior to the presentation).

On admission the patient was disoriented with neurological signs, grade III hepatic encephalopathy (West Heaven), C type, flapping tremor, with incoherent speech yet responding to verbal stimuli, and jaundice. Psychometric tests were performed and extrapyramidal disfunction, permanent neuropsychic impairment (Reitan Test) with decreased psychomotor speed (Stroop task) were observed.

In the ascites fluid the tests show high leukocyte count (800 elements/ $\mu$ l) suggesting spontaneous bacterial peritonitis, as a potential risk factor for hepatic encephalopathy.

Throughout this hospitalization, a total of 13 liters of ascites liquid were drained. Specific treatment was started with great improvement of the clinical and biological laboratory tests.

### DISCUSSION

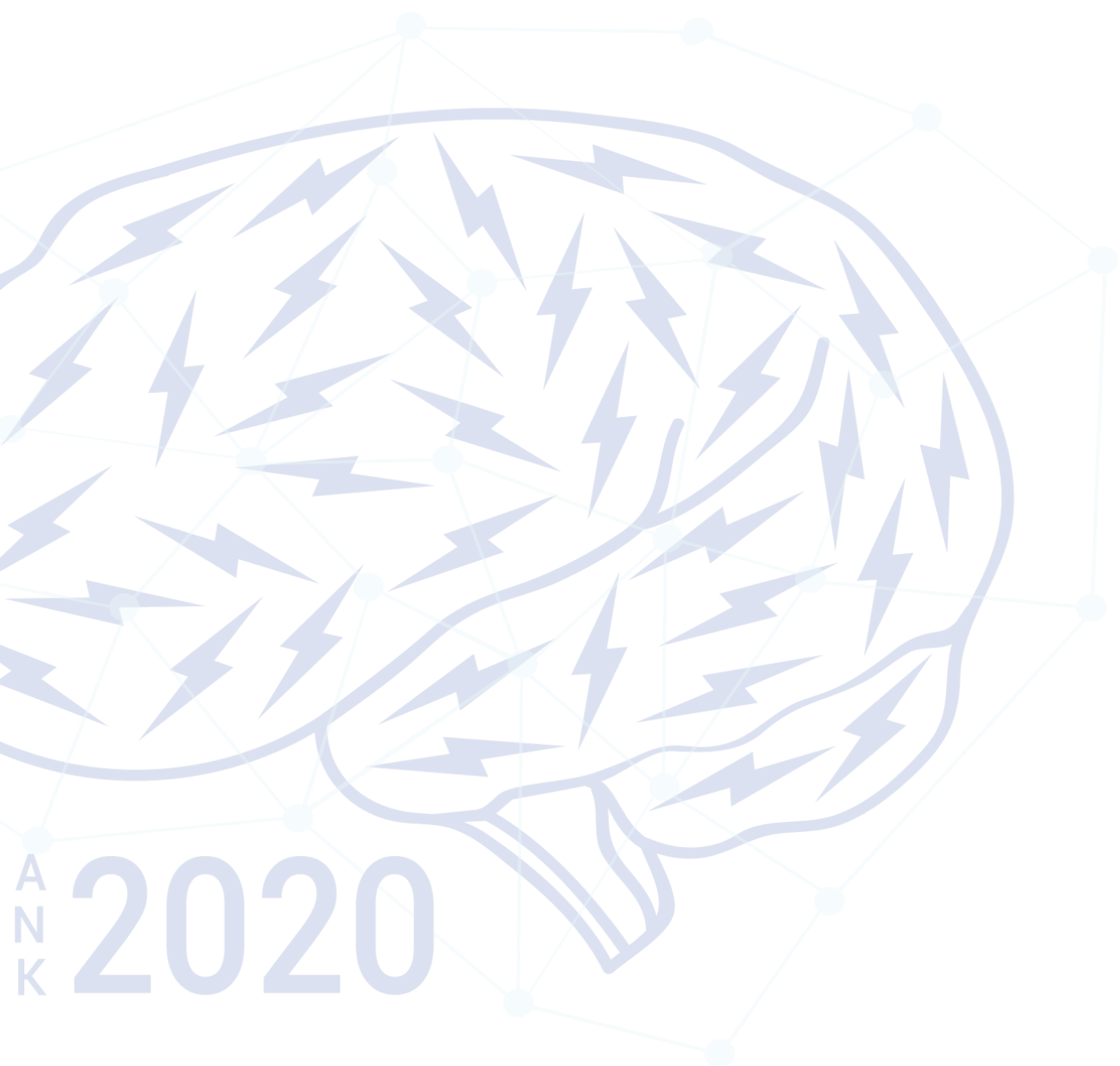
: What is interesting about this case, is how a severely complicated case could be quickly improved to increase the neurological and cognitive status after lactulose administration, evacuation the ascites liquid and treatment of bacterial peritonitis which promotes the encephalopathy in the first place.

### CONCLUSION

Hepatic encephalopathy is a severe disorder that may change the patient's status in several hours. Life-threatening complications like pyramidal dysfunction and respiratory disorders must be expected and treated accordingly.

### KEYWORDS

hepatic encephalopathy, neurosteroids, extrapyramidal dysfunction



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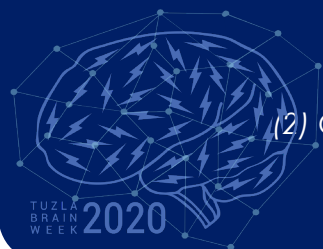




# Ophthalmology

# PREVALENCE OF OPHTHALMIC DISEASES AMONG COMPETITORS OF THE FRIENDLY COMPETITION OF SPECIAL OLYMPICS "PARALLEL"

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## ABSTRACT:

### INTRODUCTION

For the fifth year in a row, the Faculty of Medicine Student Council "Medicus" Tuzla has been organizing a project called Special Olympics Friendly Competition "PARALLEL". Part of this project is Healthy Program which includes ophthalmic exams where data for this research was collected.

### AIM

Purpose of this research is to draw attention to the ophthalmic issues usually found in this population.

### METHODS

All competitors, people with disabilities, were subjected to ophthalmic examinations. The examination included: visual acuity testing, optometric testing, color vision test, external and internal eye examination, and measurement of eye pressure.

### RESULTS

Total of subjects 27 (23 male and 4 female) completed all examinations. The mean age of the subjects was  $28, 8 \pm 0.6$  years. Strabismus was present in 81% (22) of subjects. Latent or manifest strabismus was present in 81% (22) of subjects. Amblyopia was present in 77% (21) of subjects. Most common form of manifest strabismus was esotropia 3 (17%) followed by exotropia 1 (4%) and vertical strabismus 1 (4%). Latent strabismus was present in 1 (4%) of whom 1 (4%) had exophoria

### CONCLUSION

This research will serve as a basis for further steps towards improving the quality of life for people with disabilities and to emphasize importance of ophthalmological examination and early intervention in this population.

### KEYWORDS

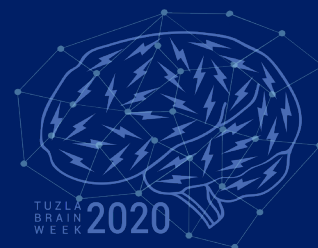
ophthalmology, strabismus, amblyopia, special olympics

# CASE REPORT: ANTIPHOSPHOLIPID ANTIBODY SYNDROME (APS)

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## ABSTRACT:

### INTRODUCTION

Antiphospholipid antibody syndrome (APS) is an autoimmune disorder characterized by elevated level of multiple different antibodies that are associated with recurrent venous or arterial thrombosis and pregnancy-related complications. Even though it has a strong association with cerebral sinus and venous thrombosis (CVT) there have been described several cases of APS with no evidence of CVT or other condition which would cause an intracranial hypertension (IH) and papilloedema.

### CASE DESCRIPTION

We describe a case of a 49-year-old woman with bilateral papilloedema who previously had early myocardial infarction and two pregnancies with risk of spontaneous abortions. The patient was referred to an ophthalmologist with one month lasting IH symptoms: headaches sometimes accompanied with nausea, central positional vertigo, transient visual obstructions, photopsia, pulsatile tinnitus. Clinical examinations revealed the presence of papilloedema. There was enlargement of blind spot in visual fields. Visual acuity and color visions were preserved, both pupils were with no afferent defects. Time of flight MRI with contrast

enhancement and venography showed significant hypoplasia of the right transverse and sigmoid sinus without any visible signs of thrombosis and evidence of an intracranial mass. Hematological investigation confirmed the presence of antiphospholipid antibodies as a possible underlying cause.

### DISCUSSION

Transverse sinus stenosis is common finding in patients with IH. These stenoses may have various conformations, ranging from functional smooth narrowing of sinus segment associated or not with definite flow gaps, to segmental hypoplasia or aplasia of one or more central venous collections.

### CONCLUSION

Although antiphospholipid antibodies have been recognized as a risk factor for an increased risk of thrombosis, there have been reported a few cases with primary APS with no evidence of CVT or other conditions which could justify the IH.

### KEYWORDS

APS, autoimmune disorder, papilloedema



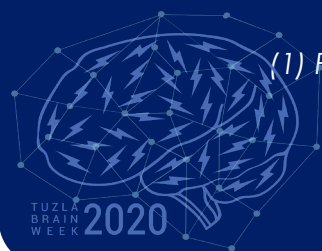
The background of the slide is a dense field of stylized, 3D-rendered rod-shaped bacteria. The bacteria are primarily light blue, with some showing a pinkish-orange glow or gradient, particularly at their ends. They are oriented in various directions, creating a sense of movement and depth. The overall color palette is soft and pastel, with the bacteria appearing to float against a light, hazy background.

# **Microbiology**

# PREVALENCE AND IMPORTANCE OF STAPHYLOCOCCUS AUREUS IN NASAL MUCOSA AMONG MEDICAL FACULTY STUDENTS

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## ABSTRACT:

### BACKGROUND

*Staphylococcus aureus* (*S. aureus*) is a Gram-positive bacterium that colonizes skin and mucosa in 30% of healthy population. It's one of the most common causes of intrahospital and infections outside the hospital. The most common way of intrahospital infection transmission is via contaminated hands of the hospital staff. The most vulnerable patients are those on immunosuppressive therapy, patients with respiratory infections, malignant diseases, and IV catheters.

### AIM

The aim of this study was to calculate how many healthy students were nasal carriers of *S. aureus*, and also to inspect the sensitivity to antibiotics. This population is particularly important because they get in direct contact with vulnerable patients.

### METHODS

The nasal swabs were taken two times from a population of 367 students, age 19 to 25, six months apart at the microbiology laboratory of university hospital Foča. The samples were inoculated on Blood agar and incubated at 36°C for 24h, and bacterial colonies stained with gram method, and then

it was performed catalase and coagulase reactions for identification. The sensitivity to antibiotics was tested with disc-diffusion method on Mueller-Hinton agar.

### RESULTS

The first measurement showed that 33 students (8,99%) were carriers of *S. aureus* in their nasal mucosa. In the second measurement, 20 students (5,44%) were positive. 7 students had *S. aureus* in both measurements. 94,3% showed resistance to penicillin, one sample was resistant to clindamycin and erythromycin, and one resistant to fusidic acid. There were no cases of methicillin-resistant *S. aureus* (MRSA).

### CONCLUSION

These results show that *S. aureus* is not rare in medical students who are in direct contact with vulnerable patients and we all should be aware of this. Also, the important thing is that these bacteria strains showed sensitivity to most of the tested antibiotics. Results also show importance of detection of *S. aureus* carriers with regular control of students.

### KEYWORDS

Colonization, nasal mucosa, *Staphylococcus aureus*

# BREVUNDIMONAS DIMINUTA: OPPORTUNISTIC INFECTION IN IMMUNO-COMPROMISED PATIENT

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## ABSTRACT:

### INTRODUCTION

*Brevundimonas* is a Gram-negative, non-fermenting bacillus from the *Caulobacteriaceae* family. It grows slowly in aerobic conditions at 30 to 37°C. The most commonly isolated species are *B. vesicularis* and *B. diminuta*. Most of the patients in which the bacterium was isolated also had some other disease (cancer, lupus, renal failure), thus it is considered an opportunistic pathogen.

### CASE DESCRIPTION

A 62-year-old female, a non-smoker, was admitted to the pulmonology department of the University hospital in Foča because of the fever, coughing and fatigue. The patient underwent a breast operation at the end of the last year, following chemotherapy and radiotherapy. She was already diagnosed with bronchopneumonia twice this year (first time no pathogen was found, the second time *Klebsiella* and *Serratia* were isolated from sputum). At her final admission, symptoms and signs were similar to those before. This time, blood culture was positive to *Brevundimonas diminuta*. Sample was cultivated in aerobic conditions on MacConkey agar. Identification and antibiogram were done by VITEK 2 system. Appropriate therapy was administered, and she went home with improved condition.

### DISCUSSION

With only 49 articles describing isolated *Brevundimonas* (until 2017, mainly in India, Taiwan and USA), this case of isolated *Brevundimonas diminuta* attracts attention towards this opportunistic pathogen. Antibiogram showed that the bacterium is sensitive to penicillins and aminoglycosides. Literature data differs from case to case, but many cases of *Brevundimonas* infection were resistant to those antibiotics, so their appropriate usage is mandatory in further treatment, to keep its virulence at the minimum.

### CONCLUSION

*Brevundimonas* is less virulent than other Gram-negative non-fermenting bacteria. However, if it gets isolated from more than one patient in a short period, it should be an alarm for immunocompromised patients and be included in a prevention program. Contamination of samples or laboratory should always be considered before concluding that it is a real infection.

### KEYWORDS

*brevundimonas*, bronchopneumonia, opportunistic, immunocompromised





**Other**

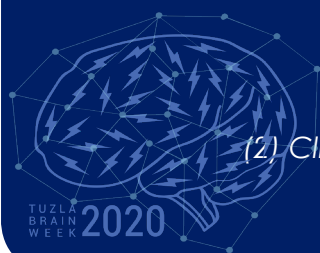
# TREATMENT EFFICIENCY OF ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION WITH PRIMARY PCI METHOD AT UNIVERSITY CLINICAL CENTER TUZLA

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## ABSTRACT:

### BACKGROUND

In Bosnia and Herzegovina and the world, the most common cause of death, especially in the older population, is ST-Segment Elevation Myocardial Infarction. Primary Percutaneous Coronary Intervention is a method of choice for treatment of patients with ST-Segment Elevation Myocardial Infarction.

### AIM

To compare mortality rate and the need for urgent Coronary Artery Bypass Grafting, in patients with acute ST-Segment Elevation Myocardial Infarction undergoing primary PCI, depending on the age group (patients under 70 years and patients over 70 years).

### METHODS

Retrospective epidemiological comparative study during the period from January 2019 to October 2019, 207 patients with STEMI were admitted to the Clinic for invasive cardiology UCC Tuzla. We compared clinical outcomes for patients with STEMI

undergoing pPCI at UCC Tuzla, depending on the age group for patients under 70 and over 70 years old.

### RESULTS

During the study period of 10 months, 207 patients with STEMI, underwent pPCI. We divided patients into two groups. There were 160 patients in the group 1 (<70 years old), and 47 patients in the group 2 (>70 years old). From the first age group, 5% of patients were indicated for urgent CABG, while from the group 2, 31,9% were indicated for CABG. Mortality rate for the patients from the age group 1 was 1,87%, and for the age group 2 was 6,38%.

### CONCLUSION

The outcome of this study showed us that the mortality rate and the need for urgent CABG for patients undergoing pPCI is much higher for the older patients (>70 years).

### KEYWORDS

STEMI, pPCI, cardiovascular, coronarography

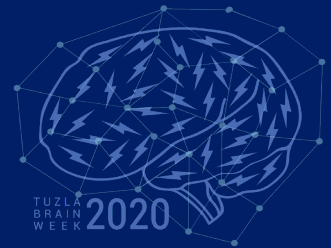
# CASE REPORT: PATHOLOGICAL FRACTURE OF FEMORAL NECK

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## ABSTRACT:

### INTRODUCTION

The femoral neck (lat.collum femoris) connects the femur body and the femur head. In younger people, femoral neck fractures are caused by a high intensity force, such as a fall from a height and a car accident. It is most common in the elderly, half of whom need long-term assistance with daily activities and the use of mobility aids. The incidence of hip fractures is on the rise and treatment and rehabilitation are long-term, posing a major challenge to the healthcare system.

### CASE DESCRIPTION

Orthopedics and traumatology clinic Tuzla is reported by a man who is 19 years old with a right hip injury gotten by fall with simple bone cysts that are mostly painless. Our study included a taking of anamnesis, X-ray and the Capanna criterion which confirmed fracture of femoral neck. The

treatment included osteosynthesis and rehabilitation where movements in the hip joint returned to normal by the time.

### DISCUSSION

Diagnose is based on anamnesis, a clinical examination used to establish limited mobility in the hip joint, X-ray who showed fracture, Capanna criterion, osteosynthesis and rehabilitation. After osteosynthesis, rehabilitation is necessary and the patient's condition was better with every treatment and the movements were of a greater degree.

### CONCLUSION

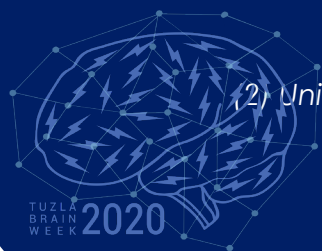
Pathological fracture of femoral neck is common fracture followed by pain, restricted movements and the best treatment is by surgeon, immobilization and rehabilitation.

### KEYWORDS

fracture, femoral neck, cysts, treatment

# FARMAKOLOGRAFIJA WEB APP: A NOVEL APPROACH TO MEDICAL STUDENT EDUCATION IN MEDICATION PRESCRIBING

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## ABSTRACT:

### BACKGROUND

Prescribing drugs is an integral part of medical practice. Students in Bosnia and Herzegovina usually meet with this topic during 3rd year of medical school in Pharmacology. In a 2018 survey conducted on 39 randomly selected 4th to 6th year medical students, 41% (N = 16) said that the traditional way of education in medication prescribing is tedious and ineffective.

### AIM

Our goal was to create an interactive web application that would make prescription writing training more engaging and effective.

### METHODS

Bootstrap, PHP and MySQL were used to build a responsive web application that could be accessed both via a PC or a handheld device. It consisted of two parts: (1) Basic information on different types of drugs and instructions on prescribing them as magistral formulas, officinal formulas or

finished drug formulations. (2) Interactive interface where they would be given a drug with its type, indication and dosage which they would need to prescribe in a certain way. After submitting their prescription, they would be given feedback pointing on potential errors.

### RESULTS

Since this web application is yet to be publicly revealed, there are no results regarding its efficiency and user rating. Since this web application is yet to be publicly revealed, there are no results regarding its efficiency and user rating.

### CONCLUSION

Farmakografija WebApp remains to be tested after its public reveal later this year in May. Further studies should inspect its efficiency as a novel approach to medical student education in drug prescribing.

### KEYWORDS

pharmacology, education, web application, prescribing