#CROSS14
Croatian student summit

BOOK OF ABSTRACTS

HEALTH PROMOTION

April 10-13, 2018

14th International Biomedical
Croatian Student Summit

University of Zagreb **School of Medicine**

SVEUČILIŠTE U ZAGREBU
MEDICINSKI FAKULTET

CROSS14
Croatian student summit

14th International Biomedical
Croatian Student Summit

Zagreb, April 10-13, 2018

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HEALTH PROMOTION

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ORGANISED BY

1917–2017
100 Years of School of Medicine, University of Zagreb

University of Zagreb School of Medicine

"Andrija Štampar" School of Public Health

Student Council of School of Medicine, University of Zagreb

About This Year's Topic

History of Public Health in Croatia

We wanted the main topic to be something that is relevant at this day and age, omnipresent, something a medical student will find interesting and most importantly educational and useful for her or his future carrier.

After giving it a lot of thought about what the main topic of CROSS 14 should be, we came across the fact that the year 2017 was the year in which the roof institution of public health in Croatia, School of Public health Andrija Štampar, is celebrating 90 years of establishment and it gave us the idea. In the age where the leading causes of death worldwide are noncommunicable diseases connected to poor lifestyle habits concerning lack of exercise and unhealthy diet choices and tumors that can easily be prevented through screenings of the population, the topic "Health Promotion" presented itself as the perfect one.

It is also a way of honouring the tradition of Public health in Croatia and the legacy of late professor Andrija Štampar, one of the founders of the World Health Organization and Association of Schools of Public Health in Europe. It was in 1920s that public health centers for health promotion, hygiene and epidemiology were established in rural areas and Andrija Štampar helped introduce a range of health services in the 1920s and 1930s. He also pioneered primary health centers in Croatia.

In 1927 the School of Public Health Andrija Štampar was founded and today is a scientific and educational branch of the Zagreb School of Medicine which organises, implements and promotes the teaching of undergraduate and graduate university studies of medicine and nursing and postgraduate studies. The school has a special influence in the regional environment as the first and for a long time the only public health facility in the South East Europe, but also in the ASPHER network (Association of Schools of Public Health in Europe).

Also the biggest part of CROSS 14 program takes place at the School of Public Health Andrija Štampar. The professor lectures will tackle the question of how thoroughly planned public agendas can improve the health of the nation.

We hope you will find it interesting and useful.

Sincerely,

CROSS 14 Organisers

Dr Andrija Štampar's principles as a foundation for public health and socialized medicine:

1. *It is more important to enlighten the people than to impose the laws; therefore, the medical profession consists of only three short laws.*

2. *It is most important to prepare the ground in a certain sphere and to develop the right understanding for questions of hygiene.*

3. *The question of public health and its improvement must not be monopolized by medical authorities, but has to be cared for by everybody,for only by joint work can the progress of health be obtained.*

4. *First of all, the physician must be a social worker; by individual therapy he cannot attain much, social therapy is the means of success.*

5. *Economically the physician must not be dependent on his patient, because it hinders him in the accomplishment of his principal tasks.*

6. *In matters of national health, no difference is to be made between the rich and the poor.*

7. *It is necessary to form a health organization, in which the physician will seek the patient, not the patient the physician; for this is the only way to gather an ever-increasing number of those whose health we have to care for.*

8. *The physician has to be the teacher of the people.*

9. *The question of national health is of a greater economic than humanitarian importance.*

10. *The principal fields of action of a physician are human settlements and not laboratories and consulting rooms.*

Welcome Message

President of the CROSS 14 Organising Committee

Dear colleagues and friends,

I am very glad that you have chosen the Croatian Student Summit for sharing your ideas and gaining new ones. For the fourteenth year in a row, our congress is continuously growing. This year's Organising and Scientific committees have made some improvements, but also tried to continue all of the great things accomplished by colleagues before us to make CROSS recognized. We are especially proud of our collaboration with Liječnički vjesnik, a professional journal for Croatian physicians.

My thanks go out to all students who helped organize this year's Congress, but also every CROSS before. A special thanks goes to our professors for supporting us and sharing their knowledge with us. This year is special for us because the School of Medicine, University of Zagreb is celebrating its 100th anniversary. Another big celebration this year is the ninety years of the Andrija Štampar School of Public Health, where a bigger part of CROSS 14 will take place.

The main topic of the professors' lectures is health promotion. Health promotion is defined as "the process of enabling people to increase control over, and to improve their health. It is a core function of public health and contributes to the work of tackling communicable and noncommunicable diseases and other threats to health." Health promotion is a very relevant topic because the development of technology, connected with the CROSS 13 theme "Innovations in health", enables us to educate more people and inform them about their health. This is a modern interpretation of Andrija Štampar's idea that a doctor should go to people's homes and working places and help them to improve their health. Dr. Štampar's ideas are incorporated in the fundamentals of the World Health Organisation and that motivates us to come up with great ideas and projects which can help a lot of people in different parts of the world.

Now, seventy years after its establishment, the WHO is still striving for the same goals, but now with efficient methods. Along with possibilities, the development of our civilisation brings threats like the faster spreading of infections, the sedentary way of life, the exposure to chemicals and radiation, an ageing population, all of which having their own consequences. For that reason, we should keep track of not only innovations in medicine, but also lifestyle changes worldwide in order to recognize new threats and possibilities so we can improve and preserve people's health.

I hope that our congress will help you broaden your horizons and become a better doctor in the future.

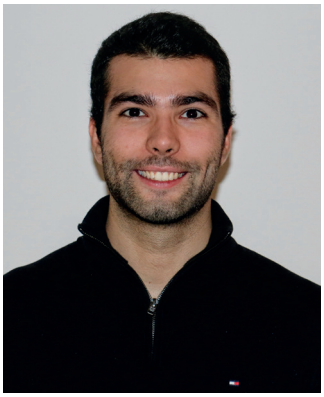
On behalf of the Organising Committee, I wish you a successful and rewarding congress. Enjoy!

Tomislav Smoljo

President of the CROSS 14 Organising Committee

Welcome Message

President of the CROSS 14 Scientific Committee



Dear participants and colleagues,

On behalf of the Scientific Committee, it is with greatest pleasure that I welcome you to Croatian Student Summit 14, hopefully the most successful one to date. Since this is the fourteenth CROSS in a row, we are very proud to say that it is the oldest student congress in Croatia, gathering many students and young doctors and scientists throughout the years.

It is important to emphasize that the core idea behind this congress is and always has been to introduce our students and young colleagues to beginnings and first steps of their scientific careers in an interesting and useful way, to allow them to learn something new every year, but also to establish many connections with other colleagues and students from Croatia and from all around the world, since the number of international participants is continually growing every year.

As you will see during your time at CROSS 14, this year we have changed the program quite a bit in order to provide even greater experience to everyone. Although opening ceremony will traditionally stay in Čačković Hall, the greatest part of the congress will be held at Andrija Štampar School of Public Health. The reason for this is that we primarily focused on the topic of health promotion and there is no greater place for participants to feel the importance of population health than by being inside one of the oldest European public health institutions established by one of the founders of World Health Organization and the first president of the World Health Assembly – Dr. Andrija Štampar.

As always, we tried to keep the congress quality outstanding through a variety of session types, including plenary lectures, workshops and poster presentations. As we understand that it is not always easy for students in general to participate in additional extracurricular scientific activities, this year we strived to motivate our students to actively participate at CROSS 14 and invested a lot of time and effort to guide them through this process. This is because we believe that the experience they gain during this process in this part of their life is invaluable and acquired knowledge will serve them very well in their future careers.

However, we went even further in promoting the quality of abstracts and overall conference. As Editor-in-Chief of this program book and book of abstracts, I am very proud that this year it is published as a supplement to Liječnički vjesnik, the official journal of the Croatian Medical Association that celebrated 140 years of existence last year. This is a great step in a direction we imagined for CROSS to take. A lot of time was devoted to making this partnership become a reality and I want to express my sincere gratitude to The Editorial Board and Editor-in-Chief Prof. Branimir Anić, MD, PhD for making this possible.

I'd like to give special thanks to all members of the Scientific Committee who selflessly invested their valuable time to further improve the quality of the scientific program, but also to all members of the Organising Committee and Student Council of School of Medicine. We are all working towards the same goal.

I am looking forward to welcoming you in Zagreb and I wish you a very successful congress!

Kind regards,

Igor Radanović

President of the CROSS 14 Scientific Committee

Welcome Message

President of the Student Council

Dear Participants,

As the president of the Student council at the University of Zagreb School of Medicine, it is a great honor and privilege to be able to welcome you to this year's Croatian Student Summit - CROSS 14.

Croatian Student Summit is an annual student congress organized by the Student council of our School of Medicine. Throughout these fourteen years, CROSS has truly become a part of our Faculty's tradition. Since its small beginnings in 2004, the Congress has grown tremendously – in total it has hosted over one hundred esteemed lecturers and over one thousand student presentations. Thousands of participants from all over the world have had the chance to enjoy our Congress. We've had students from Hungary, Italy, Romania, Poland, Bulgaria, Scotland, the USA and many other countries, and with each year the number of international delegates participating at the Congress increases. We are very proud to have created a place for students to present their achievements and share their work with their colleagues.

At the University of Zagreb School of Medicine, we encourage scientific research, co-operation and exchange of ideas. Each year we try to improve our Congress – make it more competitive and interesting. Our continuity, numerous awards and an increasing number of participants are the best indicator that we are on the right track. We are proud of the names that have led CROSS all these years and that have left a mark on our School of Medicine. We are grateful for their contribution in promoting scientific student activities and events. Vision and enthusiasm led to the fact that the Croatian Student Summit has become an indispensable scientific event in Croatia, recognized in Europe and the world.

I would like to take this opportunity to thank the Dean of the University of Zagreb School of Medicine, Marijan Klarica, MD, PhD and the University of Zagreb Student council for their generous support. Without them and, of course, the Organising and Scientific committees, this great story wouldn't be possible. In the end, I would like to emphasize that although the focus of our Congress is to acquire new knowledge, CROSS is also a great place to meet colleagues and start long-lasting friendships. Make most out of your time here - explore the beautiful city of Zagreb and, most importantly, don't forget to have fun.

I wish us all a very successful Croatian Student Summit and look forward to seeing you again next year.

Thank you and best regards,

Kristian Dominik Rudež

President, Student council
University of Zagreb School of Medicine

General Information

VENUES
University of Zagreb, School of Medicine,
Šalata 3
"Andrija Štampar" School of Public Health,
Rockefeller Street 4

GUEST ATTENDANCE POLICY
All event activities (including workshops and meal functions) are exclusively reserved for registered attendees. Non-registered guests (including children, family members, colleagues, etc.) are not allowed in any of the event areas. Badges provided at registration are required for entrance into all functions and will be strictly enforced.

REGISTRATION DESK
Registration desk will be open as follows:
Tuesday, April 10 11:00 – 16:45
Wednesday, April 11 09:00 – 12:00

SOCIAL MEDIA
You are invited to follow CROSS 14 on the social media for updates and news, to share experiences and practices, or to simply ask for opinions.
Don't forget to use the hashtag #CROSS14 to share your experience at CROSS 14!

LIABILITY AND INSCURANCE
The Congress Organising Committee and School of Medicine cannot accept liability for personal accidents or loss of or damage to private property of participants. Participants are advised to take out their own personal travel and health insurance for their trip.

CERTIFICATE OF ATTENDANCE
Certificate of attendance will be distributed the last day of CROSS 14 (Friday, 13 April).

PUBLIC TRANSPORTATION
The main building of the School of Medicine is located very near the city center and as such is easily accessible by public transportation. Several tram lines make a stop at Draškovićeva (4, 8, 11, 12, 14), which is the closest stop from the main building. The School of Public Health "Andrija Štampar" can also be reached by tram lines that make a stop at Gupčeva Zvijezda (8, 14), even though a more practical way to reach it may be a ten minute walk from the main building of the School of Medicine.
More information on our local public transportation network can be found at: http://www.zet.hr/en.

POSTER ORAL PRESENTATIONS
Posters specifically chosen by the Scientific Committee will be discussed during the Poster Sessions. These posters do not require printing or production of materials – as your work will be presented electronically.
Posters will be available at the Poster stations at the Congress, on the CROSS 14 website during the Congress and in an online archive for one year following the Congress. Viewers will be able to easily find and browse and download the posters in PDF format when permitted by the presenter.
Each poster presentation should be about 5 minutes long. Plan your presentation accordingly and leave a minute for questions at the end of your presentation.

*All posters will appear on plasma stations in the Poster Area and are available for electronic viewing at all times for participants.

EVENTS
We will host a number of events you may attend while at CROSS 14.

Buffet dinner and networking reception will be held at the School of Medicine in front of the Čačković hall on Tuesday, April 10, 18:30-20:00.

A gala dinner will be held at the School of Public Health "Andrija Štampar" on Thursday, April 12, 19:00-21:00.

Here is a list of additional events:

ZAGREB SIGHTSEEING TOUR
Meeting point on Ban Jelačić square
Wednesday, April 11, 9:00 - 11:00

VRAPČE MUSEUM TOUR
Meeting point on Ban Jelačić square
Thursday, April 12, 9:00 - 12:00

AFTER PARTY
HOLLYWOOD vanity club, Tuškanac 1
Friday, April 13, 23:00

Rules for Submission

GENERAL RULES

All abstracts and ePosters must be submitted in English.

The CROSS Scientific Committee will review all abstracts. Following the information regarding acceptance, scheduling information will be sent to the abstract submitter.

The Congress Book of Abstracts will include plenary lectures, satellite symposium abstracts, workshop abstracts and all accepted poster presentations.

All abstracts must be submitted and presented in clear English with accurate grammar and spelling of quality suitable for publication. If you need help, please arrange for the review of your abstract by a colleague who is a native English speaker, by a university specific publications office (or a similar facility) or by a copy editor, prior to submission.

Abstracts must be original and must not be or have been published or presented at any other meeting prior to the Congress. Abstracts containing updated information or modified data to previously published or presented abstracts will not be considered or accepted for presentation.
Please note that each person may submit up to 3 abstracts as a presenting author.

Upon submission, the Abstract Submitter confirms that the abstract has been previewed and that all information is correct, accepts that the content of this abstract cannot be modified or corrected after final submission and is aware that it will be published exactly as submitted.

Submission of the abstract constitutes the authors‘ consent to publication (e.g. Congress Abstract Book, CROSS website, Programmes, other promotion, etc.).

The Abstract Submitter warrants and represents that he/she is the sole owner or has the rights for all the information and content ("Content") provided to CROSS 14 (“Organisers”). The publication of the abstract does not infringe any third party rights including, but not limited to, intellectual property rights. The Abstract Submitter grants the Organisers a royalty-free, perpetual, irrevocable nonexclusive license to use, reproduce, publish, translate, distribute, and display the Content.
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Upon submission the Abstract Submitter confirms that the contact details saved in the system are those of the corresponding author, who will be notified about the status of the abstract. The corresponding author is responsible for informing the other authors about the status of the abstract.

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SCIENTIFIC PROGRAM

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AGENDA

Tuesday
April 10, 2018

School of Medicine, Šalata 3

11:00 - 16:45

Arrival and Registration
Registration Desk in front of Čačković Hall

17:00 - 18:30

Opening Ceremony
Čačković Hall

Welcome Messages
Rector of the University of Zagreb
Dean of School of Medicine
President of the Croatian Medical Chamber
President of the Student Council
President of CROSS 14 Organising Committee

Introductory Plenary Session
Čačković Hall

Andrija Štampar - Great Man from a Small Country
Prof. Mirjana Kujundžić Tiljak, MD, PhD
"Andrija Štampar" School of Public Health

Lifestyle and Brain Health
Prof. Vida Demarin, MD, PhD
Croatian Academy of Sciences and Arts;
International Institute for Brain Health

Three Questions About The Future Of Medicine For the Health Promotion Leaders
Prof. Stjepan Orešković
Chairman of the Advisory Board and Lead of the Center for Research and Promotion of the Best Practice at Zagreb School of Medicine

18:30 - 20:00

Buffet Dinner
In front of Čačković Hall

Wednesday
April 11, 2018

9:00 - 11:00

Zagreb Sightseeing Tour
Meeting point on Ban Jelačić square

School of Public Health, Rockefeller Street 4

9:00 - 12:00

Arrival and Registration
Registration Desk in
School of Public Health lobby

12:15 - 14:00

Poster Session 1
School of Public Health lobby

14:00 - 15:00

Buffet Lunch
School of Public Health patio

15:00 - 17:00

Plenary Session 1
School of Public Health A & B Hall

European policy for Health 2020, platform for 2030 Agenda for sustainable development
Prof. Antoinette Kaić-Rak , MD, PhD
World Health Organization, Country Office in Croatia

Where is Health Promotion in Croatia?
Asst. Prof. Aleksandar Džakula, MD, PhD
"Andrija Štampar" School of Public Health

21st Century Epidemic
Prof. Ninoslav Mimica, MD, PhD
Psychiatric Hospital Vrapče, Zagreb

17:00 - 19:00

Workshop Session 1 *(page 24)*
School of Public Health C, D, E, O Halls

AGENDA

Thursday
April 12, 2018

9:00 - 12:00

Vrapče Museum Tour
Meeting point on Ban Jelačić square

School of Public Health, Rockefeller Street 4

12:30 - 14:00

Poster Session 2
School of Public Health lobby

14:00 - 15:00

Buffet Lunch
School of Public Health patio

15:00 - 16:00

Plenary Session 2
School of Public Health A & B Hall

Mental Health: Client in the Center!
Prof. Danijela Štimac Grbić, MD, PhD
Croatian Institute of Public Health

Use of Social Media in Public Health Campaigns
Asst. Prof. Tea Vukušić Rukavina, MD, PhD
"Andrija Štampar" School of Public Health

16:00 - 18:00

Workshop Session 2 *(page 24)*
School of Public Health C, D, E, O Halls and UHC Zagreb

19:00 - 21:00

Galla Dinner
"Andrija Štampar" restaurant, 3rd floor

Friday
April 13, 2018

School of Public Health, Rockefeller Street 4

10:00 - 11:30

Poster Session 3
School of Public Health lobby

11:30 - 12:00

Coffee Break
School of Public Health lobby

12:00 - 13:30

Poster Session 4
School of Public Health lobby

13:30 - 14:00

Buffet Lunch
School of Public Health patio

14:00 - 16:00

Plenary Session 3
School of Public Health A & B Hall

Alternative Medicine: Past, Present, Future
Prof. Robert Likić, MD, PhD
Unit of Clinical Pharmacology, University Hospital Centre Zagreb

Healthy Living
Asst. Prof. Sanja Musić Milanović, MD, PhD
Croatian Institute of Public Health

Multidisciplinar approach to colorectal cancer screening
Prof. Nataša Antoljak, MD, PhD
Croatian Institute of Public Health

16:00 - 18:00

Workshop Session 3 *(page 24)*
School of Public Health C, D, E, O Halls

HOLLYWOOD vanity club, Tuškanac 1

23:00

After Party

Invited Speakers

Biographical Notes

Professor Mirjana Kujundžić Tiljak, MD, PhD

Director of "Andrija Štampar" School of Public Health

Head of Department of medical statistics, epidemiology and medical informatics

Medical doctor, specialist of social medicine and organization of health care, professor of biostatistics, Head of Chair for medical statistics, epidemiology and medical informatics at University of Zagreb School of medicine since 2013 and director of Andrija Stampar School of Public Health since 2016.

She graduated from the University of Zagreb School of Medicine in 1988, M.sc. in 1995 and PhD in 2000. Specialist in social medicine and health care organization since 1993. At the Andrija Stampar School of public health is employed since 1990 and in 2015 she was elected full professor at the Department of Medical Statistics, Epidemiology and Medical Informatics. She is teaching undergraduate and postgraduate students in field of medical data analysis and participate in many scientific research in medicine and public health. She has published over 100 scientific and professional papers, including chapters in professional books. The scientific and professional field in which she made the most achievements is public health and health care, biostatistics and data analysis in medical research.

Since 2017 she is the president of the Biomedical Council of the University of Zagreb. During and after the Homeland War she participated in solving problems of refugees and other civil war victims.

Professor Vida Demarin, MD, PhD, FAAN, FAHA, FESO, FE

Full member of Croatian Academy of Sciences and Arts

Vida Demarin graduated from School of Medicine, University of Zagreb, Croatia, where she gained her Master of Science thesis and Doctor of Philosophy degree. She finished her residency in neuropsychiatry in Sestre milosrdnice University Hospital Centre, Zagreb, Croatia.

She was Head of Department of Clinical Neurology and Centre for Neurological Sciences and Brain Research in University Hospital Centre “Sestre Milosrdnice” (1994.-2012.), medical director of Medical Centre Aviva (2012-2015.), director of International Institute for Brain Health (2015.-on going).

Professor Demarin’s field of interest is stroke prevention and management, neurodegenerative disorders and dementia, headache and migraine, neuroplasticity, neuropathic pain and neurorehabilitation.

She is a full member of Croatian Academy of Sciences and Arts. She authored about 1000 papers in national and international journals, several chapters in books, organized and participated in numerous symposia, seminars, conferences and congresses. She is a founder and one of directors of Summer Stroke School, Healthy Lifestyle and Prevention of Stroke and Other Brain Impairments in Interuniversity Centre in Dubrovnik.

She is a member of numerous national and international professional societies and she serves on various scientific Advisory, Editorial and Review Boards.

Professor Stjepan Orešković

Chairman of the Advisory Board and Lead of the Center for Research and Promotion of the Best Practice at Zagreb School of Medicine

Stjepan is a behavioral scientist, researcher and educator serving as the director of the WHO Collaborating Centre for HIV Strategic Information and Chairman of the Advisory Board of the Center for Research and Promotion of the Best Practice in HealthCare based at Zagreb School of Medicine.

He worked with LSE, LSHTM, HSPH, Bocconi, Trieste, and Ljubljana Universities. He is a Fellow at Institute of Coaching at McLean Hospital, Harvard Medical School Associate, Harvard Medical School Department of Global Health and Social Medicine Center for Bioethics Fellowship Alumni and Harvard Radcliffe Institute for Advance Science Universities Roles and Responsibilities workshop team member. He leads the global GRAND award project (2018-2020) involving experts from HMS - Massachusetts General Hospital, Ljubljana and Zagreb School of Medicine. He advised The World Bank, EU Commission, and WHO.
Stjepan is a best known for his "Štampar style" projects fostering innovative health care interventions and research in the area of tobacco control, obesity prevention and new types of addictions including internet addiction. His pivotal projects were featured in the Lancet and the BMJ, and he was quoted in Reuters, CNN, BBC, NBC, Associated Press and RTL and The Huffington Post.

Professor Antoinette Kaić-Rak, MD, PhD

Head of World Health Organisation Country Office in Croatia

Antoinette Kaić- Rak is a tenured professor at the University of Zagreb School of Medicine. She was born in 1959 in Virovitica.
She is a specialist in social medicine with organization of health care. She graduated from the School of Medicine, University of Zagreb in 1982, got her MSc in 1990, and obtained her Ph.D.degree in 1996. at the University of Zagreb. The title of her dissertation was "The Role of diet and other life styles in the development of intestinal metaplasia - precancerous lesion of gastric cancer". Kaić- Rak worked at the Croatian Institute for Public Health and for the World Health Organization. She is the Head of WHO Country Office in Croatia.

Her scientific interests and over more than 120 of her published scientific articles are in the domain of public health. In 1997 she became an associate member of Croatian Academy of Medical Sciences, a full member in 1999, and was the president of the Collegium for Public Health until 2017.
She is awarded with the Homeland Gratitude Testimonial.

Asst. Professor Aleksandar Džakula, MD, PhD

Andrija Štampar School of Public Health

School of Medicine, University of Zagreb

Aleksandar Džakula is an expert and specialist in the field of Public Health Medicine – Organization of Health Care Services.

He has over 15 years of experience in the field of health care services analysis, research and development in Croatia and internationally. He actively participated as an expert and project manager in many activities and programs relating health care.
His focus is in organizational changes in health care system, particularly in health care system management and processes in the public administration. He published more than 30 articles in the international scientific and professional publications with peer review. He has experience working as a consultant, project manager and trainer in the area health care analysis and planning.

Professor Ninoslav Mimica, MD, MSc, DSc, Primarius

Psychiatric Hospital Vrapče, Zagreb

Ninoslav Mimica is a professor of Psychiatry at School of Medicine, University of Zagreb. Currently he is a Head of Department for Biological Psychiatry and Psychogeriatrics at University Psychiatric Hospital Vrapče in Zagreb. He is a subspecialist in biological psychiatry and forensic psychiatry. He is a president of Croatian Association for Alzheimer's Disease and Old Age Psychiatry, Cro-MA and President of Alzheimer Croatia.

On his initiative, the Croatian Alzheimer Alliance was established, and now has 30 members societies/NGOs. He is an international fellow of American Psychiatric Association, member of European Psychiatric Association, and Croatian representative in Alzheimer's Disease International and Alzheimer Europe. He is a court expert in the field of Psychiatry, with experience of working for ICTY, Hague, Netherlands. He was involved in translations of ICD-10 Classification of Mental and Behavioural Disorders, DSM-IV and DSM-5 into Croatian language.

His expertise on various scientific fields such as biological psychiatry, adult psychiatry, old age psychiatry, psychopharmacotherapy including clinical trials is supported by more than 600 abstracts, articles, chapters and books that he has authored or co-authored, providing extended knowledge on matters of those scientific areas. For his scientific and professional work he was rewarded several times.

Professor Danijela Štimac Grbić, MD, PhD

Head of Department for Mental Health and Addiction Prevention

Croatian Institue of Public Health

Danijela Štimac Grbić is Head of Department for Mental Health and Addiction Prevention at the Croatian Institute of Public Health, and Associate professor at the Department of Social Medicine and Organization of Healthcare at the Faculty of Medicine, University of Zagreb.

She is also Professor at postgraduate university study of Public Health, Epidemiology and School medicine. She is Croatian focal point for alcohol, and Croatian representative in The Committee on National Alcohol Policy and Action (CNAPA). Prof. Štimac Grbić was RTA Couterpat at EU Twinning project "Ensuring optimal health care for people with mental disorders", conducted from 2016 - 2017, by Trimbos Institute Netherland and Ministry of Health, Croatia.

She published numerous scientific papers in international and Croatians journals. Prof Štimac is currently involved in the scientific research project of the University of Zagreb "Analysis of Child and Youth Injuries Patterns from 1995 to 2017", and as researcher for Croatia on Horison 2020" Recover E" scientific project.

Asst. Professor Tea Vukušić Rukavina, MD, PhD

Andrija Štampar School of Public Health

Department of Medical Sociology and Health Economics

Tea Vukusic Rukavina is an Assistant Professor at the Department of Medical Sociology and Health Economics at the Andrija Stampar School of Public Health, School of Medicine, University of Zagreb. In 2011 she obtained her PhD in Public Health, in 2012 she specialized psychiatry. Since 2016 she is deputy director for health promotion of the Andrija Stampar School of Public Health.

From 2002-2008 she was assistant coordinator of the "County Public Health Capacity Building Project – Healthy Counties" program that won Management Training Excellence Award in 2006 and Global Health Program of Distinction Award in 2013 from Sustainable Management Development Program, Division of Public Health Systems and Workforce Development, Centers for Disease Control & Prevention, Atlanta, GA, USA. Assist Prof Vukusic Rukavina was a project leader of the project “Picture of mental illness in Croatian, Czech and Slovak print media” (2009 – 2011) which was a part of the Finance and Mental Health Services Training in Czech Republic/Central Europe coordinated by the Global Center for Health & Economic Policy Research, University of California, Berkeley. From 2012 - 2016 she was a visiting faculty at the program Socio-Economics of Mental Health Delivery in SE Europe coordinated by University of California, Berkeley and Babes-Bolyai University Cluj-Napoca, Romania.

Since 2002 she is a director of the Media and Health Course, annual course that promotes collaboration among journalists and health professionals. Her main areas of interests are media and health, management of mental health services, mental health promotion, social marketing campaigns and qualitative methodology. Tea Vukusic Rukavina is an author of more than 40 scientific papers of which more than 15 are published in journals indexed in Current Contents. She is reviewer in several scientific journals. She is a member of Croatian physicians’ chamber.

Professor Robert Likić, MD, PhD

University Hospital Centre Zagreb

Department of Internal Medicine

Unit of Clinical Pharmacology

Robert Likić qualified in Medicine with honors in Zagreb in 2001, after receiving the Dean’s award for the best student of the University of Zagreb Medical School in 1999. He became board certified in internal medicine in 2007 and was awarded a PhD degree in 2008.

He currently works as an associate professor of internal medicine at the Zagreb Medical School and as a consultant physician at the Clinical Hospital Centre Zagreb and continues to have an active research interest into health outcomes measures, medical informatics and rational prescribing of medicines. Dr.Likic is involved in teaching at undergraduate and postgraduate levels and collaborates with several leading international academic and scientific institutions.

He is a member of the committee for education of the European Association for Clinical Pharmacology and Therapeutics (EACPT) and a councilor to the International Union of Basic and Clinical Pharmacology (IUPHAR). Dr. Likic received the “Outstanding Early Educator Award” at the 16th IUPHAR World congress of basic and clinical pharmacology held in 2010 in Copenhagen (Denmark).

Asst. Professor Sanja Musić Milanović, MD, MPH, PhD

Head of Division for Health Promotion

Croatian Institue of Public Health

Sanja Musić Milanović was born in Zagreb where she finished elementary and high school education. She graduated from the School of Medicine, University of Zagreb. She attended the International postgraduate study “Master in Public Health Methodology” at the Université Libre de Bruxelles, Faculté de Médecine, Ecole de Santé Publique, where she graduated with the Masters in Public Health degree. She acquired a title of PhD from the School of Medicine, University of Zagreb, on the topic "Demographic, Behavioral and Socio-Economic Determinants of Adult Obesity in Croatia".

Currently she works half time as assistant professor at the University of Zagreb, School of Medicine, Department of Medical Statistics, Epidemiology and Medical Informatics, and half time at Croatian Institute of Public Health (CIPH) as the head of Division for Health Promotion, Reference Center of the Ministry of Health for Health Promotion. Her work at the CIPH includes the supervision of National Program “Healthy Living”, and national representative positions in the World Health Organization’s Working Group on Obesity Prevention and in European High Level Group on Nutrition and Physical Activity.

In addition, she works as the principal investigator for the World Health Organization’s “Childhood Obesity Surveillance Initiative – COSI” project in Croatia. She has co-authored the book "Obesity and Treatment", and published 21 original scientific papers in CC journals.

Professor Nataša Antoljak, MD, PhD

Head of Department for Adult Population Screening

Croatian Institute of Public Health

Nataša Antoljak was born in 1963 in Zagreb where she graduated piano from the Music Academy in 1985, in 1987 from University Zagreb Medical School, and at the same year postgraduate study at the Music Academy. She passed the state exam in 1988 and finished Postgraduate study in Alergology and clinical immunology and defended master thesis in 1996. She defended dissertation in 2003 and after was that elected to title higher assistant.

She was elected in 2007 in the academic rank of assistant professor at the University Zagreb Medical School, and associated professor in 2013. From 1988 - 1991 she worked as a piano teacher, from 1991 - 2003 as a research assistant on project and a resident doctor in CHC Zagreb, and CH Sisters of Mercy. Since 2004 - 2007 she specialized Epidemiology at the Croatian National Institute of Public Health. Since 2008 she is a member of the Commitee for the colorectal cancer screening program coordination at Ministry of Health and national coordinator.

She has been working on all aspects of the development and implementation of the National Program, IT support, organization and ethics, monitoring and evaluation, planning promotional activities and education. She participated in four projects and is an author of many scientific and other papers.

Poster Presentations

P1 Knowledge and attitudes of Montenegrin students toward epilepsy: We need a change
Milovan Roganović, Emilija Delević, Oleg Cmiljanić, Stefan Bojović, Slavica Vujisić

P2 Pathological changes in EEG are more predictive for subsequent epilepsy in recurrent than in complex febrile seizure type
Alja Kavčič, Nina Kajdič

P3 Effect of vagus nerve stimulation therapy on quality of life
Nina Kajdič, Alja Kavčič

P4 The quality of sleep among students of various health studies at the University of Osijek
Ivana Šimić, Marija Olujić, Maja Miškulin

P5 Abdominal pain syndrome in children and adolescents
Marija Drakul, Aleksandra Ljubojevic, Stefan Kulic

P6 Reconstruction of soft tissue defects of the fingers with second and third dorsal metacarpal artery perforator flaps
Stefan Kulic, Marija Drakul, Aleksandra Ljubojevic

P7 The role of glutamine metabolism in differentiation of acute monocytic leukemia cells
Ivan Kodvanj, Vilma Dembitz, Dora Vlšnjić

P8 Awareness, smoking – related attitudes and behavior among medical students in Montenegro
Emilija Delević, Milovan Roganović, Oleg Cmiljanić, Stefan Bojović

P9 Peer-bullying between the university students at the Josip Juraj Strossmayer University of Osijek
Terezija Berlančić, Monika Tomin, Ivan Miškulin, Maja Miškulin

P10 The association between parvalbumine expression and anxiety-like behavior in rodent model of prenatal androgenisation
Danijel Škrijelj

P11 Kidney failure in multiple myeloma patinets
Petra Smajić, Ema Schonberger, Kristina Kralik, Vlatka Periša, Lada Zibar

P12 How safe skiing with helmet is? A literature review.
Filip Tudor, Paulo Zekan

P13 Brain injury analysis through graph metrics
Alja Kavčič, Jure Demšar

P14 Characterization of ictal EEG phenomena – Role of Fourier analysis
Nemanja Useinović, Marko Vorkapić, Daniel Škrijelj, Anida Ademović

P15 Superior anterior pancreaticoduodenal vein (SAPDV) ligation followed by duodenal lesion in rats and therapy with stable gastric pentadecapeptide BPC 157
Helena Žižek, Ivan Krezić, Filip Radevski

P16 The Effect of Gastric Pentadecapeptide BPC 157 on Salt-Induced Hypertension in Rats
Filip Radevski, Pavla Peraić, Helena Žižek

P17 BPC 157 effect on psoriasis
Mariam Samara, Ivan Krezić, FIlip Radevski

P18 Heterotopic ossification and BPC 157 therapy
Mariam Samara, Marko Antunović

P19 Effects of the pentadecapeptide BPC 157 on Budd-Chiari syndrome wistar rat model
Slaven Gojković, Dominik Malekinušić, Emma Oreskovic

P20 Effects of the pentadecapeptide BPC 157 on cerebral ischemia in a bilateral carotid artery ligation wistar rat model
Slaven Gojković, Marko Antunović, Pavla Peraić

P21 Effects of the pentadecapeptide BPC 157 on cerebral venous outflow after bilateral ligation of the jugular vein in a wistar rat model
Slaven Gojkovic, Helena Zizek, Dominik Malekinušić

P22 Comparison of the most important public health indicators between Croatia, Serbia and Slovenia
Luka Štimac, Lucija Firi

Case Reports

P23 Significance of angiography in BPC 157 studies – superior mesenteric vein ligation in rats
Dominik Malekinušić, Borna Vrdoljak, Marko Antunović

P24 Efficacy of postoperative pain relief after minimally invasive aortic valve replacement: A comparison of two methods of local anesthetic wound infiltration
Jan Mark Leskovec, Hana Kavčič

P25 Effects of pentadecapeptide BPC 157 on oxidative stress caused by isoprenaline-induced myocardial infarction in rats
Emma Oreskovic, Mariam Samara, Ivan Krezic

P26 The effect of pentadecapeptide BPC 157 on the occlusion of the abdominal aorta in rats
Ivan Krezić, Filip Radevski, Marko Antunović

P27 The effect of pentadecapeptide BPC 157 on the rat eye fundus after high salt diet
Pavla Peraić, Helena Žižak, Slaven Gojković

P28 Bullying and intervention programs
Ana Matejčić, Marija Štracak, Marjeta Majer

P29 Student Awareness of Climate Change Impact on Human Health
Anja Tomić, Mirna Rozić, Ivan Miškulin

P30 Policy decision making
- the policy coil tool in the low vaccination rates
Maja Banadinović, Tihana Kuljiš

P31 Studying the hypolipidemic action of the liposome vector: Correction of physiological metabolism
Valeriia Orlenko

P32 Pentadecapeptide BPC 157 and Achilles tendon injury in rats
Ivan Krezić, Borna Vrdoljak, Dominik Malekinušić

C1 Neonatal diabetes mellitus in a premature newborn with Down syndrome
Dora Jelinek, Matea Klanac, Rebeka Ribičić

C2 Deficiency of factor XIII in patient with spontaneous subdural hemorrhage and pancytopenia due to hypersplenism – a case report
Lucija Zlopaša, Dražen Pulanić

C3 Haemolytic anaemia causing severe neonatal distress
Alja Kavčič, Nina Kajdič

C4 Chronic Graft-versus-Host Disease: The importance of multidisciplinary approach
Matija Brataljenović, Dražen Pulanić

C5 Preeclampsia after donor egg in vitro fertilization and embryo transfer: an immunological issue?
Ivana Paljk

C6 Clinical presentation of rare 21q22.3 microduplication syndrome
Maja Turjak, Ana Spajić, Silvija Pušeljić

C7 Secundipara with third degree perineal rupture
Marija Olujić, Ivana Šimić, Darko Čuržik

C8 Induction of Spermatogenesis in Male Patients with Gonadotropin Deficiency
Luka Švitek, Luka Perić, Nora Pušeljić, Ema Poznić, Silvija Canecki-Varžić

C9 Post-STEMI complications in patient with systemic lupus erythematosus and secondary antiphospholipid antibody syndrome
Nora Pušeljić, Ema Poznić, Luka Švitek, Luka Perić, Vedrana Baraban

C10 Wide clinical manifestations of adrenal insufficiency-case report
Ema Poznić, Luka Švitek, Luka Perić, Nora Pušeljić, Silivija Canecki-Varžić

C11 Post-heart transplant tricuspid infective endocarditis
Žan Kovačič

C12 Hyperthyroidism and molar pregnancy
Vita Andreja Mesarič

C13 Treatment of geriatric patient in joint contractures with intertrochanteric fracture where positioning on extenstion table is not possible
Urban Kurent

C14 Recognition and treatment of acetic acid ingestion: A case report
Črt Loboda

C15 Isthmocele – the neglected complication of Caesarian section
Tjasa Oblak

C16 Ventricular tachycardia induced by high-septal pacemaker lead position
Nina Kajdič, David Žižek

C17 Surgical treatment of a patient with cutaneous nocardiosis
Urban Kurent

C18 Left anterior descending coronary artery muscular bridge
Nina Kajdič, Alja Kavčič, David Žižek

C19 Emotions and hallucinations
Robert Rončević, Krešimir Šantić, Alen Rončević, Andrijana Mišković, Dunja Degmečić

C20 Newly diagnosed temporal arteritis in a patient with polymyalgia rheumatica in remission – case report
Sara Hrg, Marko Ivić, Mislav Cerovec

C21 Pneumococcal meningitis as a complication of otitis media
Vita Andreja Mesarič

C22 Worsening of coronary heart disease caused by dyslipidemia and homocysteinemia: a case report
Sebastijan Spajić, Perica Međimorec, Adrijana Mesić, Alma Mešinović, Ivana Mihaljević, Diana Muačevi-Katanec

C23 Acute appendicitis with unusual presentation
Sanja Badrić Ranilović, Darjan Ranilović

C24 Complex Course of Influenza: A Case Report
Teja Zadravec, Špela Grilc

C25 Public Health Challenges in Adolescent with Epilepsy: A Case Report
Teja Zadravec

C26 Uterine leiomyoma: A case report
Špela Grilc, Teja Zadravec

C27 Systemic lupus erythematosus associated with acute transverse myelitis
Andrijana Kološa, Ana Kovačević

C28 Deep vein thrombosis with pulmonary embolism and Influenza B infection
Matija Mozetič, Manja Grašek

C29 Gallbladder perforation with hemoperitoneum
Manja Grašek, Matija Mozetič

C30 Decompensated heart failure caused by pneumonia
Matija Mozetič, Manja Grašek

C31 Treatment of grade 3b open tibia fracture after explosive injury
Lenart Zore, Ivan Dobrić

C32 Spontaneous pneumothorax in adolescent male
Špela Grilc, Silvija Mörec Jakopič

C33 Giant frontoethmoidoorbital mucocele as a late complication of orbital cellulitis
Petra Bistrovic, Dora Bonacin, Marko Velimir Grgic

C34 Intermediate-high-risk pulmonary embolism
Manja Grašek, Matija Mozetič

C35 Thrombophlebitis of the great saphenous vein
Manja Grašek, Špela Grilc

C36 Bullous Pemphigoid
Špela Grilc, Manja Grašek

C37 Clinical Case: Sickle Cell Crisis Exacerbated by Malaria Infection
Barbara Zupanc

C38 Fragile x syndrome and correspondence with premature ovarian insufficiency
Luka Perić, Nora Pušeljić, Ema Poznić, Luka Švitek, Silvija Canecki-Varžić

Workshops

Session 1

Wednesday, April 11

W1 Primary wound care workshop
Zlatan Ibradžić, Lenart Zore

W2 DIY: Healthy Breakfast
Dunja Leskovar, Iva Lukačević, Laura Pavičić, Emanuel Brađašević, Damir Martinović, Sara Lovrenović, Marta Horvat

W3 Interpretation of acid base disorders
Matej Jelić, Ivona Kovačević and Iva Topić

W4 Ultrasound workshop - basics with clinical features
Dorja Sabljak, Ema Mjeda, Iva Mohler, Dora Martinčević

Session 2

Thursday, April 12

W5 StEPP Emergency Medicine Workshop
Iva Miličić, Nia Lucija Naletilić, Klara Klarić, Lucija Dabić, Ivona Šamle, Adriana Babić Petra Jagarinec, Iva Ivković

W6 Basics of - How to design a public-health action?
Sandro Gašpar, Deni Rkman, Iva Hižar, Sara Mudri

W7 ECG - Clinical examples
Dražen Juraj Petrović, Lucija Marinović, Antun Tonko Jakobović, Matko Spicijarić

W8 Mental Health from Head to Toe
Kristina Stamenković, Katarina Mandić, Hana Lučev, Ana Stručić, Anica Sabljić

W9 Laparoscopic workshop
Josip Jaman, Yannick Mudrovčić

Session 3

Friday, April 13

W10 Open fractures management and treatment
Martin Oroz, Ivan Mlakar

W11 Students' activities – doing things right or doing the right things or...?
Dorja Vočanec, Roberto Mužić

W12 Promotion of oral health - what hides inside our mouth?
Lovro Vuger, Martina Balta

W13 Depression prevention
Lea Tomašić, Pia Saskia Müller

ABSTRACTS

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31 POSTER PRESENTATIONS

48 CASE REPORTS

69 WORKSHOPS

14th International Biomedical
Croatian Student Summit
Zagreb, April 10-13, 2018

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Abstracts

Invited Speakers

IS01

Andrija Štampar - Great Man from a Small Country

Mirjana Kujundžić Tiljak
Director of "Andrija Štampar" School of Public Health; Head of Department of medical statistics, epidemiology and medical informatics

Andrija Štampar (1888-1958) was among the leading persons in Croatian medicine and one of the most charismatic figures of the 20th century public health. He was the founder of many health-related institutions in Croatia and world-wide. In 1927, with the help of a large grant from the Rockefeller Foundation, he opened the School of Public Health and the Institute of Hygiene in Zagreb. Andrija Štampar was one of the founders of the World Health Organization, Chairman of the Interim Commission, and President of the First World Health Assembly in Geneva, 1948.

Doctor Andrija Štampar was born in the Croatian countryside 130 years ago, in Slavonian village Drenovac, as the son of a teacher. In 1906 he left Slavonia to study medicine in Vienna and got his doctoral degree in 1911. As a medical student, he initiated the editing of medical papers and wrote pamphlets and articles with the intention of educating people in health matters. Štampar began his medical career as a general practitioner in Nova Gradiška. In 1919, he joined the Ministry of Public Health in Belgrade. Due to his opposition to the dictatorship of the king, he was forced into early retirement in 1931 and returned to Zagreb, where he was elected professor at the Zagreb University School of Medicine, Department of Hygiene and Social Medicine. Since Štampar was not allowed to work in the country, he emigrated to China, where he served as a professional advisor for the Chinese government from 1933 to 1936. Upon his return to Europe, he started developing the activities of the School of Public Health but soon received a letter from the secretary of the League of Nations offering him a job at the League of Nation's Hygiene Section in Geneva. In 1938, he left for the United States, where he spent a year as a visiting professor at the Universities of Harvard, Yale, and California. When his appointment as professor at the Zagreb University School of Medicine was confirmed, he returned to Croatia. Štampar spent World War II in internment in Graz, Austria. After the War, he resumed his duties as a professor of hygiene and social medicine at the Zagreb University School of Medicine and assumed the position of the director of the School of Public Health in Zagreb. He was the Dean of the Zagreb University School of Medicine, the Rector of Zagreb University and the president of the Yugoslavian Academy of Sciences and Arts. In 1955, he received the international "Leon Bernard" award for his contributions to social medicine.

IS02

Lifestyle and Brain Health

Vida Demarin
Full Member of Croatian Academy of Sciences and Arts; International Institute for Brain Health

The idea about the importance of healthy life for brain health is present centuries ago, from Juvenalis' Mens sana in corpore sano, along with Ramon y Cajal's that Every man can, if he so desires, become a sculptor of his own brain, to the recent motto of the World Federation of Neurology: There is no health, without brain health.

Today, we have scientific proofs for these ideas. Neuroscience research, especially intensive during Decade of the Brain at the end of 20th century, especially by use of neuroimaging techniques, have clearly shown what is happening in the brain during physical exercise, during acute or chronic stress, during so called „brain fitness", as well as the importance of healthy nutrition to preserve brain health, the importance of sleep and social inclusion. We obviously have the keys to healthy brain in our hands.

Epidemiological and prospective studies have shown that regular physical activity improves cognitive functions, fights depression and protects from neurodegenerative diseases. Extensive research is going on to prove biological mechanisms that underlie such beneficial effects. Multi domain interventions could improve or maintain cognitive functions in at-risk elderly people (FINGER study, 2015.). Prevention is the key. Greater gray matter volume, measured by MRI, was found with higher aerobic activity, pointing out that it might be neuroprotective.

Results of PREDIMED study showed the value of Mediterranean diet not only for prevention of stroke, but for prevention of cognitive decline as well.

Chronic stress is an important risk factor for brain decline, killing neurons and preventing the creation of new ones. That is why strategies for coping with stress, should be incorporated in our everyday life, as well as "brain fitness" programs with wide range of possible items.

But the most important is our attitude to life, if it is full of energy and positive vibrations, then our life would be filled with health and wealth and anti-aging process would be active and successful.

IS03

Three Questions About The Future Of Medicine For the Health Promotion Leaders

Stjepan Orešković
Chairman of the Advisory Board and Lead of the Center for Research and Promotion of the Best Practice at Zagreb School of Medicine

What is the Name of the Rose?

Space medicine or the 20th century medicine? Scientific medicine, alternative medicine, social medicine, pharmaceutical medicine, health promoting medicine and integrative medicine? Or maybe evidence-based medicine, translational medicine, narrative medicine, personalized medicine, precision medicine? Last five terms represent five different focuses and methodologies to herald new ways of knowing in medicine. In our lecture, we will try to trigger a dialogue on the understanding of medical knowledge expressed through different names and concepts. Is there any common denominator for the modern medicine? The one that will help the benefits of medicine reach a wider population, both geographically and socially, by employing genomics, quantum technologies, artificial intelligence and data science integrated through interdisciplinary knowledge management for the social good. We will discuss strengths, weaknesses, opportunities and threats to the leaders of the modern and future medicine.

What to do with the Murder on the Orient Express?

What remains from the medical practice when we use the scalpel to remove three types of quality problems: overuse, underuse, and misuse of healthcare? The Institute of Medicine study has shown that 30% of medical care is not needed and estimated that about 30% of all health spending was wasted on unnecessary services. A consequence is growing public distrust of modern science and medicine. Our current methods of organizing and delivering care are unable to meet the expectations of citizens and patients because the science and technologies involved in health care have advanced more rapidly than our ability to deliver them - fairly, equally, safely and efficiently. Fundamental changes are needed in the organization and delivery of health care, building on the large body of evidence on the quality of care. What could be learned from healthcare access and quality index based on mortality of causes amenable to personal healthcare? How do you get good performers to influence the poorer performers, and how do you get poorer performers to respond? How can we define good outcomes in terms of what is meaningful and valuable to the individual patient or social groups? Maybe a good question for the future leaders.

Why the Sky's the Limit?

"Hello everyone. I've been scouring the internet trying to find more information on summer internships at SpaceX. For some background, I'm currently a medical student. I have a deep interest in space travel, specifically in how space affects the human body over prolonged stays in space." And what about your strategy to become a member of the Elon Musk's SpaceX team or Cleveland Clinic Observership Program? Does this announcement from Reddit reflect your personality, your courage, capacity or your educational institution and your ability to aspire? How would you develop network strategies, facing new social and technological challenges to deliver, assess and improve health care quality? What would Štampar promote in a present time? Would he try to break the scientific and social sound barriers by tinkering with technologies of his time, like 1938 Volkswagen and Ford T model, or would he instead rather experiment with Tesla S or Concept One?

And what does all of it have to do with self-esteem, confidence building, empathy and social sensibility, along with time management, study skills, listening and speaking skills, negotiating and team based problem solving?

IS04

European policy for Health 2020, platform for 2030 Agenda for sustainable development

Antoinette Kaic-Rak
World Health Organisation Country Office in Croatia

The world leaders in 2015 at the UN summit adopted 17 Sustainable development goals (SDGs) of the 2030 Agenda for Sustainable development. Responsibility for the achievement of these goals by 2030 is on the government, the private sector, civil society and to every individual, with particular emphasis on building intersectoral collaboration. Governments agreed to mobilize efforts to end poverty, address inequalities, undertake actions to mitigate effects of climate change, ensuring that no one is left behind. It requires building economic growth, providing education, health, jobs, social protection for vulnerable as well as protecting environment and tackling adverse climate impacts at the global level. Health and well-being for all at all ages are at the centre of the 2030 Agenda.

Since health is a political choice, all countries need to identify priorities, prepare national development plans and work on implementation of the 2030 Agenda. There is a specific health goal, Goal 3: ensure healthy lives and promote well-being for all at all ages. UN "2030 Agenda for sustainable development" and the European Health policy framework (Health 2020) aim at reaching health and well-being for all at all ages; promoting health equity; and ensuring good governance and mechanisms for effective intersectoral action for health. In the implementation process of SDGs, the member states of the WHO European Region agreed on the road map and are committed to implement the three policy frameworks : Health 2020, the Global Action Plan for the Prevention and Control of NCDs (NCD framework) and the Sustainable Development Goals (SDGs) and targets of the 2030 Agenda for Sustainable Development.

IS05

Where is the health promotion in Croatia?

Aleksandar Džakula
Andrija Štampar School of Public Health; School of Medicine, University of Zagreb

In the legal documents in Croatia health care is defined as a system of state, group and individual measures aimed

at health improvement, preservation and recovering. Also health care in Croatia is the issue of national interest and is delivered as public services rendered by health providers and health professionals.

The burden of infectious diseases in Croatia can be assessed as favorable, but last EU report on health status for Croatia showed mortality rates in from cardiovascular disease are almost twice as high as the EU average. Similar, mortality rates from lung, breast and colon cancer are among the highest in the EU, pointing to shortcomings in health care delivery and public health interventions. Also, report show "unmet health care needs are over five times higher in low income groups than in high income groups". Report ends with conclusion "investing in public health interventions to address these high rates could yield substantial benefits." On the other side Croatian citizens witness many street and media events or projects declared as "health promotion and preventive".

The aim of these presentation is to show why it is necessary for Croatia to come back to public health as "the science and art of preventing disease, prolonging life and promoting human health through organized efforts and informed choices of society, organizations, public and private, communities and individuals. Also why health promotion have to be always recognized as comprehensive process of enabling people to increase control over, and to improve, their health. As frame for these analysis concept of social determinants of health and stewardship in health are used.

PLENARY

IS06
21st Century Epidemic

Ninoslav Mimica
University of Zagreb, School of Medicine, Zagreb, Croatia; University Psychiatric Hospital Vrapče, Zagreb, Croatia

When Alois Alzheimer, German psychiatrist and neuropathologist, presented the case of Augusta D. to his colleagues on the conference in 1906, he was not aware that his family name will become one of the famous eponyms in the World. Augusta died when she was 51, after 5 years of evident clinical symptoms of forgetfulness, behavioural disturbances and psychiatric symptoms, which includes hallucinations and delusions.

At that time, this case was considered as a rare one, with clinical picture which general practitioner will only read about in textbooks. Such opinion was present for next 60 years. But after that period, the cases of Alzheimer's disease, which was the name given in honour of dr. Alzheimer, became more common in elderly. As the life span for general population, in western developed countries, became on average significantly longer, the morbidity of population also changes. As percentage of elderly in general population increases in more and more countries, that result in more cases of dementia.

Today, we are facing the epidemic of dementia, mainly caused by Alzheimer's disease, but also vascular, frontotemporal, Lewy body and mix forms are present as well. The longevity, as one of the most important achievement of human kind, unfortunately also developed a huge risk of dementia, which is almost 50% among oldest old. We assume that about 47 million people today live with dementia, and projection for 2050 is more than 115 million. New cases will occur more in non-develop countries, and disease is more associated with women, who are living longer than man. As still everybody wants to live even longer, we need to find the way to reduce other risk factors for developing dementia, such as: unhealthy life styles (high cholesterol, hypertension, diabetes, smoking), social isolation, insufficient brain activity after retirement, severe head trauma, low physical activity, etc. We believe, that if people follow five easy rules: 1. what is healthy for heart is also healthy for the brain; 2. be physically active (walk every day several km); 3. provide healthy diet; 4. keep your brain active; 5. be socially active – this may lower the risk of developing dementia in later life, for about 30%.

On the other hand, in a search for new anti-dementia drug more than hundred substances are being tested through inovative protocols, and this must sooner or later give some results. Hopefully, this intensive research in dementia field will in future result in finding the disease modifying therapies which will also help people with dementia to live well for quite long time. This will not help only persons with dementia, but also their caregivers, because Alzheimer's has huge impact on whole family.

In meantime, we all need to think how to provide the best possible care for people with dementia, regarding their stage of the disease, which also includes non-pharmacological treatments, and think how to develop dementia friendly communities and spots in our environment.

IS07
Mental health: Client in the Center!

Danijela Štimac Grbić
Croatian Institue of Public Health; Andrija Štampar School of Public Health, Zagreb, Croatia

Background: The Croatian Ministry of Health and Trimbos Institute provided Twinning project "Ensuring optimal health care for people with mental health disorders" during 2016/2017. The objective was protection and improvement of mental health including accessible and more effective treatment as well as rehabilitation of persons with mental health disorders.

Description of the problem: A shift from institute based care to community based care is necessary to give answers and state of the art treatment for people with mental disorders. The purpose is protection of mental health through strengthening community capacities and improving public knowledge about mental health issues.

Results: During the project, 275 mental health professionals were trained and 75 of them trained others. A project plan was written to facilitate the start of 10 Community Mental Health teams. Guidelines about Community Mental Health Care, Early recognition and Child and Youth mental health care were published. A media workshop was organized.

Lessons: The project strengthened national capacities

for mental health care in the community by raising the capacity of professionals who deal with mental health issues at all levels of health care, to provide services in community settings, empowering service users (people with mental illness and their family members and/or people who take care of mentally ill people). It also strengthened the collaboration of the health system and civil society organizations as well as support the inclusion of users into activities in the field of mental health, thus strengthening community support and understanding of mental health issues in general.

Main messages: Make connections on all levels, build integrated care. Use your money and resources efficiently. Make a shift in funding, from beds to teams. Be present where your clients want to be succsesful.

IS08

Use of Social Media in Public Health Campaigns

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One of the defining phenomena of the present times reshaping the world as we know it, is the worldwide accessibility to the internet. The lovechild of the World Wide Web is social media. The power of social networking is such that, the number of worldwide users is expected to reach some 2.95 billion by 2020, around a third of Earth's entire population. Social network penetration worldwide is ever-increasing. In 2017, 71 percent of internet users were social network users and these figures are expected to grow. Social media has become ubiquitous, with more people accessing Web-based content by following links on social media than through direct searches. Thus, as a platform used by the public and by health care professionals, it presents an ideal opportunity for health promotion. Social media also brings substantial change to the way organizations and individuals can communicate.

Researches postulated that social media had direct public health relevance because social networks could have an important influence on health behaviors and outcomes. However, public health agencies have not yet harnessed the full potential of social media. There is a wealth of opportunity to use social media for health promotion, through targeted messages, the ability to interact with the public, target hard-to-reach groups, and create dynamic campaigns.

There is a great deal of enthusiasm for, and interest in, using social media for public health communications, but there is little understanding of the connection between online engagement and behavior change. Few research studies have examined the success of social media in influencing health promoting behaviors. Internationally, public health organizations are keenly experimenting with using social media as tools for both information sharing and behavior change. What remains to be seen is how best to reach out to social media users and what types of messages cut through the online clutter. Strong evidence indicates that public health social marketing campaigns conducted through mainstream media can have a direct and positive effect on behavior.

Building the evidence base for conducting health promoting campaigns through social media will require both applying what is known to work in traditional media channels and developing new methods that incorporate the unique features of social media. To begin to understand how best to develop effective online social marketing campaigns, this presentation provides a summary of success factors and key lessons learnt from selected social media campaign case studies.

IS09

Alternative Medicine: Past, Present, Future

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Alternative medical treatment means health-related treatment practiced outside the health service and not performed by licensed health care professional. When patients use alternative therapies in addition to standard treatment that they receive in the hospital, it is called complementary or integrated medical treatment.

Complementary and /or alternative therapies (CAM) typically include the following methods or therapies: vitamins and minerals, food supplements, different types of herbs (also pharmacologically produced), acupuncture, reflexology, massage, aromatherapy, hypnosis, homeopathy, traditional Chinese medicine, and various body and mind techniques. The evidence in the literature, with a few exceptions, is generally of low quality, and most results are uncertain. General lack of rigorous evidence regarding the efficacy and safety for most types of CAM for treatment and symptom relief in medical patients precludes their widespread mainstream medical use. For some of the alternative treatment methods there is actually evidence of adverse events.

In conclusion, there is a need for better and more robust data regarding CAM efficacy and safety. CAM offers an array of new approaches to care and care delivery, which are now being developed and studied, and has the possibility to affect patient quality of life, disease morbidity, cost, and use of health care in the future.

IS10

Healthy Living

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In order to halt the growing trend of morbidity and mortality rates of non-communicable diseases, the Ministry of Health launched a public health program "Healthy Living" back in 2002. Taking into account the priorities of the Croatian National Health Development Strategy 2012 – 2020 and the priorities of the Public Health Strategic Plan 2013 – 2015, the Croatian Institute of Public Health developed a comprehensive Health Promotion Program "Healthy Living". In 2015, the Government of the Re-

public of Croatia declared the program "Healthy Living" as National Health Promotion Program. The implementation of the Program is multisectorial. It links non-governmental organizations, local communities, health and governmental institutions, and is supported by nine ministries and other key governmental agencies and organizations. Starting from December 2016, Program activities are co-financed by the European Union from the European Social Fund.

The overarching goals of this program are to inform, educate and sensitize Croatian citizens of all age groups, from children, adolescents, adults and elderly, about adequate physical, mental and sexual health in order to prevent obesity and provide healthier lifestyles for all.

The "Healthy Living" National Program consists of five components: "Health Education", "Health and Physical Activity", "Health and Nutrition", "Health and the Workplace" and "Health and the Environment". Through the program, health promotion activities are implemented at all levels and in all environments, working and non-working hours.

The first component, "Health Education", includes healthy nutrition and physical activity education of schoolchildren, teachers and staff with the goal of childhood overweight and obesity prevention. Additionally, in order to provide healthy meals in all elementary schools in the Republic of Croatia, 37 weekly school menus for 4 seasons were made and distributed to schools. The promotion of physical activity in schools is achieved by "Daily 10 minutes exercise plan for children" which helps teachers to perform daily physical exercises with children, and by the "Polygon for the physical activity of elementary school children", the set of equipment which enables schools with no gym or sports hall to carry out physical education curriculum. This component also includes education of school staff in mental health and education of high-school students in sexual and reproductive health and responsible sexual behavior. Second, "Health and Physical Activity" component is directed to all age groups with a focus on families and persons of older age. The main activity, "Walking towards Health", introduces walking as the most suitable physical activity for people of all ages. Third component, "Health and Nutrition", introduces easy-to-understand labelling of the products with the highest nutritional standards to enable consumers to make healthier choices. Main activity of the fourth component, "Health and the Workplace", is "Health-friendly Company" that focuses on companies, promotes health at the workplace and expresses positive health care for employees. Lastly, fifth component, "Health and the environment", by the implementation of activity "Volunteers in parks" promotes healthy lifestyles, prosocial behaviour and preservation of community environment through the organization of free time and intergenerational activities outdoors, in city parks and children's playgrounds.

PLENARY

IS11
Multidisciplinar approach to colorectal cancer screening

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Colorectal cancer (CRC) was the second leading cause of cancer mortality in both men and women in 2016 with 2.169 new cases in Croatia, (1.273 males and 896 females). Incidence is also on a second place among malignant neoplasms with 3.447 cases in 2014. (1.884 males and 1.563 females) with crude rate 73/100.000. The National Colorectal Cancer (CRC) Screening Program was established by the Ministry of Health, and invitations started at the beginning of 2008. First cycle of invitation lasted much longer due to organisational obstacles and third one is currently ongoing. Organized program must include evaluation of number of indicators and tools for quality assurance. Indicator of activities and processes and the short and long-term effects of the program can precisely detect points for improvement. IPA twining project „Improvement of Quality of the National Cancer Screening Programmes Implementation" was performed between 2016-2017 under Ministry of Health as the project main stakeholder and Croatian Institute of Public Health as beneficiary institution, as well as partners from Lithuania and Slovenia. It was divided in components: analysis of the legislative and institutional framework, preparing guidelines for organization and implementation of colorectal cancer screening program in Croatia, strengthening capacities of health professionals involved and upgrading of the screening register. During a number of workshops, there were defined many obstacles and need for intervention in parts of health system as well as financing program. Organization also means quick and precise communication between different specialists in health care system, but procedures are specific for each country and also differs on county level. These disparities should be changed during the time because one of goals is to give same level of health care for all participants in screening program. Clinical specialists usually do not think on population level, so the main responsibility is on epidemiologists and public health practitioners. They have one more responsibility because they are not decision-makers, so they must closely communicate with politicians responsible for health care system functioning and health care insurance. It was also defined that in Croatia there are complicated routes of communication on all levels, and should be simplified. It is planned to develop Croatian guidelines which will be based on European and UPSTF guidelines, but will be adopted to our system organisation.

As one of big obstacles is slow grow-up of response rate on program, it must include new approaches to population which is problem in number of other European countries. The most important is that screening is just one of components for cancer control measures, and under EU it was now changed in politics of synchronized measures against other groups of chronic mass diseases. This include continuous measures of changing life style, supporting non-smoking, and special care for higher risk parts of population through primary care.

Abstracts

Poster Presentations

P1

Knowledge and attitudes of Montenegrin students toward epilepsy: We need a change

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Key words: epilepsy, stigma, attitudes, students, Montenegro

INTRODUCTION People with epilepsy face stigma which arguably causes more suffering than the disease itself. The aim of this study was to evaluate and compare the knowledge about epilepsy amongst students in Montenegro.

MATERIALS AND METHODS This study was performed during December 2017 and January 2018 amongst students of University of Montenegro. Analyses were performed with descriptive statistical analysis. We excluded students who passed Neurology exam from our study.

RESULTS A total of 450 questionnaires were distributed, and the response rate was 91,3% (411 were retrieved). There were 144 (35.03%) male and 267 (64.97%) female respondents mean aged 21.2 Epilepsy was regarded as a neurological disease by 87,59% of students. The rank of causes of epilepsy given by respondents was brain injury (73,24%), brain tumors (65,23%), stroke (63,26%), high fever (9,98%), headache (16,06%), depression (16,79%), alcoholism (9,49%). About 77% of our students would call emergency if they were present during seizure of patient, while less than 30% of them would protect head of patient in that situation. Eighty-five percent of students of medicine, entistry and pharmacy would call emergency during seizure of patient. About 21% of students think that patients suffering from epilepsy should be always in hospital, while 63% think that patients have working disabilities. Most of our respondents (65%) think that having epilepsy is a risk for developing dementia while about 44% of them think that sports activities should be forbidden for patients with epilepsy. Three percent of students strongly agree that patients suffering from epilepsy should not have children, while 6% of them think that these patients die earlier compared with healthy population. Every third respondent would never have a relationship and 36% of them would never marry a person suffering from epilepsy. As an employer, about 10% of students would not give a job to person suffering from epilepsy. About 5% of respondents would not let their children play with a child suffering from epilepsy.

CONCLUSION Our study suggest that a lack of knowledge about epilepsy in our study group exists. Therefore, universities are required to improve the knowledge of their students about epilepsy by integrating education about health and first aid course into their curriculum. Also, it is necessary to reduce negative attitudes by public education campaigns.

P2

Pathological changes in EEG are more predictive for subsequent epilepsy in recurrent than in complex febrile seizure type

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Key words: Complex febrile seizures, recurrent febrile seizures, EEG, epileptiform discharges, epilepsy

INTRODUCTION Febrile seizures are the most common childhood seizure disorder. Majority of febrile seizures are categorized as simple. Complex febrile seizures have at least one complex feature, such as focal onset, duration longer than 15 minutes, recurrence within the following 24 hours or post-ictal symptoms. Febrile seizures can also be characterized as a single episode or recurrent seizures when they tend to re-occur in diverse febrile states. Due to low prevalence of epilepsy after simple febrile seizures, the use of EEG is not advised.

However, guidelines are not uniform regarding routine use of EEG in complex and recurrent febrile seizures. Due to the differing practices, our aim was to evaluate the predictive value of epileptiform discharges in children with complex and recurrent febrile seizures.

MATERIALS AND METHODS We reviewed the medical files of 144 children referred to our hospital due to febrile seizures from January 2009 to December 2014. Four patients were excluded from the study due to additional neurological disabilities or developmental delay at first assessment. Possible occurrence of subsequent epileptic seizures was noted and evaluated in 2017.

RESULTS Ten out of 140 children later developed epilepsy and one patient had a single epileptic seizure. Percentage of subsequent epilepsy in children with recurrent febrile seizures was higher compared to those with a single episode. In complex febrile seizures sensitivity of EEG was 100 % and specificity was 70 %. In recurrent febrile seizures sensitivity of EEG was 80 % and specificity was 59 %. Positive predictive value of abnormal EEG was 15 % in complex and 31 % in recurrent febrile seizures. Negative predictive value of EEG was 100 % in complex febrile seizures and 80 % in recurrent febrile seizures.

CONCLUSION Children with complex febrile seizures and normal EEG were unlikely to develop subsequent epilepsy. The positive predictive value of abnormal EEG was low in children with complex febrile seizures, meaning that only a small percent of those with abnormal EEG later developed epilepsy. Compared to them, a positive predictive value of abnormal EEG in children with recurrent febrile seizures was two times higher. Children with normal EEG were unlikely to develop subsequent epilepsy, since sensitivity and negative predictive value of EEG were high in both categories, particularly in complex febrile seizures.

POSTER PRESENTATIONS

P3
Effect of vagus nerve stimulation therapy on quality of life

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Key words: vagus nerve stimulation, age at implantation, treatment duration, quality of life

INTRODUCTION Epilepsy is one of the most prevalent neurological conditions and a significant cause of disability and mortality. Despite many antiepileptic drugs, 20-30 % of patients have drug-resistant epilepsy. Those who are not suitable candidates for surgery or had insufficient benefit from it, can benefit from the adjunctive therapy with vagus nerve stimulation therapy. Vagus nerve stimulation therapy is not only associated with the decrease of seizure burden but also with the improvement in health-related quality of life. The aim of our study was to review the effect of vagus nerve stimulation therapy on quality of life parameters in all implanted Slovenian patients with drug-resistant epilepsy, focusing in particular on the impact of the age at vagus nerve stimulator implantation and the duration of epilepsy before the implantation, as the possible predictors of better outcome.

METHODS We conducted a retrospective study of 39 out of all 48 epilepsy patients who had vagus nerve stimulator implanted in Slovenia between 2005 and 2015. The outcome was assessed by questionnaires in 2016. The quality of life was assessed by the following parameters: alertness, concentration, energy, memory, mood and progress in schoolwork. Parents, guardians or patients themselves assessed quality of life parameters changes as better, unchanged or worse than before vagus nerve stimulation therapy.

RESULTS We found positive effects of vagus nerve stimulation therapy on most quality of life parameters in one third of patients, which is consistent with some other studies: improved alertness in 33.3 %, concentration in 41.0 %, energy and mood in 38.5 %, progress in school work in 23.1 % and memory in 17.9 % of patients. Improved quality of life were more often observed in patients implanted before the age of six. Shorter duration of epilepsy was significantly associated with quality of life improvement.

CONCLUSIONS The focus on quality of life parameters has become an important issue in the management of drug-resistant epilepsy patients. Our study confirmed that vagus nerve stimulation therapy has positive effects on quality of life. Implantation at a younger age and shorter duration of epilepsy before implantation could be important predictors of positive outcome.

P4
The quality of sleep among students of various health studies at the University of Osijek

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Key words: Croatia, health studies, PSQI, quality of sleep, university students

INTRODUCTION Various sleep disorders are present since the beginning of the civilization. It is estimated that about 35% of the world population suffers from some form of sleep disorder today. The quality of sleep is important for human health, because lack of sleep or poor quality of sleep is associated with a variety of disorders and diseases such as cardiovascular diseases, obesity, poor concentration and mood, increased level of risk for type 2 diabetes.

AIM To determine the quality of sleep among students of various health studies at the University of Osijek and to explore its interconnection with the students' gender, study program, success during the study, repetition of the year of study and socioeconomic status of their families.

PARTICIPANTS AND METHODS This cross-sectional anonymous questionnaire study was done during February 2018, among students of the second year of various health studies at the University of Osijek. The response rate was 95.7% (155/162). The Pittsburg Sleep Quality Index (PSQI) was used for the measurement of the sleep quality and its patterns along with the questions regarding sociodemographic characteristics' of study participants.

RESULTS The study included 155 students (113 females and 42 males). Median of the participants age was 21,00 years. The study showed that 71.6% of students had bad quality of sleep. There was no statistically significant difference between quality of sleep of students according to the attended health study, success during the study, repetition of the year of study and socioeconomic status of their families.

CONCLUSION The study revealed that quite large number of students have bad quality of sleep. However, the quality of sleep was not connected with the observed variables which points to the fact that probably some other factors such as going out late at night, alcohol abuse, drug abuse, energetic drinks abuse etc. are involved in sleep deterioration. Further studies are needed.

P5
Abdominal pain syndrome in children and adolescents

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Key words: children, abdominal pain, survey

INTRODUCTION/AIM One of the most common complaints that had been made by children and adolescents is abdominal pain. The aim of this study was to evaluate the incidence of abdominal pain syndrome in hospitalized children and adolescents.

MATERIAL/METHODS Questionnaire survey was performed among 269 children aged 7 to 17 years. The questionnaire included 48 questions on the character of abdominal pain syndrome, the frequency of abdominal pain, heredity, diet and daily regimen, concomitant disease.

RESULTS Among the respondents were 57% boys and 43% girls. Age:7-11 years were 36% of children, 12-14 years- 22%, 15-17 years- 42% of patients. 54% of children complained of the abdominal pain, among them 86% of children had intermittent pain, 18% of respondents suffered from frequent pain. Pain was equally marked by both boys and girls. Abdominal pain is the most common syndrome among children of both sexes at the age of 15-17 years. 46% of patients suffer from pain 1-2 times a month. Seasonal occurrence of pain was not found. Aching pain (34%) and lancinating pain (24%) are the most common types of abdominal pain . Most of the respondents developed the pain on an empty stomach (39%) and 1-2 hours after meals (34%). The duration of the pain is on average 20-30 minutes . Chronic diseases of the gastrointestinal tract among relatives were identified in 50% of cases.

CONCLUSION 1. Abdominal pain syndrome occurs twice as often as diagnosed chronic diseases of the gastrointestinal tract. 2. Children with abdominal syndrome need additional examination for making correct diagnosis and for prescribing an appropriate treatment.

P6
Reconstruction of soft tissue defects of the fingers with second and third dorsal metacarpal artery perforator flaps

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Key words: reconstruction, surgery, fingers, metacarpal artery

INTRODUCTION/OBJECTIVE Soft tissue defects of the fingers with exposed tendons, bones or joints are fre-

quently encountered in reconstructive hand surgery. The second and third dorsal metacarpal artery perforator flaps are used in reconstruction of the soft-tissue defects of index, middle and ring fingers. This study aimed to show our experiences in the reconstruction of fingers soft tissue defects by second and third dorsal metacarpal artery perforator flaps.

MATERIAL/METHODS Twenty nine patients with finger defects were treated at the Department of plastic, reconstructive and hand surgery, University Hospital Foca, during the period from january 2009 to december 2015 year. There were 21 males and 8 females, with an average age of 33,5 years (range, 19-71 years). These flaps were used to reconstruct soft-tissue defects after debridement of infected wounds in 17 patients, traumatic wounds in 8 patients, and after excision of skin tumors in 4 patients. The locations included 8 index fingers, 15 long fingers and 6 ring fingers. The area of defect ranged from 1.5 cm x 1.0 cm to 6.0 cm x 3.0 cm. The donors side were closed directly in all patients. The descriptive statistics were used in this study.

RESULTS The average flap size was 3,9 x 2.0 cm. Twenty flaps were based on the second dorsal metacarpal artery perforator and nine flaps were based on the third dorsal metacarpal artery perforator. Ten flaps were used to reconstruct defects distal to the proximal interphalangeal joint, and nineteen flaps were used to reconstruct defects over the proximal interphalangeal joint and proximal to it. In six cases there were venous congestion while in four patients there were partial flap loss.

CONCLUSIONS Benefits of the second and third dorsal metacarpal artery perforator flaps are quick and easy dissection, thickness and quality of the flap as well as lack of sacrifice second and third dorsal metacarpal arteries. These flaps can reliably to cover soft-tissue defects up to the proximal half of the distal phalanx. Donor site morbidity is minimised and direct closure is almost always possible.

POSTER PRESENTATIONS

P7
The role of glutamine metabolism in differentiation of acute monocytic leukemia cells

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Key words: AICAR, acute myeloid leukemia, differentiation, metabolism

INTRODUCTION Differentiation therapy of acute promyelocytic leukemia using all trans-retinoic acid (ATRA) is the most successful pharmacological therapy of acute myeloid leukemia (AML). Our previous studies have shown that 5-aminoimidazole-4-carboxamide ribonucleoside (AICAR), an agonist of intracellular energy sensing protein AMP-dependent kinase (AMPK), reduces survival, inhibits proliferation and induces differentiation in acute monocytic leukemia cell line U937 in an AMPK-independent manner. Another commonly used AMPK modulator, metformin, mimicked the effects of AICAR on proliferation and survival, but showed no differentiation properties. Since cellular metabolic phenotype is known to influence differentiation, the aim of this study is to determine whether AICAR mediates its differentiative effects by modulating cell metabolism.

MATERIALS AND METHODS To determine metabolic changes of HL60 and U937 cell lines in response to AICAR, ATRA and metformin we used commercially available kits for glucose, lactate and ammonia measurements. The expression of differentiation markers CD11b and CD64 was analysed by flow cytometry and cellular viability was assessed by trypan blue exclusion and counting on hemocytometer.

RESULTS The results show that ATRA decreases, metformin increases and AICAR has no effect on glucose consumption and lactate production in HL60 and U937 cells. However, AICAR significantly increases ammonia production in both cell lines. AICAR-mediated increase of ammonia production in U937 cells, as well as the increase in the level of CD11b, are abolished when cells are grown in medium without glutamine, which is considered to be primary cellular source of ammonia. Glutaminase 1 (GLS1) inhibitor bis-2-(5-phenylacetamido-1,3,4-thiadiazol- 2-yl)-ethyl sulphide (BPTES) also inhibits both the increase in ammonia production and the level of CD11b after treatment with AICAR. In contrast, lack of glutamine or presence of BPTES do not prevent ATRAmediated increase in the levels of CD11b and CD64.

CONCLUSION These results show that glutamine metabolism is associated with AICAR-mediated differentiation in U937 cells.

P8
Awareness, smoking – related attitudes and behavior among medical students in Montenegro

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Key words: Medical students, smoking, smoking cessation, awareness

INTRODUCTION The global smoking epidemic is a major public health concern facing the world. Health care professionals have a crucial role to play in the fight against smoking. The primary objective of this study was to estimate the prevalence of cigarette smoking among Montenegrin medical students, as well as their smoking attitudes and behavior.

MATERIALS AND METHODS In February 2018, a questionnaire-based crosssectional study was conducted at the Faculty of Medicine, in Podgorica, Montenegro. We approached currently enrolled medical students, from the 1st to 6th academic year and requested completion of the 24- item questionnaire.

RESULTS A total of 180 questionnaires were distributed and 157 complete responses were retrieved (the rate response was 87.2%). There were 65 (41.4 %) males and 92 (58.6 %) females mean aged 21.81 (SD = 2.140). Ever users of cigarettes comprised 47 of 157 students sampled (29.9%) and 37 students identified themselves as either daily or occasional smokers, yielding a prevalence of 23.6%. Majority of students (76.4%) supported restriction of tobacco smoking in public places. Fifty three point five percent (53.5%) of students believed that smoking is a serious public health problem in Montenegro. Fifty seven point nine (57.9%) of the daily smokers' parents/guardians were also smokers and this percentage was less for those who were not smokers by more than half, only 20.9% of non-smokers responded that both parents / guardians were smokers during their early years and upbringing. Our research also uncovered a statistically significant link between the relationship of the respondents' smoking status and attitude as to whether they would advise their patients to stop smoking. As much as 50% of smokers would not advise their patients to stop smoking while 73.9% of non-smokers would advise their patients to stop smoking.

CONCLUSIONS Approximately 1 in 4 Montenegrin medical students is a smoker. In general, medical students had positive antismoking attitude. The habits of the medical students' parents/guardians were a significant determinant of their individual smoking habits. Current smokers were less likely to advise their patients to quit smoking which is a major drawback in the fight against smoking. This calls for better education of our future physicians on smoking cessation.

P9

Peer-bullying between the university students at the Josip Juraj Strossmayer University of Osijek

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Key words: university students, peer-victimization, peer-bullying, questionnaire study, Osijek Croatia

INTRODUCTION Bullying is a commonly occurring problem behavior in youths that could lead to long-term health effects. It is a relatively well researched topic in elementary and high school student population. However, there are very few researches about bullying in university student population. By its definition bullying is intentional, repetitive aggressive behavior including some sort of power imbalance between those involved. Power imbalance and intention are used as criteria to separate bullying from other forms of aggressive behavior. Today there are many different forms of peer-bullying or peer-victimization. In this study we were focused on: physical and verbal victimization, social manipulation and attacks on property.

AIMS The aim of this study was to determine the extent and prevailing form of peer-bullying among students of the Josip Juraj Strossmayer University of Osijek and its connection to different demographic factors.

PARTICIPANTS AND METHODS This on-line, anonymous questionnaire study was done during February 2018 by the use of specially designed questionnaire which contained multidimensional peer-victimization scale and questions regarding the demographic data of study participants. The response rate was 98.5% (717/728).

RESULTS There were 77.7% (557/717) females and 22.3% (160/717) males; 63.0% (452/717) were younger students (first to third study year) and 37.0% (265/717) older students (fourth to six study year). Among all study participants there were further 26.5% (190/717) of those who repeated the study year and 73.5% (527/717) who did not. Finally, there were 59.0% (423/717) of students who are studying in their hometown and 41.0% (294/717) of those who are not studying in their hometown. Study revealed that students who are not studying in their hometown were more exposed to overall peer-victimization measured by the total bullying scale (p=0.012) and are also more exposed to social violence measured by the social violence scale (p=0.006). Study

also showed that males are more involved in physical violence (p<0.001), verbal violence (p=0.005) and economic violence (p=0.046), measured by the physical violence, verbal violence and attacks on property scale, respectively.

CONCLUSION Bullying is not a well recognized problem within university student population. The results of this study point to the importance of analyzing and resolving peer-bullying problem at this level of education.

P10
The association between parvalbumine expression and anxiety-like behavior in rodent model of prenatal androgenisation

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Key words: testosterone, anxiety, parvalbumine, hippocampus, rats

INTRODUCTION Gender differences in behavior and morphology of the brain are results of the testicular synthesis of the testosterone during the early development. Gender differences are expressed in spacial memory performance and anxiety-like behavior. Previous research showed inconsistent relationship between high testosterone level and anxiety behavior in female rats. The hippocampus has a long established role to regulate anxiety-like responses. A key neuron population that modulates hippocampal function is GABA-ergic interneurons, especially parvalbumin (PV) that have demonstrated a role in both anxiety and memory.

The Aim of this work was to investigate the effect of maternal androgen excess on anxiety-like behaviour and hippocampal PV expression in the female offspring.

MATERIAL AND METHODS Pregnant Wistar rats were injected with testosterone (80 mg/kg s.c., T group), while control (C) rats received only solvent. To investigate the presence of anxiety-like behavior in female offspring, the elevated plus maze (EPM) test was performed during the light phase of the cycle. All tested animals were in diestrus phase of the estrus cycle. The number of PV neurons in the hippocampus, was evaluated immunohistochemically.

RESULTS In the EPM test, offspring of T dams spent less time in the open arms ($p < 0.05$) comparing to the C group. However there was no difference in the number of open arm entries and the number of head dips between the groups. Simultaneously, prenatal T resulted in decreased expression of PV neurons in CA1 region of the hippocampus ($p < 0.05$).

CONCLUSION Our results indicate that prenatal testosterone exposure increases anxiety-like behavior in female offspring and decreased hippocampal PV expression which may underlie the changes in anxiety-state in rats.

P11
Kidney failure in multiple myeloma patients

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Key words: multiple myeloma, kidney failure, hemodialysis, plasma exchange

INTRODUCTION/AIM Multiple myeloma (MM) represents malignant plasma cell proliferation. Kidney failure occurs in nearly 25 % of patients and most often occurs as result of hypercalcemia. Retrospective studies have shown that plasma exchange (PE) can prevent acute kidney injury (AKI) which can verge into chronic kidney disease (CKD) and the need for dialysis. The focus of this study is to analyze the outcome in MM patients who required hemodialysis (HD) or PE.

SUBJECTS AND METHODS The study included 144 MM patients, 43 (29.9 %) of those required HD or PE, and the remaining 101 (70.1 %) were MM patients who did not require the aforementioned treatments. Patient data were collected from medical records at the Department of Hematology and the Department of Nephrology as well as from the register of deaths at the Clinical Institute of Pathology and Judicial Medicine of the University Hospital Osijek for the period between 1994 and 2018. The study was conducted between June 2017 and February 2018. The level of significance was set at $\alpha = 0.01$. MedCalc Statistical Software version 17.8.2 was used for the statistical analysis.

RESULTS MM patiens who did not require HD or PE treatment were significantly older at the time of their death than the patients who were treated with the previously mentioned treatments [75 (interquartile range, IQR, 72 – 77) vs 72 (IQR 66 – 75) years; P = 0.009,

Mann-Whitney test]. Among all patients who required HD or PE, the longest survival time was found in 17 patients who were treated with chronic HD (median 12 months, IQR 8 – 58).

CONCLUSION Kidney failure in MM patients was a significant determinant of the life span. Patients receiving chronic HD therapy had the longest survival time among all patients who required HD or PE therapy.

P12
How safe skiing with helmet is? A literature review.

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Key words: ski helmet, safety skiing, sound perception

INTRODUCTION/OBJECTIVES Ski helmets have recently become popular among skiers due to rising awareness about safety issues on ski slopes. Protective effect of the helmet on head injuries was confirmed in numerous studies so far. Nevertheless, some authors also investigated possible negative aspects of wearing the helmet. The aim of this review is to evaluate existing literature on the possible negative aspects of wearing a ski helmet: risk-taking behaviour and stimuli perception in particular.

METHODS The PubMed database was searched using string ski helmets[Title] OR ski helmet[Title] for original articles investigating effect of wearing a ski helmet on risk-taking behaviour and stimuli perception in humans. Based on this criteria we selected 4 articles.

RESULTS Wearing a ski helmet significantly decreases the ability to localize sounds and distance at which a sound can be heard. In addition, the helmet attenuates the sound particularly at frequencies associated with danger sounds. Furthermore, it increases reaction time to sound but not to visual stimuli. Finally, helmet-wearing skiers are more prone to risk-taking behaviour.

CONCLUSION Except proven benefits of ski helmet, ski helmet producers should give above mentioned informations which could undermine skiers safety and lead to dangerous situations on ski slopes.

P13
Brain injury analysis through graph metrics

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Key words: Brain injury, structural connectome, graph metrics

INTRODUCTION Computational network modelling and connectomics have been proven as useful tools for understanding the structural and functional connections of the brain, especially when it comes to brain injuries and rehabilitation. Our aim was to analyse the differences between focal and diffuse injuries with the help of various graph metrics. We were interested in the influence of different injury types on brain structure.

MATERIALS AND METHODS Brain structural connectomes were constructed with the use of diffuse tensor imaging. We took the structural connectome based on the images of healthy patients' brains and created two types of injuries, most commonly present in the traumatic brain injury - focal and diffuse. To compare the effects of focal and diffuse injuries, we injured the same number of connections with different lesion distribution - focally to a group of adjacent nodes or diffusely across the whole connectome. We observed various graph metrics before and after the injury. Characteristic path length is equivalent to average number of steps along the shortest paths for all possible pairs of network nodes. Modularity measures the amount of densely linked subgroups of nodes. Betweenness centrality is a measure of node's centrality - individual nodes that connect other pairs of nodes with shortest possible connections between them, have high centrality and are usually characterized as hubs. Clustering coefficient is equivalent to a fraction of the node's neighbours that are also neighbours of each other.

RESULTS Clustering coefficient decreased in both types of injuries, but more prominently in diffuse injuries. Characteristic path length increased in both cases, especially in focal injuries. Beetweenness centrality increased in both focal and diffuse injuries, more in the focal injury type. Modularity did not change in any type of injury.

CONCLUSION Both injury types caused similar changes of studied graph metrics. Number of node clusters in a brain network decreased in both, but seemed to be greater after diffuse injuries. With both injury types, potential routes for flow information lengthened and with that the potential for different region integration decreased.

Greater characteristic path lengthening was observed in focal injuries. Number of nodes, that lie on a high number of shortest paths seemed to increased in both injuries, more in focal ones. Injuries of any type did not seem to have any influence on network modularity.

P14
Characterization of ictal EEG phenomena – Role of Fourier analysis

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Key words: epilepsy, eeg, Fourier, lindane, rats

INTRODUCTION/OBJECTIVES Convenience and availability of electroencephalography makes it a valuable tool in diagnosing epilepsy. Over the last few decades there has been a growing tendency to analyze EEG signals via application of various mathematical models, such as the Fast Fourier Transform (FFT). FFT converts the signal from time domain to frequency domain, breaking the signal down into a collection of sinusoids, making the concealed data more obvious and available for examination. As a well-known neurotoxic agent notorious for its CNS toxicity, lindane was used to provoke seizures in experimental animals. The objective of this study was to define the characteristics of ictal EEG sequences on model of epilepsy induced by lindane in rats.

MATERIALS AND METHODS For the study, Wistar Albino male rates were used (n=10). A surgery was performed, during which electrodes were placed over their frontal, parietal and occipital cortices. After 1 week, lindane was administered in convulsive dose and EEG recordings were taken by 8-channel EEG apparatus. Using a software developed in our laboratory (NeuroSciLaBG), ictal EEG sequences were extracted and FFT was performed and analyzed. Individual ictal spikes were differentiated and distributed into 50 μV bins using Amplitude Histogram feature of the software.

RESULTS FFT quantified strength of the signals and expressed it as Power Spectral Density. Signal was broken into frequency bands (delta, theta, alpha and beta). Ictal sequences showed marked slowing of the signal, with theta rhythm (4-7 Hz) being undisputedly dominant. Most of the spikes were sorted into bins up to 250 μV, with higher voltage spikes infrequently present.

CONCLUSION FFT can be useful in precise detection of seizures. In lindane model of epilepsy, it highlighted the majority of waves being in theta frequency domain, with voltage spikes reaching mostly up to 250 μV. Mathematical models such as FFT might be useful in both clinical settings and experimental studies.

P15
Superior anterior pancreaticoduodenal vein (SAPDV) ligation followed by duodenal lesion in rats and therapy with stable gastric pentadecapeptide BPC 157

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Key words: duodenum, SAPDV, ligation, lesion, BPC157

AIM We focused on superior anterior pancreaticoduodenal vein (SAPDV) ligation, consequential duodenal lesion in rats and benefits with the stable gastric pentadecapeptide BPC 157. BPC 157 stabilizes blood vessels supplying the defect and enables bypassing of the obstruction through alternative vascular pathways and should thus attenuate duodenal lesions.

MATERIALS AND METHODS Albino Wistar rats were anesthetized, median laparotomy was performed, SAPDV was located and ligated. Vein congestion upon SAPDV ligation was observed and presentation of the inferior anterior pancreaticoduodenal vein (IAPDV) that bridges ligation site to the superior mesenteric vein (SMV) was used to exhibit bypassing the ligation, along with gross lesion presentation (duodenal mucosa, serosa with arteriae rectae). USB microcamera was used for recording 5 min, 15 min, 30 min, and 24 h after ligation placement. Oxidative stress assessment was performed (thiobarbituric acid (TBA) reactivity as malondialdehyde equivalents (MDA)) in duodenal tissue. Medication was bath (BPC 157 10 ug, 10 ng/kg/1ml bath/rat; L-NAME 5 mg/kg/1ml bath/rat; L-arginine 100 mg/kg/1ml bath/rat, alone and/or together; equivolume saline (controls)) administered at the ligation site 1 min after ligation.

RESULTS Control rats presented with hemorrhagic duodenal mucosal lesion more than 30 mm in diameter and serosal congestion with deteriorating blood vessels, losing collaterals and branching presentation less than 30% of the initial value, IAPDV and SMV congestion and increased lipid peroxidation. In contrast, after BPC 157 application, rats exhibited duodenal mucosal lesion

less than 10 mm in diameter and serosal congestion with improved vessel presentation, branching rose more than 60% from the initial value and there was no congestion of IAPDV and SMV. Alternative pathway through IAPDV to SMV spared the affected area and lesions were significantly mitigated. At 5, 15 and 30 min period L-NAME and L-arginine decreased duodenal lesions and the loss of vessel collaterals and branching, but their effect was insignificant after 24 h. Together, L-NAME+L-arginine antagonized each other's response (NO-related effect). All rats receiving L-NAME and/or Larginine with BPC 157 appear like rats treated only with BPC 157.

CONCLUSION BPC 157 reduces duodenal lesion and damage to the blood vessels after SAPDV ligation. In practice, this means two beneficial phenomena that should be accordant with results observed in rats.

P16
The Effect of Gastric Pentadecapeptide BPC 157 on Salt-Induced Hypertension in Rats

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Key words: hypertension, salt-induced, rats, BPC

INTRODUCTION The goal of the study was to demonstrate the effect of pentadecapeptide BPC 157 on the reduction of salt-induced hypertension in rats.

MATERIALS AND METHODS The equipment used were the Ugo Basile 58500 Blood Pressure Recorder (non-invasive) and an Ugo Basile Heating Box. Eight Wistar rats were fed NaCl-enriched food (15% NaCl) in order to induce hypertension. The control group drank water, while the treatment group drank a solution of BPC 157 with a concentration of 2 μg/mL. The 58500 BP Recorder operates by measuring blood pressure using a pressure cuff and a pulse transducer containing a piezoelectric ceramic ring that generates an electric signal when mechanically stimulated by the caudal arterial pulse of the rat's tail. The rat was preheated for 30 minutes on 35°C before the measurement in order to induce vasodilatation. Two systolic pressure readings were recorded, one measured during the cuff compression phase at the moment of the loss of pulse in the caudal artery, and other during the decompression phase at the moment of the restoration of the pulse. An average of the two measurements was also used for comparison between the control and the treatment group. Diastolic blood pressure and heart rate were also recorded. About 19 measurements per rat were made in irregular intervals over the course of 82 days.

RESULTS The difference in systolic blood pressure between the control group and the BPC 157 treated group was visible from the first day of measurement and remained visible throughout the experiment. Although both groups retained elevated blood pressure, the BPC 157 treated rats consistently had a lower systolic blood pressure than the control group for an average of 14.26 mmHg (average of control group being 153.74 mmHg and BPC group 139.48 mmHg), with the highest measured difference being 26.5 mmHg on day 61. Compared to the normal systolic blood pressure of 130 mmHg in rats, salt-induced hypertension resulted in an average 18.26% increase in systolic blood pressure in the control group, but only 7.25% in the treated group. Diastolic blood pressure and heart rate differences between the control and treatment groups were minor and not statistically significant. One rat from the treated group died at day 64, likely from complications of sodium overload.

CONCLUSION BPC 157 has shown to lower systolic blood pressure in salt-induced hypertension in rats.

P17
BPC 157 effect on psoriasis

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Key words: psoriasis, BPC 157, imiquimod

INTRODUCTION Psoriasis is a long-lasting autoimmune disease characterized by red, itchy and scaly patches of abnormal skin. It drastically decreases quality of life of affected individuals.

OBJECTIVES Administration of BPC 157 on rats with psoriatic lesions. Monitoring skin lesions and other changes if they appear.

AIM We hypothesized that psoriatic skin lesions may be reduced or even cured by therapy with stable pentadecapeptide BPC 157.

METHODS We tried to mimic psoriasis in rats by using imiquimod. Rats received a daily topical dose of 25 mg/back skin of 5% imiquimod cream for 8 consecutive days. After this eight-day treatment with imiquimod, back skin of rats displayed the three representative symptoms of thickness, erythema and scaling. BPC 157 (0.16 ng/ml/rat per day equals 10ng/kg) was given peroraly (starting

with administration after eight-day treatment), in drinking water to BPC group, while control group drank only water. The assessment was made daily.

RESULTS The repeated application of IMQ to the back of rats resulted in increases in thickness, erythema and scaling. Compared with the control group, the increases in the skin thickness, erythema and scaling induced by IMQ were inhibited in the BPC treated groups. BPC significantly inhibited thickening compared to the control group.

CONCLUSION Administration of BPC 157 visibly reduced number and diameter of psoriatic lesions.

P18
Heterotopic ossification and BPC 157 therapy

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Key words: heterotopic ossification, BPC 157, ectopic bone

INTRODUCTION Heterotopic ossification is pathologic bone formatting process in extraskeletal tissue that usually results in joint mobility deficit and therefore changes life of affected individuals.

OBJECTIVES Prevention of development of heterotopic ossification (HO) de novo and removal of already existing HO or ectopic bone (with accelerated healing of simultaneously made fractures) using BPC 157.

AIM We hypothesized that BPC 157 therapy (given as either co-treatment or post-treatment) can preserve or restore functional integrity of leg, bypass or reduce the incidence of X-ray and histological signs of HO, improve resorption of ectopic bone and fracture healing.

METHODS We used two models of heterotopic ossification, first was according to work of Zotz and assoc. (65) while the second was modification of first one. Modified model was made so that we could test simultaneous effect of BPC 157 on ectopic bone and fracture. First model was made in general anaesthesia (Ketamin-HCl 50-60 mg/kg +Xylazin-HCl 5-10 mg/kg i.p). Bone marrow (0,3 ml) was collected from the right iliac crest of the animal. Aspirated content was then injected, using thin needle of the type used for insulin injection, in the distal medial quadrant of right quadriceps muscle. Modified model used corticospongious cylinder (from right wing of ilium) that was implanted in the distal medial quadrant of right quadriceps muscle. There were four groups of rats when it comes to the treatment (control and bpc co-treatment group/control and bpc posttreatment group). BPC 157 (0.25 ng/ml/rat per day equals 10ng/kg) was given peroraly (starting with administration at day one for cotreatment and at day 28 in posttreatment), in drinking water to BPC group, while control group drank only water. The assessment and sacrifice was made at day 7, 14,21 and 28 for co-treatment group and at day 42 and 56 in post-treatment.

RESULTS Compared to the BPC groups, which had barely measurable leg length differences, measurements showed significant shortening of leg in control groups. Compressure force was also significantly decreased in control groups while it was maintained in BPC groups. X-ray showed accelerated healing in BPC groups.

CONCLUSION Administration of BPC 157 improves bone healing and resorption of ectopic bone, prevents heterotopic ossification and leg contraction (that underwent surgical procedure).

P19
Effects of the pentadecapeptide BPC 157 on Budd-Chiari syndrome wistar rat model

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Key words: BPC 157, Budd-Chiari, Collateral blood flow, Portal vein, Reperfusion

AIM To investigate the effects of the BPC 157 compound on a suprahepatic subdiaphragmatic ligation of the inferior vena cava in a wistar rat model. To analyze the effects of the hepatic venous stasis, collateral blood flow and reperfusion.

MATERIALS AND METHODS 40 male albino wistar rats of 300g average mass, divided in equal groups of 20 rats designated as control group and 20 as BPC 157 group, respectively, were used in the study. After total anesthesia had been administered with intraperitoneal injection of tiopenthal (0.15 mL/200g) and diazepam (0.2 mL/200g) a midline abdominal incision was performed and the segment of the inferior vena cava (IVC) in the suprahepatic subdiaphragmatic recess was approached. Using a rubbercushioned hemostat the segment was completely occluded for 5, 15 and 30 minutes in specific groups of animals, after which the hemostat had been released and blood flow through the IVC reestablished.

RESULTS On angiogram in each group of BPC 157

animals immediate appereance of newely opened anastomoses between the inferior and superior vena cava vascular areas had been observed, whereas congestion was prolonged in a control group of animals. After sacrificing with tiopenthal overdose, on gross pathological examination major anastomosis activation through the azygos vein had been observed. Reperfusion occurred immediately post application of the agent.

CONCLUSIONS BPC 157 has profound benefits on congestion relief and reperfusion in IVC obstruction diseases, which gives a wide array of clinical applications.

P20
Effects of the pentadecapeptide BPC 157 on cerebral ischemia in a bilateral carotid artery ligation wistar rat model

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Key words: BPC 157, Carotid artery, Cerebral ischemia, Stroke syndrome, Collateral blood flow

AIM To analyze the effects of the BPC 157 ischemia counteraction and reperfusion on cerebral homeostasis. To investigate wether this compound can have positive effects on a stroke aftermath in a living organism.

MATERIALS AND METHODS 40 male albino wistar rats of 300g average mass, divided in equal groups of 20 rats designated as control group and 20 as BPC 157 group, respectively, were used in the study. After total anesthesia had been administered with intraperitoneal injection of tiopenthal (0.15 mL/200g) and diazepam (0.2 mL/200g) an anterior midline cervical incision was performed. In the recess between the sternocleidomastoid muscle and inferior hyoid muscles carotid artery was isolated and mobilized bilaterally, with succeeding ligation with a ligature.

RESULTS On angiogram in a BPC 157 group an immediate activation of the collateral blood flow through the vertebral and communicating arteries system had been observed, which was not found in the control animal group. After the animals had been sacrificed with a thiopental overdose, gross pathological examination showed complete reorganization of the blood flow to the brain tissue in the BPC 157 group, which was confirmed with the blood vessel diameter and free radical measurements.

CONCLUSIONS BPC 157 shows remarkable effects on cerebral ischemia all modalities of ischemic tissue damage, which can prove to be invaluable in stroke patients recovery and survival.

P21
Effects of the pentadecapeptide BPC 157 on cerebral venous outflow after bilateral ligation of the jugular vein in a wistar rat model

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Key words: BPC 157, Congestion, Collateral blood flow, Cerebral ischemia

AIM To investigate the effects of the BPC 157 compound on cerebral venous stasis post bilateral ligation of the jugular veins in a wistar rat model.

MATERIALS AND METHODS 40 male albino wistar rats of 300g average mass, divided in equal groups of 20 rats designated as control group and 20 as BPC 157 group, respectively, were used in the study. After total anesthesia had been administered with intraperitoneal injection of tiopenthal (0.15 mL/200g) and diazepam (0.2 mL/200g) a midline incision of the anterior neck was performed and the jugulo-subclavian angle was dissected and mobilized bilaterally. Jugular component of the angle was ligated with a ligature on each side, respectively.

RESULTS On angiogram in BPC 157 group an immediate bypassing of blood through the vascular anastomoses found closed in control group animals, occurred, relieving the overall congestion of the cranial structures. On gross pathological examination, after the animals were sacrificed with a thiopental overdose, the Brain in BPC 157 group animals appeared not to be congested or lesioned compared to the control animal group.

CONCLUSIONS BPC 157 affects remarkably and immediately the overall blood drainage from the congested brain post bilateral jugular ligation through existing anastomoses, thereby decreasing the neural damage provoked by blood stasis, ischemia and free radical storm in a congested tissue.

P22
Comparison of the most important public health indicators between Croatia, Serbia and Slovenia

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Key words: public, health, indicators

The health of the population to a large extent influences the socioeconomic deteriminants of health such as economic growth, education, health literacy, availability of health care and lifestyles. Health indicators are used to evaluate the health status of the population by comparing indicators in different countries. Croatia, Serbia and Slovenia had the same socio-political system and equally organized health care until the 1990s. The aim of this paper is to compare the latest available health indicators of these countries and see if there are any major differences with regard to different socioeconomic conditions and different health care organizations.

MATERIALS AND METHODS The databases of the WHO and Health for All were used for the comparison of the most important public health indicators. the data that was used was the latest available indicator that was collected in the period from 2010 to 2015. As the most important public health indicators, the comparisons were made from estimated life expectancy (world health report), infant deaths per 1000 life births, standardized death rate, SDR, disease of circulatory system of all ages per 100000 of life births, SDR, malignant neoplasmas all ages per 10000, as indicators of health system organization we compare hospital beds per 100000 and total expandature as percent of GDP.

RESULTS According to the health expandature Serbia comes on the first place with 10% health expandature of GDP, on the second place is Slovenia with 9%, and on the third place Croatia with 8%. According to number of hospital beds per 10000 Croatia is first with 591 and Serbia has 552, while Slovenia has a lower 544. However according to the public health indicators, Slovenia is showing the best results,- ELE-81%, while for Croatia the ELE is 78%, and for Serbia 76%. According to the indicators of expected infant mortality Slovenia is twice better than Croatia, and three times better than Serbia. According to the rate of mortality caused by circulatory diseases Slovenia is two times better than Serbia, while Croatia is in the middle. However according to the mortality from malignant diseases Croatia is the best even though all of the three countries show mortality from the malignant diseases bigger than the average EU.

CONCLUSION According to the showed indicators of public health Slovenia is better than Croatia and Serbia, while the number of hospital beds in Slovenia is significantly lower than in the other two countries.

P23
Significance of angiography in BPC 157 studies - superior mesenteric vein ligation in rats

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Key words: epilepsy, stigma, attitudes, students, Montenegro

AIM To analyze blood flow redistribution in portal circulation after ligation of superior mesenteric vein in BPC 157/saline treated rats, using angiography.

METHODS Rats were divided in two groups: BPC 157 treated and saline treated (control) group. After ligation (suture tied around a blood vessel) of superior mesenteric vein close to portal vein, rats were given 3 ml of BPC 157 (10 μg/kg) or saline in form of peritoneal bath. 24G cannula was then inserted distally to ligature and connected to a reservoir with contrast medium (320mg iodixanol). Finally, angiography was performed. During scan, 1ml of contrast medium was given for the duration of 5 seconds.

RESULTS Blood current in BPC 157 treated rats completely bypassed blockage, shown in detail in angiography scans, while in control rats there is none or barely noticeable collateral blood flow.

CONCLUSION. BPC 157 accelerates blood flow recovery via fast activation of anastomotic blood vessels. Angiography is an excellent imaging technique to demonstrate this effect, because of its great resolution and ability to show detailed anatomy of blood vessels surrounding the ligation.

P24
Efficacy of postoperative pain relief after minimally invasive aortic valve replacement: A comparison of two methods of local anesthetic wound infiltration

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POSTER PRESENTATIONS

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Key words: wound infiltration analgesia, ropivacaine, MIAVR

INTRODUCTION/OBJECTIVES Intense postoperative pain following open-heart surgery often requires a multimodal analgesic approach. Minimally invasive heart interventions allow for pain management by the means of local anesthetic infiltration through wound catheters. The present study aims to determine whether there are significant differences in visual analogue scale (VAS) scores, local anesthetic demands and opioid demands between the group with continuous infusion and the group with single doses of local anesthetic by means of wound-infiltration analgesia. Additionally, we investigated the occurrence of catheter complications that arose during treatment.

METHODS Patients, indicated for minimally invasive aortic heart replacement, were included into our prospective, randomized, double-blind, clinical study and divided into three groups. Group K received a continuous infusion of ropivacaine and single doses of ropivacaine when they indicated their pain was equal or higher than 3 on the VAS. Group B received only single doses of ropivacaine when VAS ≥ 3. Group F received a continuous infusion of saline and single doses of saline when VAS ≥ 3. If we had a repeated measurement of VAS ≥ 3 or the pain was not localized to the operative wound, the patient received a single dose of piritramide. VAS measurements in all patients were taken every hour from the moment of extubation until 48 hours after extubation. We also tracked ropivacaine and piritramide consumption, their possible side effects and any catheter complications.

RESULTS Our primary analysis included 48 patients. None of the variables: mean VAS, number of measurements where VAS ≥ 3, number of single dose local anesthetic or saline administrations, cumulative piritramide dose, met the set value of statistical significance. Our analysis of catheter complications included 76 patients. We were able to show a statistical difference in the sum of catheter occlusion frequencies between groups.

CONCLUSIONS Wound infusion of local anesthetics is a safe and effective technique of pain relief following MIAVR surgery. In spite of both continuous infusion and single dose administration groups showing similar outcomes, more research on different methods of administration of local anesthetic through wound catheters needs to be done, altogether including more patients. When looking at the rate of catheter complications, single dose infusions seem to be less effective due to a higher rate of occlusions.

P25
Effects of pentadecapeptide BPC 157 on oxidative stress caused by isoprenaline-induced myocardial infarction in rats

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Key words: BPC 157, Myocardial infarction, Isoprenaline, Oxidative stress

AIM The aim of the study was to determine if pentadecapeptide BPC 157 served as useful therapy against isoprenaline-induced myocardial infarction / re-infarction.

MATERIALS AND METHODS Male Wistar Albino rats (200 – 250 g) 10 per experimental group. Myocardial isoprenaline lesions were induced with one or two applications of isoprenaline (75mg/kg or 150mg/kg), given once (at time 0) for initial infarct induction, and assessed 24h later; at 24h, the next application of isoprenaline was administered for re-infarct induction and assessed at the end of the subsequent 24h period. Treated rats was administered BPC 157 (10µg/kg i.p.). Oxidative stress in the collected tissue samples was assessed by quantifying thiobarbituric acid-reactive species (TBARS) as malonedialdehyde (MDA) equivalents. The extent of lipid peroxidation was expressed as MDA using a molar extinction coefficient for MDA of 1.56 × 105 mol/L/cm.

RESULTS Results showed that BPC 157 markedly attenuated lipid peroxidation assessment measured by MDA in myocardial isoprenaline lesions.

CONCLUSION This research showes that BPC 157 has therapeutic effects on isoprenaline – induced myocardial infarction in rats.

P26
The effect of pentadecapeptide BPC 157 on the occlusion of the abdominal aorta in rats

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Key words: BPC 157, abdominal aorta, occlusion

AIM We wanted to explore the effect of pentadecapeptide BPC 157 on the occluded abdominal aorta.

MATERIALS AND METHODS Female Wistar Albino rats, 300 g b. w., 10 rats per each group. Deeply anaesthetised rats underwent abdominal aorta ligation with surgical suture at the level between right iliolumbar artery and the bifurcation of the aorta. After the operation, the animals received BPC 157 and the control group received an equivalent volume of 0.9% NaCl. Rats were monitored by USB microscope camera, at period particular time points: A- one minute after application B – one hour after application; C – six hours after application; D – twenty-four hours after application. We recorded and assessed blood vessels, appearance or disappearance.

RESULTS Results showed that blood vessel presentation in control rats was decreased and the BPC 157 treated rats showed increased blood vessel presentation.

CONCLUSION This research shows that BPC 157 rescues the occluded abdominal aorta what could be therapy for the abdominal aorta occlusion in rats.

P27
The effect of pentadecapeptide BPC 157 on the rat eye fundus after high salt diet

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Key words: BPC,fundus,hypertension

INTRODUCTION The aim of this study was to demonstrate the effect of pentadecapeptide BPC157 on the rat eye fundus after high salt diet and increased blood pressure through 3 months in male Whistar albino rats.

METHODS 10 Male Whistar Albino rats weighing 200-250g were randomly assigned into 2 groups, five per each group. Animals were randomized into pentadecapeptide BPC 157 groups and control group. Both groups were fed “ad libitum” with increased salt concentration food. Pentadecapeptide BPC 157 group of animals were given pentadecapeptide BPC 157 in the dose of 10 ug/kg, in drinking water, 0.16 ug/ml/12ml/rat/day for 3 months. Control group received pure water also orally “ad libitum”. We have photographed eye fundus in few intervals during the period of 3 months.

RESULTS Results have shown slight atrophy of PNO (papila nervi optici), overfilling of veins and low filling and very thin arteries in much excessive way in control group than in BPC 157 group. These changes were presented in much lesser extent in BPC 157 group.

CONCLUSION This study has shown that there is difference in changes on rat eye fundus between BPC 157 and control group after high salt diet and increased blood pressure through extended period in time in male Whistar albino rats. In this study we suggest that BPC 157 have some organo protective activity. The effect is dependent on the action of the NO system.

P28
Bullying and intervention programs

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Key words: bullying, students, prevention

INTRODUCTION Violence among children and youth is defined as an intentional physical or psychological violent behaviour directed towards children and youth carried out by their peers with the intention of causing physical or psychological harm. It involves repetition of the same pattern and reflects an uneven balance of power. It occurs in four main forms: physical, verbal, social and psychological.

METHODS Review of the literature according to the key words: bullying, students, prevention; synthesis and analysis.

RESULTS Health Behaviour in School-aged Children (HBSC) 2013/14, a WHO collaborative cross-national study, gave an insight of the prevalence of students who were bullied and those who bulling others at least twice during last few months. Considering the share of those who were bullied at the age of 11, 13, and 15 (6.5%, 9.5%, and 7.5%), Croatia was in the lower third among 42 European countries and North America, included in the research. At the top of the ranking list was Lithuania and at the bottom were Armenia and Sweden. Considering the number of those who bullied others (3.5%, 8.5%, and 7.0%), Croatia was in the lower half of the countries covered by the research. At the top of the list were Latvia and Lithuania, and at the bottom were Sweden and Iceland. According to the Buljan-Flander, et al, in 2003, in Croatia 27% of students were bullied on daily basis, and 8% were bullies. In 2004, the Government of the Republic of Croatia adopted the Protocol on the Procedure in Case of Violence among Children and Youth. The Protocol encompasses the definition of violence, the obli-

gations of competent state authorities and other parties, forms, manner and content of cooperation among them. According to the Protocol, it is necessary to encourage parents, children and youth to report violence and to promote non-violent mutual communication models and tolerance through organizing forums, parental meetings, classes and student events.

CONCLUSION Children, youth, parents, legal representatives, educational staff and other professionals should be included in promotion of non-violence. Appropriate procedure in the area of peer violence requires active co-operation and equal contribution by all state authorities. Limiting the burden of responsibility and procedure only to a single factor (for example schools or social welfare centres) may be totally ineffective. Co-operation is prerequisite for comprehensive and quality protection of children and youth.

P29
Student Awareness of Climate Change Impact on Human Health

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Key words: university students, environment, health, questionnaire study, Osijek, Croatia

INTRODUCTION Previous and ongoing scientific studies give us an insight into the disturbing figures that reveal the pace of climate change and its undesirable impact on human health. Rising air temperatures, sea level rise and extreme weather directly and indirectly compromise human health and endanger lives.

AIMS The aim of this study was to explore the knowledge and attitudes of students of health studies at the Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek toward environmental influences on human health.

PARTICIPANTS AND METHODS This cross-sectional anonymous questionnaire study was done during February 2018, among students of the fifth year of Medical studies and among students of the second year of the Medical laboratory diagnostic studies at the Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek. The specially designed questionnaire that contained questions regarding the knowledge and attitudes toward environmental influences on human health, as well as demographic questions served as a research tool. The response rate was 50.4% (59/117).

RESULTS The mean age of all study participants was 23.1±1.4 (range 21.0 to 28.0) years. There were 23.7% males and 76.3% females; 49.2% were students of the fifth year of Medical studies and 50.8% were students of the second year of the Medical laboratory diagnostic studies. In questions related to awareness of climate change, 69.49% of students underestimated the pace of world sea level rise, 94.91% of students underestimated the pace of icebergs meltdown, 86.44% of students underestimated the number of human casualties as direct consequence of the phenomenons caused by climate change. On the other hand, 96.61% of students believe and are aware of the fact that climate change causes the emergence of new illnesses and the exacerbation of existing ones. 84.75% of students expressed their worries for future generations.

CONCLUSION Based on the conducted survey, we conclude that students are more or less aware of the scale and pace at which the climate change occurs, but still underestimate it. No matter the severity of climate change, the vast majority of students believe it does compromise human health and are concerned about the consequences for the future generations. Our students believe that even an individual can make an impact, and almost half of them actively participate in prevention of climate change on an individual basis

P30
Policy decision making - the policy coil tool in the low vaccination rates

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Key words: public health, policy, evidence-based decision making, vaccination rate, Dubrovnik – Neretva County

INTRODUCTION The project of creating a vaccination policy document was initiated with an intent to review the standpoint and action of the “anti-vaccination” movement as a huge public health problem in the Dubrovnik-Neretva County area, which has the potential to endanger the vulnerable population (children) if it is not accessed systematically, comprehensively and urgently. The aim of this paper is to show possible use and test policy coil model on the case of low vaccination rates in Dubrovnik - Neretva county. Policy coil is a new policy technique developed to enable active management of policy documents which facilitates their creation and

gives better review of information regarding the problem and allows easier updates of current changes.

METHODS Coil model was presented to local representatives of Institute of Public Health of Dubrovnik – Neretva County through the series of workshops where relevant information was collected in purpose of creating an optimal solution leading to increased vaccination rates. In an effort of making changes in the healthcare environment, we used SWOT and Force field analysis model as a useful tools in strategic planning which provide opportunities for healthcare leaders to make rapid changes while carefully considering their abilities and priorities.

RESULTS In the results, we discussed the target populations as the main stakeholders which contribute to the problem. Key contributers to the problem of low vaccination rates are the parents fear of the diseases as a vaccionation outcome, ignorance and lack of understanding of the benefits of vaccination, increased belief in "conspiracy theories" and low trust in medicine. Negative attitudes towards vaccination have also been reported among healthcare workers. Local community in cooperation with Institute of Public Health is trying to increase the awareness about vaccination benefits through various patterns of communication.

CONCLUSION There are significant limitations in describing the situation of low vaccionation rates in Dubrovnik-Neretva County. But existing data gives enough information to conclude that there is a significant risk of epidemics of contagious diseases for which vaccionation is obligatory. Particular concerns were expressed about the possible measles epidemic in the area of the city of Dubrovnik. The policy coil model gave us spectrum of evidence based solutions related to crucial stakeholders defined in the process.

P31
Studying the hypolipidemic action of the liposome vector. Correction of physiological metabolism

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Key words: DNA, gene of the apoE, transfection, cholesterolemia diet, correction

RELEVANCE Today the search continues for an effective method of transferring the required portion of the DNA (vector). The relevance of the research is the use of DNA-liposomes in experimental atherosclerosis.

MATERIALS AND METHODS The study was conducted on 15 adult male rats weighing 150-170 grams. Experimental animals were divided into 3 groups. Group 1 - intact animals, which were kept in normal conditions the pilot clinics; group 2 – animals with experimental atherosclerosis; Group 3 – animals with experimental atherosclerosis, whom the first day of the simulation of atherosclerosis gene apolipoprotein E (apoE) in the 50 mcg dose of DNA per animal were injected intramuscularly. The mixture of cationic liposomes and DNA were prepared directly before administration DNA with liposomes for 10 minutes.

THE RESULTS In animals with the preventive introduction of a gene of the apoE in the background cholesterolemia diet total cholesterol levels were less than 1.4, respectively, in comparison with the group of animals with experimental atherosclerosis without correction ($m \leq 0,05$). In animals on the background cholesterolemia diet as a prophylactic gene introduction the apoE decreases the level of cholesterol, β – lipoproteins (1.6, respectively); decreases the content of total lipids (12,5 percent), cholesterol of α – lipoproteins increased (by 30.4 percent, respectively). It was an increase in the level of pre-β lipoproteins (of 17.0 percent, respectively) ($m \leq 0.05$). In the preventive group increase of triglycerides was compared with the group of experimental atherosclerosis (respectively of 17.0 percent ($m \leq 0.05$). Gene correction prophylactically decreases the atherogenic index (50,7 percent, respectively) ($m \leq 0.05$).

CONCLUSIONS The use of liposomes as the vector has a positive effect.

P32
Pentadecapeptide BPC 157 and Achilles tendon injury in rats

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Key words: BPC 157, tendon, oedema, contractures

INTRODUCTION In this study we explored pentadecapeptide BPC 157 effects on Achilles tendon injury healing.

MATERIALS AND METHODS Male Albino Wistar rats (200 g) were used in this study. Achilles tendon injury was done by clamp method. Clamp was placed on

tendon and left for two minutes until compressive injury occured. After initial clamp removal, saline bath (1 mL) was administered on injury site. Five minutes after, clamp was placed again at the injury site on tendon for two minutes. Upon final clamp removal, saline bath (1 mL) was administered in control group and BPC 157 (10µg/ kg; 1mL) was administered in treated group on injured tendon, respectivelly. Tendon was recorded (microscopic camera) and pictures of injury site were taken at particular time points: A- immediatelly after final clamp removal; B – one minute after application of substances (saline, BPC 157); C - three minutes after application of substances (saline, BPC 157); D –five minutes after application of substances (saline, BPC 157). We recorded and assessed blood vessels (appearance or disappearance). Changes in the size of oedema were measured by caliper immediately after final clamp removal and five minutes after application (saline, BPC 157). Contractures were measured after removing final clamp and five minutes after application (saline, BPC 157).

RESULTS Controls showed vessel disappearance, small or no changes in the size of oedema and had apparent contracture of tendon. BPC 157 treated rats showed progressive vessel presentation, significant reduction in the size of oedema and they showed no apparent contractures.

CONCLUSION In this study we showed that BPC 157 administred after Achilles tendon injury rescues tendon function.

Abstracts

Case Reports

C1

Neonatal diabetes mellitus in a premature newborn with Down syndrome

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Key words: neonatal diabetes, premature newborn, Down syndrome

BACKGROUND Neonatal diabetes mellitus (NDM) is defined as insulin-requiring persistent hyperglycemia occurring in first 6 months of life. Based on the disease course, NDM is stratified as transient NDM (TNDM) and permanent NDM (PNDM). Unlike autoimmune diabetes, NDM is monogenic form of diabetes. We report a case of NDM in a premature newborn with Down syndrome, starting at very young age, which is extremely rare.

CASE PRESENTATION Our case was a female infant, born at 33/34 weeks gestation with a birth weight of 1470 gms. She was delivered via caesarean section due to threatening asphyxia with nutritive and respiratory insufficiency of placenta, followed by intrauterine growth restriction (IUGR) and oligohydramnios. On admission, the newborn presented with a characteristic set of facial and physical features associated with Down syndrome, which was confirmed using karyotyping. At 16 h of age, the infant was detected to have hyperglycemia. This was managed with intravenous continuous insulin infusion. In the first 6 weeks BGL varied from high to normal values, with rare hypoglycemic episodes. On day 56 of life, the continuous subcutaneous insulin infusion (CSII) was started. After a good glycemic control was obtained, the insulin requirement gradually decreased and therapy was ceased by day 85 with stable BGLs. Except DM, during a three-month hospital stay she developed late onset neonatal sepsis, urinary tract infection and progressive liver lesions followed by cholestasis.

CONCLUSION In conclusion, we have reported a rare case of NDM in a premature newborn with Down syndrome. She was also the youngest child in Croatia with an insulin pump. The etiology of cholestasis and DM remains unclear. Most likely it was TDM, but it is also possible that it was type 1 DM. Genetic DNA testing for neonatal diabetes revealed no pathogenic mutation in common genes. Mutation in these genes are found in 82% of patients with neonatal diabetes. The remainder of the DNA sample may be tested for other genetic subtypes of diabetes in the future.

C2

Deficiency of factor XIII in patient with spontaneous subdural hemorrhage and pancytopenia due to hypersplenism – a case report

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Key words: Factor XIII, IBD, therapy

INTRODUCTION Factor XIII (FXIII) deficiency is a rare bleeding disorder characterized by deficiency of clotting FXIII. Individuals with FXIII deficiency form blood clots like normal but these clots are unstable and often break down, resulting in prolonged, uncontrolled bleeding episodes. Molecular analysis of patients with FXIII deficiency revealed a wide spectrum of mutations, most frequently missense mutations in the FXIII-A subunit. Inheritance is autosomal recessive. Acquired XIII deficiency has been described in variety of diseases such as Henoch-Schonlein purpura, erosive gastritis, IBD, myeloproliferative and myelodysplastic disorders etc. The deficit of FXIII cannot be observed by a conventional coagulation test (PT, APTT, fibrinogen, TT). The lack of FXIII should be suspected in people with spontaneous bleeding in the CNS. In this paper we describe patient with acquired FXIII deficiency, spontaneous bleeding and pancytopenia due to liver disease and hypersplenism.

PATIENT PRESENTATION This patient born in 1945 with negative family and previous personal history for bleeding disorders was diagnosed with ulcerative colitis in 1996. He later developed liver cirrhosis with splenomegaly with hypersplenism and cytopenia since 2012. He was operated in 2013 for rectal adenocarcinoma without bleeding complications during surgery. After the operation he noticed periodic bleeding from postoperative stoma receiving occasionally red blood cell transfusion therapy. He also developed angiodysplasie of gastrointestinal tract. Several times in 2014 the patient was hospitalized for non-traumatic subdural hematoma. Laboratory diagnosis was done and it showed pancytopenia (L=2.0, Hb= 70, Plt=50). Hematology work-up did not confirm myelodysplastic syndrome, and coagulation tests showed normal PT, APTT, fibrinogen and vWF but reduced FXIII. He received FXIII replacement therapy and tranexamic acid, with resolution of bleeding. After that, the patient was receiving periodically FXIII replacement therapy during outpatient follow up with good clinical response, with normalization of FXIII and without other major bleeding manifestations, clinically stable.

CONCLUSION Deficiency of FXIII can be successfully treated by substitution of FXIII with interruption of bleeding and prophylaxis of further bleeding, even in thrombocytopenic patients with other comorbidities. It is important to consider FXIII deficiency in case of spontaneous bleeding, especially in central nervous system.

C3
Haemolytic anaemia causing severe neonatal distress

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Key words: Anaemia, haemolysis, neonatal distress, arrhythmia

INTRODUCTION Haemolytic anaemia can be acquired (usually immune-mediated, microangiopathic and infectionmediated destruction of erythrocytes) or hereditary (i.e. enzymopathies, membranopathies, hemoglobinopathies). Symptoms of anaemia appear when erythropoiesis cannot match the pace of red cell destruction. In severe haemolysis, hyperkalaemia can occur and lead to potentially lethal arrhythmias.

CASE PRESENTATION A boy was delivered in the 35th gestation week with caesarean section after abruption of the placenta. The mother was healthy except for Hashimoto thyroiditis treated with levothyroxine. The boy's measures were 3230 g and 51 cm. After delivery he was pale, icteric, bradycardic and tachy-dyspnoeic. He had decreased muscle tone and generalised petechial rash. Capillary blood sample showed mild anaemia (122 g/L) and severe hyperkalaemia (>9 mmol/L). The following venous blood sample showed that anaemia worsened profoundly (Hb 99 g/L). Thrombocytopenia (27x109/L) and reticulocytosis (9%) were also prominent. To correct anaemia, concentrated erythrocyte transfusion was given. After transfusion the boy became circulatory stable and eupnoeic. In half an hour, the staff monitored monomorphic ventricular tachycardia on ECG. Due to severe hyperkalaemia, calcium gluconate and insulin with glucose were immediately administered. Additionally, an exchange transfusion was performed - potassium levels and ECG normalised. Anaemia and thrombocytopenia persisted and reticulocytosis aggravated (up to 22%). Reticulocytosis was present throughout hospitalisation. The boy received multiple thrombocyte and erythrocyte transfusions until normal levels were eventually achieved. After one month of hospitalisation the boy has been discharged from the hospital. He had recurrent episodes of anaemia and reticulocytosis. Extensive haematological diagnostics was conducted. Peripheral blood smear showed moderate anisocytosis and poikilocytosis. Spherocytosis and autoimmune haemolytic anaemia have been excluded, glucose-6- phosphate dehydrogenase mutation was not identified. Aetiology of recurrent haemolytic episodes and bicytopenia remained unspecified. The boy is currently enrolled in a targeted gene sequencing program.

CONCLUSION We summarise the clinical presentation and management of an unusual case with severe, probably hereditary haemolytic anaemia which presented with acute distress of a new-born and caused a lethal arrhythmia due to cell-lysis induced hyperkalaemia.

C4
Chronic Graft-versus-Host Disease: The importance of multidisciplinary approach

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Key words: GVHD, chronic Graft-versus-Host Disease, multidisciplinary, hematology

INTRODUCTION Chronic Graft-versus-Host Disease (cGVHD) is a major late complication of allogeneic he-

matopoietic stem cell transplantation (alloHSCT). Considered to be an alloimmune and autoimmune illness, cGVHD is also a multisystemic disease affecting skin, mouth, eyes, lung, liver, gastrointestinal tract, joints/fascia and genitourinary tract, requiring multidisciplinary approach. CGVHD most commonly occurs within 3 years after alloHSCT. The incidence rates vary from 30% to 70%. In 2013, a multidisciplinary team consisting of many different clinical and laboratory specialists was established at the University Hospital Center Zagreb with the goal to implement the newest diagnostic criteria and clinical standards for cGVHD in Croatia. The purpose of this case report is to present a patient with non-Hodgkin lymphoma and secondary myelodisplastic syndrome (MDS) currently in hematological remission after alloHSCT who is experiencing cGVHD with multidisciplinary approach in his treatment.

CASE REPORT Male patient born in 1953 developed non-Hodgkin follicular lymphoma (NHL) in 2009, treated with 8 cycles of chemoimmunotheraphy (R-CHOP). He was in remission until 7/2016 when he developed pancytopenia. Further work-up confirmed high-risk MDS, and he received 6 cycles of azacytidine. Unrelated alloHSCT was performed in 3/2017. After the transplantation, he had acute GVHD which primarily affected the skin and the intestinal tract. At day +122 after alloTKS he developed signs and symptoms of cGVHD. He was evaluated through cGVHD multidisciplinary team by several specialists (hematology, dermatology, nutrition, ophthalmology, neurology, stomatology, physical medicine) and with laboratory and other tests, and was diagnosed to have cGVHD of the skin and the eyes, receiving low dose immunosuppressive therapy and topical treatment to ameliorate his symptoms. All other potential signs and symptoms of cGVHD appear to be absent. He is in complete remission of NHL and MDS, maintaining complete chimera.

CONCLUSION Management of patient with multisystemic disease such is cGVHD can be difficult, and requires the involvement of many different specialists and a multidisciplinary approach.

CASE REPORTS

C5
Preeclampsia after donor egg in vitro fertilization and embryo transfer: an immunological issue?

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Key words: Preeclampsia, assisted reproductive treatment

INTRODUCTION Preeclampsia is a complex obstetric disease and it occurs more frequently in assisted reproduction pregnancies. It is a maternal cardiac and endothelial improper physiological response to pregnancy. Recently the maternal immune system was discovered to play a key role in the pathogenesis.

CASE PRESENTATION A 35 year old woman with premature ovarian failure was treated at the fertility clinic in Ljubljana for her second in vitro fertilization and embryo transfer (IVF-ET). On vaginal ultrasound a thin endometrium and no follicles were noted. Her karyotipe resulted normal. She had a history of biological drug treatment for psoriasis. The spermiogram of the partner showed a normal result. She had her first IVF-ET with a donor cell in Czech republic. There were no complications during the pregnancy that time and she vaginally delivered a baby boy at the 41 week, weighing 3100g with Apgar score 9. At the fertility clinic she completed the pharmacological treatment with three cycles of combined estradiol valerate and norgestrel combined pill and two subsequent cycles of progesterone. She did not receive dexamethasone treatment as in the first IVF cycle. The egg cell was obtained from a different donor. The ET was held on the third day after the fecundation. The donor for the second IVF-ET had a history of infertility and had polycystic ovary syndrome. The second pregnancy after IVF- ET ended at week 28 od pregnancy when she was admitted in a provincial hospital due to nausea and burning pain behind the sternum. She had high blood pressure and therapy with magnesium sulphate and betamethasone was started. She was transferred due to severe preeclampsia as transport in utero at the university clinical centre, where fetal distress and placental abruption was suspected. A baby boy was born after emergency caesarean section weighing 1150g, scoring Apgar 5/7 and was transferred to the neonatal intensive care unit. Abruption of placenta was confirmed and the observed placenta had ischemic lesions. It was subsequently discovered that the donor for the second pregnancy delivered a baby girl weighing 2940g at week 38 and developed postpartum preeclampsia.

CONCLUSION The immunological component for preeclampsia suggests that donor egg pregnancies are likely to be at much great risk for the disease.

C6
Clinical presentation of rare 21q22.3 microduplication syndrome

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Key words: 21q22.3 microduplication syndrome, rare, epileptic seizures, discrete Down phenotype

INTRODUCTION 21q22.3 is a rare microduplication syndrome which, according to literature, includes a typical region for Down Syndrome, but such patients only have a discrete Down phenotype such as craniofacial dismorfism, mental retardation, congenital heart disease, ophtalmological defects and decreased life expectancy. To this date, only a few cases have been reported around the world.

PATIENT We are presenting a male patient at the age of 5, born at term and with no history of antenatal defect. His parents are nonconsanguineous, young and healthy. The incomplete family history states that this is his mother's first child, whilst his father has four children, of whom one is stunted. The newborn was hypotrophic: RM 2680/46 cm, OG 33,5cm, Apgar score 10/8, obvious elements of dysmorphia: hypertelorism, epicanthic eyefold, otapostasis, abnormal ears, high-arched palate, muscular hypotonia and hyperelastic joints. Clinically, there were no elements pointing towards Down phenotype. He developed complicated epileptic seizures at the age of 9 months, and is curently being followed up for global psychomotor impairment. To date, he has been hospitalized more than 30 times due to respiratory infections and epileptic seizures. Neuroimaging revealed cerebral atrophy with no signs of congenital cerebral defects. Chromosomal analysis showed a normal male kariotype (46,XY), and MLPA revealed 21q22.3 microduplication. Currently, our patient has aphonia and stereotyped patterns of behaviour. He cannot stand or walk and is fed by a nasogastric tube or spoon although he has normal deglutition. Despite receiving permanent anti-epileptic theraphy (valproate, levetriacetam, clobazam), he frequently has epileptic seizures.

CONCLUSION Microduplication syndrome 21q22.3 is a rare syndrome presented by discrete Down phenotype. This is a specific case in which the patient doesn't have any elements of Down phenotype although he has 21q22.3 microduplication syndrome. This non-characteristic clinical manifestation along with the normal kariotype represents a challange in diagnosing this syndrome. Analysis of the genetic database revealed that the duplication of this segment encompasses the following genes responsible for clinical phenotype: DYRK1A associated with impaired signalization and synaptogenesis, ITGB linked to susceptibility to infection, CLDN14 related to sensorineural hearing loss, and COL18A1 associated with vision and cerebral defects (Knobloch syndrome).

C7
Secundipara with third degree perineal rupture

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Key words: anorectoplasty, perineal rupture, vaginal delivery

INTRODUCTION Perineal laceration usually occurs due to disproportion between baby's head and soft tissues pertaining to the birth canal. Rupture can be classified into three grades. Depending on the grade of the rupture, patient will be provided with therapy or even a surgery.

CASE REPORT In the evening of November 2017, during 39th week of pregnancy, a 37-years-old patient comes to gynaecology department because of going into labor. During checkup, it was determined that: patient is having uterine contractions every 5 minutes, water didn't break, cervix of the uterus is 9cm dilated and baby's head is palpable above the cervix. Considering patient's state, she was transferred to delivery room. Giving birth was done per vias naturalis. Considering that the baby's head didn't pass through the birth canal, lateral episiotomy was done. Despite the surgery, in passing of the left elbow, third degree rupture of the perineum occurred, which consists of: rupture of the perineum, rectum and anal sphincter. Newborn was delivered alive, male, brought, 3760/50, AS: 10/10. Patient was urgently directed to a surgery which was done in general anaesthesia. Gynaecologist sewed this 5cm long rupture of the sphincter and anus and abdominal surgeon did anorectoplasty with the use of a small net. Single stitches were placed on vagina. At the end, episiotomy was sewed by the layers. Operation finished successfully. During next seven days, patient was given intravenous antibiotic therapy, along with lacsatives and pureed food. Postoperative recovery went well.

DISCUSSION Most of vaginal deliveries end up with no surgical intervention at all. Nevertheless, sometimes, episiotomy is needed. Despite the surgery, there's still a possibility of rupture, mostly first degree. Third degree ruptures are quite rare, but still possible. Thanks to a prompt reaction and team work between gynaecol-

ogists and abdominal surgeon, patient was fully recovered, wound has healed successfully and the quality of patient's life was preserved.

C8
Induction of Spermatogenesis in Male Patients with Gonadotropin Deficiency

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Key words: spermatogenesis, gonadotropin deficiency, panhypopituitarism

INTRODUCTION Spermatogenesis is a synthesis of male gamete. Some medical disorders can lead to insufficiency of this process. One of them is hypopituitarism. This disorder, among others, causes a lack of synthesis of FSH and LH.

CASE REPORT Our patient was diagnosed with panhypopituitarism at the age of nine and since then he was treated with adequate replacement therapy (growth hormone initially and hydrocortisone, testosterone and L-thyroxine) and regularly monitored. At the age of 37 in order to achieve fertility the procedure of induction of spermatogenesis was started. Initial work out was performed and the result of seminal fluid analysis showed zero sperm count. Scrotal ultrasound showed no abnormalities. In the March of 2016 the slow acting testosterone undecanoat therapy was withdrawn and LH replacement therapy was initiated as human chorionic gonadotropin in dose of 1500 units 3 times per week (always in the same days) for 6 months. During that period sperm concentrations were measured in monthly intervals as well as the total and free testosterone concentrations. Dosage of HCG was adjusted according to recommended interval of serum testosterone concentration. Since there was no change in the initial result of seminal fluid analysis in January of 2017 recombinant human FSH (rhFSH) substitution was introduced in initial dosage of 75 U every two days. After the 6 months of combined therapy the dosage of rhFSH was doubled since there was no change in sperm count. In October of 2017 there was some mobile and immobile spermatozoa detectable for the first time. Couple was referred to IVF clinic. Patient sperm samples were collected in several occasions, and for the wife the induction of ovulation and egg retrieval procedure were performed. Embryo transfer subsequently was performed in January of 2018. Pregnancy was confirmed in February of 2018.

CONCLUSION We would like to highlight that induction of fertility in male patients with gonadotropin deficiency is possible, but it can take much longer than a six months of combined treatment to achieve it.

C9
Post-STEMI complications in patient with systemic lupus erythematosus and secondary antiphospholipid antibody syndrome

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Key words: Dressler, STEMI, Lupus

INTRODUCTION Dressler's syndrome is a type of pericarditis that occurs after events like heart attack, heart surgery or injury. It's presumed to be an immune system response after damage to heart tissue. Syndrome is characterized by pericardial pain, pleural effusions, and abnormal ECG and radiography findings.

CASE REPORT This case describes a 53-year-old female patient admitted for severe persistent central chest pain at rest for more than 24h. Patient has systemic lupus erythematosus (SLE) for 18 years and as a complication secundary antiphospholipid antibody syndrome (APS). Within APS she had deep vein thrombosis of both legs and also multiple lower extremity ulcers as a complication of APS caused vasculitis. Patient was admitted with an acute ST elevation in leads V2-V6, I, aVL. On admission, the leukocyte was 20,4×109/L, CRP 183,4mg/L,serum troponin-I 28,4 ug/L, CK-MB 46 ng/mL, CK 578U/L . She was admitted as a subacute anteroseptal STEMI and underwent primary PCI. It detected occlusion from middle segment of left anterior descending branch (LAD). Dilatation was attempted but only showed perfusion in D1 without sufficient distal blood flow in LAD. It gave impression of chronic total occlusion and further intervention was abandoned. 10 hours after the intervention

patient becomes hypotensive and emergency bedside echocardiography was performed. Patient was administered with positive inotropic agents after which blood pressure returned in the normal range. Emergency echocardiography revealed pericardial effusion of maximum 16mm behind the left ventricular wall and akinesia of the anteroseptal-apical wall of left ventricle (LV). Control laboratory findings showed decrease in serum troponin I levels. Control transthoracic echocardiography showed regression of pericardial effusion which was now max. 10mm behind the LV.

CONCLUSION If there was no autoimmune disease in the background of this case, without a doubt this would be diagnosed as Dressler. But considering patients SLE was presented in acute form at the time of the infarction and after it as well, we cannot determine with certainty whether this case was Dressler syndrome or it was an excessive immune reaction provoked by her primary disease. Whatever the mechanism stands behind this, it is important to acknowledge that possibility for developing such a rare complication grows significantly in people with multifactorial diseases and should be considered while assessing patients condition.

C10
Wide clinical manifestations of adrenal insufficiency-case report

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Key words: adrenal insufficiency, liver lesion, partial hypopituitarism, hydrocortisone

INTRODUCTION Adrenal insufficiency is a condition in which the adrenal glands do not produce adequate amounts of steroid hormones, primarily cortisol. Adrenal insufficiency left not treated may be presented with various clinical symptoms and signs and even possible lethal adrenal crisis.

CASE REPORT: We present the case of a 21-year-old patient with a history of complicated clinical symptoms. First symptoms of disease started at the age of 14 when the patient was admitted to inpatient clinic for infectious diseases because of abdominal pain and fever. Initial work out revealed liver lesion of unclear etiology, imaging of the liver (CT, MR) was normal. IBD was also ruled out. Several years later patient was admitted to the department of internal medicine, again with gastrointestinal symptoms and significant weight loss and fatigue. Extensive laboratory assessment was done but only pathologic value of liver transaminases (AST 165 U/L, ALT 214 U/L) were found. US of the liver showed a diffuse lesion with possible fibrosis. The EGD and colonoscopy were also performed and results were suspicious of celiac disease/chronic unspecific colitis. A few months later patient was admitted again in the same department, this time because of general weakness and remarkable weight loss, hypotension, anemia and signs of profound dehydration. Blood tests revealed hypoglycemia, hyponatremia, and hyperkalemia, so because adrenal insufficiency was suspected, the cortisol measurement was performed and revealed extremely low value of 1 nmol/L. Hydrocortisone replacement therapy was immediately introduced and saved patient life. In the next few months it was concluded with additional endocrinology assessment that the patient has partial hypopituitarism (ACTH, LH, FSH, HGH) and additional therapy with testosterone was introduced. Patient's general state was highly improved after introduction of adequate replacement therapy. The question of etiology of liver lesion, yet improved, remain still open.

CONCLUSION This case points out that the clinical manifestation of adrenal insufficiency is very wide, and in this case, it was difficult to diagnose it due to complex clinical picture of the patient resulting from the mixed symptoms of partial hypopituitarism and liver lesion. It also highlights that even simple, timely introduction of hydrocortisone replacement therapy is lifesaving treatment.

C11
Post-heart transplant tricuspid infective endocarditis

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Key words: Heart transplantation, right sided endocarditis, tricuspid valve endocarditis, endomyocardial, biopsy, Staphylococcus epidermis

INTRODUCTION Post-heart transplantation infective endocarditis (IE) is unique among other solid organ transplantation (SOT) endocarditis infections because it is the transplanted organ that becomes infected. Tricuspid valve endocarditis is less common than the left-sided

version, accounting for only 5-10% of cases of IE. Staphylococcus aureus is the most common organism but other microbiological pathogens can also present. Important risk factors are intravenous drug abuse and intravenous lines and wires (e.g. ICD). IE is also substantially more common in heart transplant recipients than in general populations. Frequent central venous catheter access and multiple endomyocardial biopsies after transplantation can predispose the patient to infection.

CASE REPORT We present a case of a 29 year old male who in January 2016 underwent orthotopic heart transplantation after heart failure, due to noncompaction cardiomyopathy. He was put on standard immunosupressive regimen, undergoing several regular scheduled endomyocardial biopsies (EMB), which showed no signs of allograft rejection. The last biopsy was performed in February 2017. 4 months later he presented with general malaise, exertion intolerance and an increase in inflammatory markers. Transthoracic echocardiography revealed a large mass measuring 2x1 cm on the septal cusp of tricuspid valve, led to the diagnosis of tricuspid valve IE. Hemoculture established Staphylococcus epidermis as the offending pathogen. Treatment with antibiotic therapy was initiated immediately, and three weeks later the patient underwent tricuspid replacement with a mechanical valve.

CONCLUSION Infective endocarditis of the tricuspid valve is a known, but rare and potentially fatal complication of heart transplantation. There are several possible resons for the occurence. Patients who have tricuspid injury and are strongly immunosupressed are at risk for bactermia which subsequently leads to infection of a damaged high risk heart valve. The prognosis of post-cardiac transplant endocarditis is poor, but in our case a combination of conservative treatment with mechanical tricuspid replacement led to a good outcome. Six month after the discharge, the patient remains well.

C12
Hyperthyroidism and molar pregnancy

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Key words: hyperthyroidism, thyrotoxicosis, molar pregnancy, gestational trophoblastic disease

INTRODUCTION Hyperthyroidism is an endocrine disorder, characterized by excess of thyroid hormones. It can mimic other health problems, which may make it difficult for your doctor to diagnose. Common causes of hyperthyroiditis include Graves' disease, toxic adenoma, toxic multinodular goiter and thyroiditis, can cause hyperthyroidism. A rare cause of hyperthyroidism is a molar pregnancy, also called hydatidiform mole

CASE PRESENTATION A previously healthy 45-year-old woman was scheduled for a radioiodine uptake test for the evaluation of the cause of hyperthyroidism. She presented 3 weeks ago with severe palpitations and tachycardia (up to 150/min), difficulty sleeping and severe sweating. The diagnosis hyperthyroidism was made. She was started on Propranolol 60mg/day and scheduled for a radioiodine uptake test. Before the investigation, β-hCG test was routinely performed. Laboratory data showed β-hCG levels of 180324 mIU/ml. Transvaginal ultrasound of pelvis revealed uterus which measured 9.4x6,1 cm, with intrauterine gestational sac measuring 3.9 cm and presence of anechoic areas likely to be cystic, suggestive of molar pregnancy. An ultrasound guided suction evacuation of products of conception was performed under general anaesthesia the next day. Signs and symptoms of hyperthyroidism disappeared and Propranolol was stopped. Our patient had features of molar pregnancy at presentation with hyperthyroidism which was controlled with β-blockers. The hCG molecule is made of α and β subunits; which have a similarity in structure to the TSH molecule. Since hCG and TSH receptors are similar, hCG acts directly on the TSH receptors that are present in the thyroid resulting in an increased level of thyroid hormones T3 and T4 and decreased TSH levels. A molar pregnancy happens when the fertilisation of the egg by the sperm goes wrong and leads to the growth of abnormal cells or clusters of water-filled sacs inside the womb.

CONCLUSION Physician should be aware of the possibility that molar pregnancy causes signs and symptoms of hyperthyroidism, which is also evident in the laboratory values. β-hCG testing should be performed and if found positive, further diagnostics should be made. The thyroid abnormality usually subsides with evacuation of hydatidiform mole and may rarely require treatment with antithyroid drugs.

C13
Treatment of geriatric patient in joint contractures with intertrochanteric fracture where positioning on extenstion table is not possible

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Key words: contractures, intertrochanteric fracture, lateral decubitus position

INTRODUCTION The number of geriatric patients with proximal femur fracture that needs surgical treatment is increasing. Sometimes these patients suffer from joint contractures as a result of long term poor mobility or variety neurological diseases. When positioning on the extension table is not possible, solution to these problems is performing internal fixation in lateral decubitus position, where good reduction and proper intraoperative imaging can be done.

CASE PRESENTATION 88 year old female patient was admitted to hospital because of a fall from the bed. She suffered an intertrochanteric fracture of proximal femur. Prior to injury she was poorly mobile for several years, so severe contractures of her joints developed. Due to severe contractures intraoperative imaging was not possible on the extension table. For this reason patient was positioned on the lateral decubitus position. With image intensifier positioned with 35° to the coronal plane and 25° to the transverse plane of the patient, proper axial view of the femoral neck was obtained. With 20° to the coronal plane in sagittal plane, proper AP projection was obtained. Due to muscle relaxation no traction was needed for reduction of the fracture. With proper imaging and reduction the internal fixation was done successfully.

CONCLUSION Surgery of the proximal femur on the lateral decubitus position is good alternative to surgery on the extension table, especially when intraoperative imaging and reduction on the extension table is not possible.

C14
Recognition and treatment of acetic acid ingestion: A case report

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Key words: acetic acid, poisoning, ingestion, corrosive injury

INTRODUCTION We describe a case of management in a patient after intentional acetic acid ingestion. Diluted acetic acid in the form of vinegar is commonly used all over the world, however sometimes people ingest concentrated acetic acid as a way of self-harm.

CASE PRESENTATION A 37-year-old women was brought to ED by her partner because he noticed that she an eppisode of hematemesis. She reported that she felt unwel since this morning and vomited 5 times with some blood present. Vital signs were stable, physical examination was normal except for red to purpule mucosal lesions on the palate and on the posterior wall of the pharynx. Upper gastrointestinal (GI) endoscopy was performed and showed injuries consisting with caustic substance ingestion. She was specifically questioned about possible acid ingestion, but she denied it. Indirect laringoscopy showed supraglotic oedema wirh black mucosal lesions. The patient became somnolent and developed stridor and was transfered to intensive care unit where surgical tracheostomy was performed and she was intubated. CT of the abdomen was performed to exclude perforation. The day after the medical personel was noted that an empty bottle of concentrated acetic acid was found at patients home. During hospitalization the patient developed acute kidney injury with anuria which was treated with hemodialysis and two plasmapheresis for removal of toxic metabolites. Hepatopathy (25-times normal level elevation in transaminases), hemolysis, disseminated intravascular coagulation (DIC) and shock were diagnosed. The patient was initially fed parenteraly, enetral feeding was sterted on 7th day with water and soup and later with liquid food ingestion. Slowly she was able to ingest also solid foods. Anemia which was caused by GI bleeding was treated with multiple transfusions. At discharge after 40-day in hospital the patient was autonomous in daily routines without any problems with swallowing.

DISCUSSION Ingestion of acetic acid greater than 12% is asociated with severe local and systemic toxic effects (haemolysis, renal failure, DIC, shock) . Early laringoscopy is crucial for evaluation of airway integrity. This case report shows the importance of urgent upper GI endoscopy in patient with hematemesis and negative patient history. Whenever treating a patient with hematemesis who is avoiding medical care intentional caustic substance ingestion must be considered.

C15
Isthmocele – the neglected complication of Caesarian section

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Key words: Isthmocele, Caesarian section

INTRODUCTION Isthmocele, also known as niche and Caesarean scar defect or dehiscence, is a pouch-like, triangular defect of the anterior uterine isthmus at the site of a prior hysterotomy. Based on current data isthmocele occurs in 60% of cases after a primary Caesarean section (CS) and nearly 100% after the third CS, with a worldwide prevalence from 19% to 84%. The increase

in Caesarean sections performed worldwide inevitably led to a greater occurrence of isthmocele. Most patients with isthmocele are asymptomatic, and the most frequent complaint regards abnormal vaginal bleeding. It was described as a cause of infertility, probably due to deficient sperm motility and implantation. Pelvic pain is also a common symptom, and the severity of dysmenorrhea may be directly connected with the width of the defect. The gold standard imaging techniques for diagnosis are magnetic resonance and transvaginal ultrasound. On transvaginal sonography isthmocele typically appears as a wedge-shaped anechoic area with a depth of at least 1 mm in the uterine isthmus at the CS scar site. There is no consensual management or treatment and there are reported cases of isthmocele treated laparoscopically or hysteroscopically.

CASE PRESENTATION We present a case of a 36-year old woman without comorbidities or known allergies, with a history of infertility due to male factor. After two cycles of in vitro fertilization in 2014, pregnancy was confirmed. At 28 weeks and 4 days, a healthy newborn was delivered by Caesarean section. Three years after the procedure she reports abnormal vaginal bleeding and dysmenorrhea. Transvaginal sonography revealed a 14x19 mm triangle-shaped anechoic structure at the site of the CS scar site in the uterine isthmus. Since myometrial thickness was greater than 3 mm, hysteroscopic treatment of isthmocele was considered a safe approach. There was no peri – or postprocedural complication, at follow-up she is asymptomatic.

CONCLUSION With the growing number of Caesarean sections in the last decades, the rate of post-CS complications, including isthmocele, has increased. Isthmocele is still unknown to many gynecologists and there is no consensus on the types of defect that would benefit from treatment. There is no gold standard treatment, although it is accepted that hysteroscopy represents a valid approach in cases of myometrial thickness > 3 mm. The best timing to recommend subsequent pregnancy and mode of delivery are still under debate.

C16
Ventricular tachycardia induced by high-septal pacemaker lead position

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Key words: ventricular tachycardia, pacemaker, right ventricular pacing

INTRODUCTION Right ventricular (RV) pacing lead provides critical pacing in bradyarrhythmias. There are several methods of implanting a RV lead: apical, mid-septal and high-septal position. Although septal RV lead position is associated with more physiological pacing it could induce ventricular tachycardia (VT) or ventricular ectopy by mechanical irritation of the RV outflow tract (RVOT).

CASE PRESENTATION A 77-year-old female was admitted to our hospital due to palpitations after she had a dual chamber pacemaker implanted for second degree atrioventricular block. 12-lead ECG and device interrogation showed no signs of pacemaker malfunction. However, on 12-lead telemetry we recorded non-sustained VTs with RVOT morphology. Although amiodarone and beta blockers were prescribed the occurrence of VTs did not diminish. To evaluate the pacemaker electrodes, we performed cardiac computed tomography and chest radiography. Lead perforation was excluded. Atrial lead was placed in the right atrial appendage and ventricular lead was in the high-septal position. As etiology of VTs in a structurally normal heart was unclear, additional electrophysiology study was performed. Electroanatomic mapping showed no low voltage areas in the RVOT and VT was not inducible using standard programmed ventricular extrastimulation with and without isoproterenol. Since mechanical trigger of the ventricular lead in the RVOT was suspected, we decided to reposition the lead in the RV apex. Since the repositioning we have not recorded any VTs during device interrogation and the patient reported no palpitations.

CONCLUSION This case demonstrates that pacemaker electrodes must be considered as a possible trigger of VTs. In case there is no structural or electrophysiological substrates for arrhythmias, pacemaker lead repositioning should be considered.

C17
Surgical treatment of a patient with cutaneous nocardiosis

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Key words: nocardiosis, surgical treatment

INTRODUCTION Nocardia spp. are Gram positive acidoresistant bacteria, found mostly in the ground and organic matters. Most vulnerable to infection are patients

with immune deficiency, especially middle-aged men. N. asteroides causes pulmonary nocardiosis presenting as severe pneumonia, on the other hand N. brasiliensis is associated with subcutaneous infections. The usual mode of transmission is inhalation of organisms suspended in dust. Transmission by direct traumatic inoculation through puncture wounds is very common as well. The most typical manifestations of infections are acute superficial infection with ulcerations, abscess or cellulitis; chronic progressive destruction of skin, fasciae and muscles; disseminated skin infection with lymphangitis.

CASE PRESENTATION 64 year old male patient on maintenance therapy with Medrol for polymyalgia rheumatica, was admitted because of inflammatory process on his scalp and moderate elevation of body temperature. The lesion was parietal and measured two centimetres in length and one centimetre in width. There was swelling and redness around the wound, also. Preauricular lymph nodes were enlarged and painful. The patient was already being treated with amoxicillin and clavulanic acid. Inflammatory parameters were mildly elevated. In local anesthesia with 2% of lidocaine chloride, we performed the drain excision and necrectomy. We took samples for microbiology and histopathology analysis. Next day, the patient was afebrile with less swelling around the wound. The lymph nodes were still mildly enlarged and painful. Inflammatory parameters were higher than the day before, therefore, after consultation with infectologist, the antibiotic agent was replaced for cloxacillin and clindamycin. The fourth postoperative day we received microbiology results that showed Nocardia brasiliensis was the pathogen which had caused infection. Postoperative wound was smaller, swelling and redness around the wound almost disappeared and inflammatory parameters returned to normal. The patient was afebrile and was feeling well. We transferred him to the Infectious Diseases Clinic for final care.

CONCLUSION Treatment of Nocardiosis is based on antibiotics and it is prolonged. Most effective are sulfonamides and therapy should last least 2 to 12 months, depending on the causative pathogen and type of manifestation. Surgical removal of inflammatory lesions is still a crucial element of successful treatment for cutaneous Nocardiosis.

C18
Left anterior descending coronary artery muscular bridge

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Key words: myocardial bridge, anti-ischemic therapy, percutaneous coronary intervention

INTRODUCTION Myocardial bridging is a congenital anomaly anatomically defined as muscle that overlies the intramural segment of a major epicardial coronary artery. It results in dynamic stenosis due to systolic compression and is most often a benign condition but may cause angina pectoris, myocardial infarction, coronary spasm, arrhythmias or even sudden death.

CASE REPORT A 63-year-old male presented with complaint of occasional chest pain and shortness of breath during moderate excercise. A clinical examination was unremarkable. Electrocardiogram showed signs of left ventricular hypertrophy, delta waves in all precordial leads and ST-segment depression with T-wave inversion in leads V5-V6. Echocardiography revealed normal systolic function of the left ventricle (LV) with signs of mild diastolic dysfunction and pulmonary hypertension. Coronary angiogram showed prominent myocardial bridge (MB) between mid and distal segment of left descending artery (LAD). Left circumflex and right coronary arteries were normal. Stress technetium-99m tetrofosmin gated single-photon emission computed tomography (SPECT) was performed, showing LAD perfusion signs of reversible ischemia in the apical segment of anterior wall and anterolateral segments of the LV. The patient was presented at cardio-surgical council where it was concluded that coronary artery bypass graft would be too invasive treatment option for LAD MB. A percutaneous coronary intervention on LAD would be eligible, but the patient decided for drug treatment. Consequently, he was put on anti-ischemic therapy with aspirin, trimetazidine, ranolazine and calcium antagonist. The latter was withdrawn before he was released from the hospital due to low blood pressure measurements. At the outpatient clinic follow up after 2 months the patient reported almost no symptoms of angina pectoris and shortness of breath.

CONCLUSION Although in our case ischemia on SPECT was linked to the LAD myocardial bridging, we opted for medical anti-ischemic therapy with relative success as chest pain and shortness of breath on exertion diminished. Percutaneous coronary intervention with stent implantation under the MB is associated with some complications (coronary perforation etc.) and used mainly in patients with resistance to drug therapies or when there is concomitant atherosclerotic lesion near the MB. Anti-ischemic therapy should be considered as first-line treatment of patients with MB.

C19
Emotions and hallucinations

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Key words: Depressive disorder, hallucinations, emotions

INTRODUCTION Emotional connotation is an integral part of the hallucinatory experience. Usually, it is connected with hallucinations in psychiatric diseases. We can analyze emotions that preceded the appearance of the hallucinations, emotional content of the hallucinations and emotional consequences of the hallucinations.

CASE REPORT Our case report deals with the emotional state of the patient before the appearance of the hallucinations. Female patient at the age of 50 years, employed, with finished college, married, mother of one son. Patient was previously out-treated for the major depressive disorder, but after the stressing event (her son was beaten on the street) she developed different symptomatology. The patient was distressed, feared, anxious, she was highly and intensively preoccupied with care for her son. One week after the stressing event she developed visual hallucinatory experiences (she saw two men who were following her in the streets), and afterward, she also heard voices in her head (two voices who were fighting about who will attack her first). The patient was admitted to Psychiatric Clinic. She was included with antipsychotic medication olanzapine, with titration to a dose of 10 mg daily. Hallucinations lasted for two weeks.

CONCLUSION We can conclude that emotions are integral and important part of the hallucinatory experience and should be taken an important part in the therapeutic approach and treatment of the patient.

C20
Newly diagnosed temporal arteritis in a patient with polymyalgia rheumatica in remission – case report

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Key words: arteritis, polymyalgia, autoimmune diseases, case report

INTRODUCTION Temporal arteritis or giant cell arteritis (GCA) is an autoimmune vasculitis that affects large and medium sized vessels of head and neck, mostly temporal arteries and causing granulomatous inflammation of vessels. Polymyalgia rheumatica (PMR) is a relatively common chronic inflammatory condition of unknown etiology. It is characterized by proximal myalgia of the hip and shoulder girdles with accompanying morning stiffness that lasts for more than 1 hour. Both are diseases of the elderly,with prevalence of approximately 20 per 100 000 people over the age of 50 years. The average age of onset is 70, the incidence rises with age and may reach 1% by 80 years of age. There is female reponderance of about 3:1. They are sometimes considered as separate diseases, but researches have shown that 10% of PMR patients at some point during their disease course develop giant cell arteritis.

CASE PRESENTATION A 74 year old female patient presented to the emergency department with a severe headache mainly in the frontal region, followed with skin ache in the right temporal region and pain behind the left eye, increasing while chewing and swallowing. Patient's mother died from brain stroke aged 86. All of her brothers and sisters were diagnosed with hypertension, as well as herself 20 years ago combined with hyperlipidemia, but regularly taking medications. In childhood patient underwent tonsillectomy. In 2015 she was hospitalised due to lack of strength and pain in shoulder muscles and polymyalgia rheumatica was diagnosed. Patient was treated with decreasing dose of glucocorticoid therapy and currently the disease is in remission. MSCT of the brain, done in the emergency department, showed no tumor, hemorrhage or ischemia. Patient was reffered to UHC Zagreb with same symptoms. Thorough clinical examination and laboratory diagnostics were done. Laboratory results showed high C reactive protein, erytrocytes sedimentation rate and fibrinogen and most of the plasma proteins (but not gamma globulins). CDFI of the temporal arteries confirmed the doubt that it is temporal arteritis indeed. Patient was treated with corticosteroids and is responding well to the given therapy.

CONCLUSION Because of diverse clinical presentations and relatively small incidence in population giant cell arteritis is often leading to differential diagnostic di-

lemma. Since GCA is a treatable condition, an accurate and fast diagnosis is crucial to prevent the most serious complication of GCA, permanent vision loss.

C21
Pneumococcal meningitis as a complication of otitis media

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Key words: Meningitis, S. pneumoniae, otitis media, mastoiditis

INTRODUCTION Pneumococcal meningitis is a life-threatening infectious disease that causes inflammation of the meninges. Most cases occur in babies and young children under 18 months of age; however the elderly and people with compromised immune system are also at increased risk. Pneumococcal meningitis can occur when the S. pneumoniae bacteria invade the bloodstream, cross the blood-brain barrier and multiply within the fluid surrounding the spine and brain. More commonly, the S. pneumoniae may cause other illnesses such as: ear infections, pneumonia, sinus infections, which can complicate by meningitis later on.

CASE PRESENTATION A 72-year old man with type 2 diabetes mellitus presented at the emergency department due to severe pain in the left ear. At the time of the examination, he was somnolent and did not answer the questions adequately. His wife provided heteroanamnesis. He has been having secretion from the both ears for 2 weeks and temperature up to 37.3°C. During the night, he became disoriented, he vomited several times and had diarrhoea, but no headache. He has been feeling dizzy for a few days now. His temperature at the time of the examination was 38.8°C, skin showed no petechial rash. Anteflexion of the head was diminished. Pupils were symmetrical and reactive, Babinski in flexion bilaterally. CRP was 187mg/L, Procalcitonin 19,82µg/l, leucocytes 36.8x10-9/l. He received ceftriaxone and dexamethasone before any additional diagnostics was performed and hospitalized in the ICU. CT showed mild atrophy of the brain and thickened mucosa in the otomastoides bilaterally. Hemocultures were positive for S. pneumoniae, as was swab of the auditory canal. Liquor was dense and yellow. The antibiotics were adjusted according to antibiogram–he received cefotaxime. Otorhinolaryngologists advised conservative treatment. A day after he was admitted he completely woke up, his answers were adequate, however his hearing was slightly diminished in both ears.

CONCLUSION Pneumococcal meningitis is a potentially deadly infection, which can also affect the elderly, especially if they have a concomitant condition, which compromises the immune system, such as diabetes mellitus. It can present as a complication of the ear or sinus infection and this is why it is important to treat these as soon as possible in order to avoid the possibility of the development of the meningitis.

C22
Worsening of coronary heart disease caused by dyslipidemia and homocysteinemia: a case report

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Key words: Coronary heart disease, Atherosclerosis, Dyslipidemia, Homocysteinemia, Statins

INTRODUCTION Coronary heart disease (CHD) is a condition caused by decreased blood flow through coronary arteries. The main cause of CHD is atherosclerosis. Some of the well-known causes of atherosclerosis are hypertension and dyslipidemia, with homocysteinemia being another known atherogenic factor. The metabolites of homocysteine give LDL larger atherogenic potential.

CASE PRESENTATION A 53-year-old male patient, with BMI 24.1, came to the hospital because of intensive muscle pain in both legs. The patient survived transmural myocardial infarction at the age of 38 years, and was subjected to surgical revascularization. Since then, he has been on antilipemic therapy (Sortis®). On first physical examination, the patient had regulated blood pressure numbers, while lipidogram showed increased levels of cholesterol and LDL, along with adequate levels of HDL. The patient complained about muscle pain, what was thought to be statin induced myopathy. Pharmacogenetic testing was performed, and it came out negative. Sortis®was replaced with rosuvastatinum (Roswera®). During Roswera® therapy the muscle pain was gone, but the lipidogram showed high levels of cholesterol and LDL. Rosuvastatinum was replaced with Lescol®XL.

On control examination the patient complained about chest pain and dyspnea. Lescol XL decreased the lipid level, but they were still slightly elevated. Radiological findings (CCTA and myocardial perfusion tomography) have shown occlusion of both bypass arteries. It was unexpected that patient had rapid progression of CHD while the lipids were slightly elevated. Laboratory results have shown the elevated serum levels of homocysteine. Further treatment included therapy with statins and ezetimibe and an introduction of vitamin B12 and folic acid in order to decrease the levels of homocysteine.

CONCLUSION Guidelines from the ACC and AHA recommend statins as an optimal antilipemic pharmacotherapy and warn about possible statin`s side effects, such as statin induced myopathy. Homocysteinemia is, together with high LDL, it is responsible for occlusion of bypass arteries and worsening of coronary heart disease. Although mild homocysteinemia is present in general population, it is not given enough attention during medical diagnosis in patients with a high risk of cardiovascular incidents. Early detection of homocysteinemia and a combined treatment of dyslipidemia and hyperhomocysteinemia are necessary to prevent further cardiac events.

C23
Acute appendicitis with unusal presentation

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Key words: Apendicitis, nephritis, clinical picture

INTRODUCTION: Current data suggest that acute appendicitis is the most common underlying cause of acute abdomen in the UK. In most cases the diagnosis is straightforward, but in some rare instances, it can be masked by unorthodox clinical picture. This case report deals with the 49-year-old woman who initially came to seek medical attention to her general practitioner due to flank pain and increased body temperature (38.2°C). After further medical investigation, which included physical examination, blood test and urine sample the patient was sent to the emergency room with suspected nephritis. At the time of admission to the emergency room patient develops pain in the right lower region of the abdomen.

CASE PRESENTATION: A 49- year-old woman presented with one day history of increased temperature (around 38°C) and right back flank and leg pain. The patient was conscious and oriented with hypertension 150/90 mmHg and febrile status 38.2°C. The patient denied dysuria and had no other abdominal or respiratory symptoms. Blood and urine samples showed inflammation with elevated erythrocytes and leukocytes with slight proteinuria. The patient was sent to the ER for further evaluation. At the time of admission to ER patient presented with pain in the right lower abdominal region without previously associated flank pain. The Mc Burney sign was positive and the patient was admitted to the hospital. After the surgical evaluation the patient underwent successful laparoscopic appendectomy. 4 days later the patient was released from hospital.

CONCLUSION: The patient initially had symptoms which would hardly lead to conclusion that the patient suffers from appendicitis, especially after urine sample analysis. As the clinical picture of the patient changed so did the diagnosis.

C24
Complex Course of Influenza: A Case Report

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Key words: influenza, acute respiratory distress syndrome, multiorgan failure, vaccination

INTRODUCTION Influenza is an acute seasonal illness caused by a virus, affecting 5 – 10 % of the adult population and 20 – 30 % of children each year. It mostly affects the respiratory system. The most common symptoms are high body temperature, cough, headache, shivering, muscle pain and discomfort in general, in most, it is self–limiting and ends in a couple of days. Influenza virus damages the mucous tissue of respiratory system which can lead to acute respiratory distress syndrome (ARDS); damaged mucous tissue allows microbes to penetrate deeper into lung tissue where they cause secondary pneumonia. The best protection against the influenza is vaccination, which reduces the incidence and alleviates the course of the illness.

CASE PRESENTATION A 40-year-old female, without any previous illnesses, without medical history of vaccination against influenza, was hospitalized in Intensive Therapy Unit in University Medical Centre Ljubljana because of ARDS after the infection with Influenza A virus. The illness was complicated by pre-renal acute kidney failure and there was a need for fluid replacement and vasoactive support. After few days of therapy respiratory failure occurred, that's why veno-venous extracorporeal

membrane oxygenation (VVECMO) was inserted. After two weeks of intensive therapy, illness was further complicated with hospitalacquired bacterial pneumonia and multiorgan failure. Health situation additionally complicated with Guillain – Barré syndrome with flaccid tetraparesis. After 25 days of hospitalization in ITU the patient was discharged into Intensive Care Unit of a regional hospital for another 10 days before continuing with rehabilitation in University Rehabilitation Institute. After 39 days of rehabilitation, she got fit enough to perform everyday activities.

CONCLUSION This case report presents an extremely hard course of influenza in previously healthy young human. Therapy can be long-lasting and consequences permanent. In comparison with influenza complications and high therapy expenses vaccination by far costs less and should, therefore, be better promoted.

C25
Public Health Challenges in Adolescent with Epilepsy: A Case Report

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Key words: epilepsy, psychosocial issues, psychiatric disorders, national epilepsy organizations

INTRODUCTION Epilepsy is beside a migraine the most common chronic neurological disorder. Epilepsy is associated with an increased risk of a variety of comorbidities that can adversely impact the quality of life. Comorbidities can arise due to underlying predispositions, direct effects of seizures and adverse effects of antiseizure drugs. People with epilepsy suffer from loss of independence, underemployment, and decreased physical activity compared to unaffected adults, depression, and anxiety are particularly common in these people.

CASE PRESENTATION A 13-year-old male with cerebral palsy (I. degree) was complaining about headaches with visual impairment and vomiting, they last for 2 to 3 hours and pass spontaneously. They appear one to two times per month for the last two years. EEG didn't show any epileptiform activity, MRI of the head showed periventricular leukomalacia and smaller left hemisphere. Because of positive familiar history, we concluded that he was having migraines with visual aura. For two years he was healthy, he only had occasional migraines. Then one day he experienced a migraine again. At the start of a headache, he saw colorful halo on the right side of the visual field with a tingling sensation in right arm and leg. The migraine was followed by clonic seizures on the right side of the body. In emergency department he got treated with lorazepam, after which he stopped breathing, so he was intubated and sedated. Later, clinical examinations didn't reveal any new abnormalities. Because of long epileptic seizure neurologist decided to treat him with an antiseizure drug. He had annual follow-ups at neurologists and psychologist and only once had a recurrent epileptic seizure. Within the last two years, he was regularly taking antiepileptic drugs and had no epileptic episodes. Despite all this, at the first year of high school, he was forbidden to go on a school trip - headmaster thought he would present danger to himself and others if another seizure occurred.

CONCLUSION Epilepsy is common disease people don't know much about. In society, there is much prejudice and fear, which negatively impacts the quality of patient's life. Local or national epilepsy organizations strive to protect human and civil rights of people with epilepsy, promote research into prevention, treatment, care and consequences of epilepsy and organize workshops to educate the professional and general public.

C26
Uterine leiomyoma: A case report

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Key words: uterine leiomyoma, iron deficiency anemia, curettage, hysterectomy

INTRODUCTION Uterine leiomyoma (UL) is the most common pelvic tumour in women. The tumours are benign and arise from the smooth muscle cells of the myometrium. Typical presentation of UL is abnormal uterine bleeding, pelvic pain or pressure and reproductive dysfunction. Early menarche, nulliparity and obesity increase risk of developing UL. They are most common among pre-menopausal women.

CASE PRESENTATION A 44 years old nulliparous woman was sent to internal medicine emergency department due to severe asymptomatic sideropenic anaemia which was discovered by a general practitioner. In the last months she had increasingly heavy menstrual bleeding with large blood clots. She noticed an increased urination frequency in the last year. Her last gynaecology

check was 4 years prior. In a laboratory a low serum ferritin and low haemoglobin (53 g/L) were found. She was tachycardic, afebrile, normotensive and SaO2 was 96%. She got 200 mg of ferrum in 250 ml 0,9% saline i.v and Fe(III) sulphate 200 mg per day was prescribed. We also screened her for hypothyroidism which is common cause for heavy menstrual bleeding. In clinical examination abdominal mass 2 cm over umbilicus was palpated. Ultrasound revealed 19 X 23 X 12 cm unhomogenic limited formation which could originate from myometrium. We consulted a gynaecologist who ordered abdominal CT which showed to level L3 enlarged uterus with 10 cm heterogenic liquid formation spreading in the lumen and growing into the anterior wall of uterus. Curettage of uterus was made and histological findings were tested for UL. After curettage ulipristal acetate 5 mg per day was prescribed. After 6 weeks transabdominal hysterectomy was made under general anaesthesia. Foley catheter, vaginal and abdominal drainage tube were placed for 2 days. She got antithrombotic protection with Fragmin 5000 IE per day subcutaneously and Ibuprofen 400 mg/ 8h per os. On 5th day her laboratory was normal, the wound was clear, abdomen was soft. She went home. We advised her Fragmin for 10 more days, good hygiene of the wound and removal of sutures on 7th day after surgery. In case of fever, severe abdominal pain and bloody vaginal discharge she was advised to come back immediately, otherwise after 3 weeks.

CONCLUSION UL is the most common indication for hysterectomy. Ulipristal acetate could be prescribed for up to 3 months of preoperative therapy to reduce the volume of UL. Asymptomatic small UL can usually be followed without intervention.

C27
Systemic lupus erythematosus associated with acute transverse myelitis

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Key words: systemic lupus erythematosus, transverse myelitis, anti-cardiolipin antibodies, rituximab

BACKGROUND Transverse myelitis is an inflammation of the spinal cord extending across the entire width of the core. The spinal cord lesions can extend across one or more vertebral segments. Several causes responsible for the occurrence of myelitis have been identified, some including autoimmune diseases such as SLE. TM is rare but still potentially severe complication of SLE, both in acute or subacute onset, causing variable forms of motor, sensory and autonomic dysfunction within the central nervous system. We present the case of the 24-year-old woman with a longitudinally extensive transverse myelitis - LETM associated with systemic lupus erythematosus.

CASE PRESENTATION The patient is a 24-year-old woman who was admitted to hospital after sudden onset of fever and generalized rash followed by limb weakness and tetraparesis. In 2010 she was diagnosed with developed stage of nephritis and secondary antiphospholipid syndrome. Previously the disease was held under control and she was clinically stable. After the initial symptoms occurred, patient lost consciousness with convulsions and needed mechanical ventilation. The demyelination zones within brain and spine tissue were found on MR. After the infectious etiology of demyelination was excluded, the diagnosis of LETM was set. Immediately afterwards, the first line treatment of combined immunosuppressive therapy with pulse doses of steroids, plasmapheresis and IVIG started. Due to failure of the first line treatment, the patient was switched to cyclophosphamide and rituximab that led to partial recovery of the patient.

CONCLUSION Although the connection of SLM and TM isn't completely clear, the occurrence of TM is usually linked to presence of autoantibodies (eg antiaquaporin 4 (AQP4) and anticardiolipin (aCL). These antibodies as key features of antiphospholipid syndrome are considered to have a great influence in pathogenesis of TM. That is way they represent the uttermost relevant biomolecular markers whose presence in patients with SLE could enable us to timely detect a greater risk of developing TM. Therefore, being aware of the risk of these complications based on primer findings could help us to diagnose early and start a prompt treatment. Since TM associated with SLE is very rare, definite treatment guidelines have not yet been established. Intravenous steroid and cyclophosphamide is the standard regimen but due to the variable response to this therapy, in case of refractory disease other treatments such as plasmapheresis or rituximab are optional.

C28
Deep vein thrombosis with pulmonary embolism and Influenza B infection

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Key words: Deep vein thrombosis, pulmonary embolism, influenza B

INTRODUCTION When a blood clot, usually from a deep vein thrombosis, travels to the lung and blocks a blood vessel, pulmonary embolism occurs. Patients normally present with shortness of breath, cough with a bloodstreaked sputum, and chest pain that usually worsens with deep inspiration. As it can be a life threatening complication, quick and correct diagnosis and treatment are vital.

CASE REPORT A 82-year-old patient came to the emergency unit complaining of progressive swelling of the left leg. One day before admission the legache began and he developed dyspnea on exertion. He denied having a fever or chest pain, though he noticed a sudden appearance of dry cough for the last two days. During the examination he was eupnoic with normal body temperature, breathing sounds were normal, except for some expiratory wheezing. Left leg was swollen and warm to touch, a little redness was present around the knee. Calf muscles were not painfull neither on palpation nor on dorsiflexion of the foot. The laboratory results revealed high D-dimer values, high CRP and low platelet count. ECG showed sinus rythm with inverted T wave in D3, Doppler ultrasound exam of lower limbs detected non-passable and non-compressible left femoral vein. CT scan of the lungs later revealed billateral pulmonary embolism. The patient was immediately given 15.000 IE of LMW heparin. Department of vascular diseases in Ljubljana was consulted and continued LMW heparin was advised. The patient was placed on continuous daily monitoring. On the second day a further drop in platelet count was registred, so tests for viral infections were made which came positive for Influenza B virus. During the four days of hospitalization he remained stable without need for additional oxygen. Normalization of the platelet count was observed with symptomatic treatment. He was released on long term anticoagulation therapy with rivaroxaban and daily use of elastic compression for his left leg.

CONCLUSION Pulmonary embolism is a common complication of deep vein thrombosis. Laboratory results usually show very high D-dimer values, ultrasound can locate the affected vein of the leg, and CTa of the lungs shows occluded vessels. Treatment is anticoagulant therapy, in more severe cases thrombolysis or embolectomy may be required.

C29
Gallbladder perforation with hemoperitoneum

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Key words: Perforation, emergency surgery, acute cholecystitis

INTRODUCTION Gallbladder perforation (GBP) is a rather rare and potentially fatal condition, which most commonly develops as a complication of acute cholecystitis. Its presentation can vary between non-specific symptoms and more severe manifestations, such as acute abdomen.

CASE PRESENTATION 68-year-old male was admitted to the emergency room complaining of a strong dull pain in the upper two quadrants of the stomach, radiating to the chest. It appeared twice in the last week and spontaneously subsided after 20 minutes, last time just before his arrival to the ER. He denied nausea, vomiting, fever and any other current health issues. His medical history shows hypertension, hyperlipidemia and TIA 8 years ago. His regular therapy includes Prenessa, Crestor and Aspirin. On admission he was afebrile with a HR of 69/min and BP of 162/92. The physical exam was within normal limits, except for the pain on palpation in the upper right quadrant of the stomach. ECG was normal, laboratory tests showed mild leucocytosis, elevated bilirubin, AST, ALT, gama GT and AF, increase in CRP levels and negative pancreatic enzymes. Ultrasound of the stomach revealed cholecystitis and gallbladder wall thickening, non-dilated bile ducts and some biliary sludge. Afterwards biliary sphincterotomy was carried out during ERCP, as well as extraction of the sludge. He also received antibiotic, analgetic and spasmolytic therapy and laboratory tests normalized. Two days later the patient felt sudden strong pain under the right rib cage, his stomach was tender and abdominal guarding was present. An immediate CT od abdomen was performed, which showed gallbladder perforation along with hemoperitoneum. Emergency open cholecystectomy was carried out, blood in the peritoneum was aspirated and drain was inserted. Histopathology report revealed exacerbation of chronic cholecystitis with necrosis and flegmonous inflammation. After the surgery the patient continued with antibiotic therapy and received concentrated erythrocytes, analgetic treatment and anticoagulant therapy. His condition greatly improved, hemoglobin was stable and inflammatory markers decreased, therefore he was soon released from the hospital in a stable state.

CONCLUSION Since the morbidity and mortality of GBP are high, prompt diagnosis and immediate treatment are paramount. The best approach is instantaneous surgical intervention as to possibly avoid any further complications.

C30
Decompensated heart failure caused by pneumonia

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Key words: Decompensated heart failure, pneumonia, respiratory insufficiency

INTRODUCTION Decompensated heart failure (DHF) is a deterioration of the signs and symptoms of heart failure, which typically includes dyspnea, leg or feet swelling and fatigue. It is a common and potentially serious cause of acute respiratory distress.

CASE REPORT 89-year-old male came to the emergency department because of progressively worsening dyspnea on exertion. He felt prostrated and drowsy, as he did not get enough sleep at night due to shortness of breath. He denied having chest pain and fever, however, for the last few days he had signs of common cold as well as productive cough. He is being treated for arterial hypertension and has a known 2nd grade AV block – Mobitz I, atrial fibrillation and hypertensive heart disease. He was also diagnosed with prostate cancer, kept on hormone therapy. In 2009 he suffered myocardial infarction of the inferior wall, treated with PCI, implanting three stents on RCA. On admission he was tachypnoeic, acyanotic, afebrile, HR 91/min, BP 139/79 and oxygen saturation 77% while breathing room air. Lung auscultation revealed bibasal crackles, heart action was arrhythmic. Mild pretibial pitting oedema was present on both legs. Laboratory tests detected leukocytosis, slightly elevated troponin, high NT-pro BNP and D-dimer as well as mild anemia. ECG showed atrial fibroundulation and chest x-ray revealed infiltrates in the right middle lobe, moderate interstitial oedema and enlarged heart. Due to the possible pulmonary embolism CTA of lungs was performed, which showed bilateral pleural effusion, partial atelectasis of right middle lobe, signs of pulmonary hypertension, enlarged heart, however, no embolisms. The underlying cause of DHF was a respiratory infection and during the hospitalization he received additional oxygen via a venturi mask, diuretic, antibiotic and LMW heparin due to suspected PE before CTA was performed. While being hospitalized the parameters of inflammation and troponin decreased. He was discharged from the hospital after three days with increased diuretic dosage and peroral antibiotic treatment.

CONCLUSION Pneumonia can be one of THE many causes of DHF. Recommended treatment consists of ventilation support, curing the underlying infection and decreasing the cardiac strain due to volume overload.

C31
Treatment of grade 3b open tibia fracture after explosive injury

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Key words: explosive injury, open fracture, soft tissue injury, distal leg fracture, surgical treatment, osteosynthesis, mio cutneus free flap, latissimus dorsi free flap

INTRODUCTION A 30 year old female was injured due to an explosive device planted under a car in 2017. Initial treatment was provided in a local hospital. The initial surgical treatment included amputation of the right lower leg. Also, debridement of a large 10 cm soft tissue defect on the distal anterio-lateral side of left lower leg with open fracture of distal tibia and fibula which was stabilized temporarily by external fixation. Ten days after the injury the patient was transferred to Clinical Hospital Rebro in Zagreb, Croatia for definitive treatment.

CASE PRESENTATION At the time of admission to Clinical Hospital Rebro, the patient was in stabile condition. She suffered heavy injuries to her lower legs, right arm, right tympanic membrane and right cornea. First a revision of the left lower leg wound, with V.A.C drainage placement, was made and re-amputation of her right lower leg at the level of knee. On the 48th day after the injury, osteosynthesis of fractures of the phalanges of the right hand were made. After several debridements of the left lower leg wound with V.A.C. drainage reconstruction of the bone defect was undertaken on the 60th day. The bone defect of the left distal tibia was reconstructed using spongioplasty. The defect of the tissue was covered with a free musculo-cutaneus flap taken from right side of back (m. latissimus dorsi free flap). On the 87th day after the injury the temporary external fixation was replaced with the permanent osteosynthesis using locked intramedullary nailing.

CONCLUSION A large-scale rehabilitation was undertaken using the treatment plan set out by the multidisciplinary team. The plan included complex physiotherapy, orthosis for the left leg and bionic prosthesis for the right. The patient was discharged from Clinical Hospital Rebro 103 days after the injury. At the time of discharge the patient was able to dress herself and walk with the help of a high crutch while at the same time utilizing orthosis

of the left leg and prosthesis of the right leg.

C32
Spontaneous pneumothorax in adolescent male

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Key words: primary spontaneous pneumothorax, asthenic young male, thoracostomy, change of atmospheric pressure

INTRODUCTION Spontaneous Pneumothorax (PSP) is defined as a gathering of air located within the thoracic cage, between the visceral and parietal pleura and occurs in the absence of any trauma. It predominately affects males, typically with a tall, thin body habitus.

CASE PRESENTATION A 15 years old male patient with asthenic constitution spending his holidays in Slovenia was brought to Department of Pediatrics due to chest pain. For the last 3 days he has been suffering chest pain radiating to his left arm. He had episodes of palpitations with feelings of ceased heartbeats lasting a few seconds. He is a water polo player. He noticed similar less intense chest pain twice in previous months, which resolved spontaneously without medications. One time the pain occurred after an airplane flight. There is no family history of pulmonary or cardiovascular disease. His medical history revealed no diseases or substance use. His vital signs were all in normal range: he was afebrile, normocardic, normotensive, eupnoic, oxygen saturation was 100%, blood pressure was: 128/67. Physical examination reveals protruding breastbone – pectus carinatum. Heart auscultation sounds and breathing were better heard on the right hemithorax. During percussion we notice hypersonnance of the left chest side. The laboratory results show no abnormalities: CRP was 0,9, Troponin T was 0,003. ECG was performed twice and showed sinus rhythm. We gave him ibuprofen 400 mg orally and took him for chest X ray in posteroanterior projection, which showed us pneumothorax at the left side with more rightly positioned heart. The patient was urgently consulted with Surgery Department. Under local anaesthesia Büllau thoracostomy tube was placed. After his left lung expanded, the pain was resolved and the X ray image was normal. He got i.v. analgetics. Respiratory physiotherapy breathing exercises were performed. Passive thoracostomy drainage tube was displaced after 4 days. After 6 days he was discharged home. We advised him to not fly home or do any physical activates for 1 month and to visit a paediatric pulmonologist for examination to exclude lung disease.

CONCLUSION Rapid change of atmospheric pressure is one of the main risk factors for PSP development. For the first PSP chest tube insertion is recommended, if PSP is large and for small PSP symptomatic treatment can be affective. In case of persistence of airleak chemical pleurodesis should be performed.

C33
Giant frontoethmoidoorbital mucocele as a late complication of orbital cellulitis

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Key words: mucocele; paranasal sinuses; marsupialization; orbit

INTRODUCTION Paranasal mucoceles are typically benign cystic masses lined with respiratory epithelium. The disease most commonly presents with ocular and nasal symptoms, however neurological symptoms can also occur. Symptoms are usually relieved by an endoscopically performed marsupialization.

CASE REPORT In this case report, the patient is a 16 year old boy with significant asymmetry of bulbi, whose main complaint is constant spontaneous lacrimation of the affected eye lasting for almost one year. The patient underwent surgical treatment of orbital cellulitis at the age of three, but hasn't been followed up on since. Current operation included endoscopic marsupialization and dacryocystorhinostomy, which resolved the aforementioned epiphora.

CONCLUSION Due to the longstanding bone growth affection caused by the mucocele, the eye position did not change much postoperatively.

C34
Intermediate-high-risk pulmonary embolism

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Key words: Pulmonary embolism, intermediate-high-risk, anticoagulant therapy

INTRODUCTION Pulmonary embolism (PE) is a relatively common condition caused by a sudden closure of a pulmonary artery or its branches, mainly due to a thrombus. As it can be life-threatening, correct diagnosis and appropriate treatment are of grave importance.

CASE PRESENTATION An 86-year-old female was admitted to the emergency department, after she was found lying in front of the hospital. She was conscious, complaining of nausea and vomiting. She denied having a headache, chest or abdominal pain or any injuries. Her medical history shows a cardiac ablation due to tachycardia in 2004 and TEP of the left knee several years ago. She regularly takes vitamin D3 drops and Lexaurin if needed. On admission she presented with a HR of 85/min, BP of 110/50 mm Hg, which soon rose to 130/80 mm Hg and oxygen saturation of 88% while breathing room air. She was slightly confused, tachypneic, lips were cyanotic and jugular veins distended. Lung and heart auscultation were without abnormalities, peripheral pulses were palpable. Neurological status was within normal limits. ECG showed sinus rhythm and LBBB of unknown duration. Laboratory tests revealed high D-dimer and NT-pro BNP, slightly elevated troponin and mild thrombocytopenia. Head CT excluded brain hemorrhage and acute brain stroke. CTA of pulmonary arteries detected a large bilateral pulmonary embolism, enlarged heart and signs of right ventricular strain. Initially, she was given oxygen through nasal cannula, antiemetic, PPI, IV fluids and heparin in bolus and in continuous infusion. She was categorized as intermediate-high-risk PE group and transferred to intensive care unit, where she was closely monitored. She required some supplemental oxygen, breathing later normalised, her BP remained stable throughout the hospitalization. She started receiving a long-term anticoagulation therapy (rivaroxaban) and was transferred to a regular room, where she continued with rehabilitation. Eight days after the incident she was released from the hospital in a stable cardiorespiratory state and without any pain or dyspnea during exertion.

CONCLUSION Patients with intermediate-high-risk PE should receive anticoagulant therapy and be closely monitored for any signs of hemodynamic deterioration. Should the latter occur, thrombolysis and embolectomy are to be considered. It is important to assess the risk-to-benefit ratio of a certain type of therapy on a case-to-case basis and then determine which type of treatment to select.

C35
Thrombophlebitis of the great saphenous vein

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Key words: Thrombophlebitis, superficial, saphenofemoral junction

INTRODUCTION Superficial thrombophlebitis (ST) is an inflammatory condition due to a blood clot in a surface vein. Most commonly it is self-limiting, in some cases, however, it can advance into the deep vein system and lead to complications, namely deep vein thrombosis and pulmonary thromboembolism.

CASE PRESENTATION A 59-year-old female came to the emergency room complaining of a burning pain on the medial side of her right knee, along with redness, warmth and swelling of the area, all starting 4 days ago. After two days, her condition worsened as the pain radiated up along the thigh. She denied having a fever, dyspnea, chest pain or a history of similar problems. She is overweight, does not smoke and is being treated for hypercholesterolemia. She has a bilateral chronic venous insufficiency. During the examination she was eupnoic with 96% oxygen saturation, body temperature of 37.4°C and HR 102/min. Varicose veins and stasis dermatitis were visible on both legs, more prominent on the right. Most of the medial side of her right leg was warm and swollen, with redness extending from the calf to the groin. The affected area was tender on palpation, with firm knobbly lumps along the vein. A mild bilateral pretibial pitting oedema was visible, peripheral pulses were symmetrically palpable, Homan's sign was absent. The rest of the physical exam was without abnormalities. ECG was normal. Doppler ultrasound exam of lower limbs showed bilaterally passable and fully compressible common femoral and popliteal veins. Right great saphenous vein was varicose with a ST of at least 60 cm in length, extending from below the knee to the saphenofemoral junction (SFJ). As the thrombus was within 3 cm of the SFJ, it was considered equivalent to a deep vein thrombosis, so we opted for anticoagulation therapy. The patient received Fragmin subcutaneously in a full-therapeutic dose. She was prescribed rivaroxaban for 3 weeks; afterwards, a check-up at the anticoagulation clinic and a lowering of the dos-

age is advised. As the ST occurred as a consequence of varicose veins, the anticoagulant treatment should last 3 months. We prescribed analgetics and suggested wearing compression stockings. In case of dyspnea, an immediate visit to the doctor was advised.

CONCLUSION The treatment of ST is aimed at alleviating the pain and inflammation as well as preventing thromboembolic complications with anticoagulation therapy. The duration of the latter depends on the cause of the condition.

C36
Bullous Pemphigoid

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Key words: bullous pemphigoid, autoimmune disease, BP180, BP230, tense blisters, histology, direct immunofluorescence, oral and topical corticosteroides, dapsone, dressing of the skin

INTRODUCTION Bullous pemphigoid (BP) is an autoimmune subepithelial blistering skin disease, characterised by autoantibody deposition at the epithelial basement membrane zone. Autoantibodies BP 180 and BP 230 are found and correlate with disease activity. It is primarily a disease of elderly adults. Some published reports have addressed the connection between BP and neurologic disorders.

CASE PRESENTATION As a young MD on a practical exchange program at the Dermatology Department of the University Hospital in Coimbra in spring 2017, I worked on a case of BP. A 73-year-old lady, diagnosed with dementia, was brought to our department due to skin rash and blisters. She had had a cough with fever 4 weeks before and had taken some paracetamol and developed urticaria-like skin lesions with pruritus. Her daughter thought it was an allergic reaction and gave her anthistaminics, but to no avail as blisters developed and the pain got worse, so she brought her to the hospital. Physical examination showed us an itchy maculopapular rash with tense blisters and some open erosions on abdomen, legs and arms. She was hospitalised at our department. Skin biopsy was performed and samples of lesional tissue (for histology) and perilesional tissue (for direct immunofluorescence (DIF)) were taken. In histology subepidermal blisters with numerous eosinophiles were seen. DIF showed Ig G and C3 deposits along the basement membrane. The diagnose was BP. High titers of BP 180 and BP 230 were measured. Oral corticosteroide prednisolone (0.5 mg/kg/day) and clobetasol propionate ointment (0.05 %) 2 times daily were prescribed. Regular dressing of the skin was performed. Tense blisters were ruptured, without the removal of the skin, with a sterile needle. Open erosions were covered with non-stick dressing materials to lower the risk of skin infection. Due to good response we discharged her home after 2 weeks. She had an appointment at our outpatient clinic after a month and we started to reduce the corticosteroide dose. She now has regular appointments at the dermatology clinic. In the following months dapsone (50 mg/day) will be used as a substitute for corticosteroide in maintenance therapy.

CONCLUSION BP is a chronic illnes which usually does not improve without active treatment, which consists of a control phase and a maintenance phase. Corticosteroids and dapsone are the most common treatment, immunosupresants, rituximab, IVIG and anti-inflammatory agents are also used.

C37
Clinical Case: Sickle Cell Crisis Exacerbated by Malaria Infection

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Key words: Sickle Cell Crisis, Sickle Cell Disease, Kenya

INTRODUCTION Sickle cell disease (SCD) is an autosomal recessive red blood cell disorder. It results in an abnormality in haemoglobin (Hb). The most common clinical manifestation of SCD is vaso-occlusive crisis or sickle cell crisis (SCC). SCC occurs due to microvascular occlusion and chronic hemolytic anemia. It results in tissue ischemia leading to acute and chronic pain as well as organ damage that can affect any organ system. Hb electrophoresis confirms the diagnosis but is often unavailable. If not available, a positive sickling test in the presence of clinical signs of SCD supports the diagnosis. Management of pain episodes includes hydration, anti-inflammatory agents, and pain medication.

CASE PRESENTATION A team of junior doctors from Slovenia was practicing in the rural area of southwest Kenya in the autumn of 2017. A 17-year-old female is brought to the office due to intensive pain located in the lower extremities and upper back. It started last night. She couldn't sleep due to severe intensity of the pain. Paracetamol provided no pain relieve. She is diagnosed with SCD and doesn't take regular therapy. The last episode of pain was 1 month ago but was not as severe as this one. She is the mother of a 9-month old child. She is

in obvious distress, subfebrile, cardiorespiratory stable, RR 120/70, HR 90/min, saturation 98 %. Physical examination reveals splenomegaly and no other abnormalities. She is started on IV fluids and opioid analgesia. The laboratory results show positive malaria test and Hb level of 6,9 g/dl. She is started on PO arthemether-lumefantrin 20mg/120mg 4 tablets twice daily. The pain is relieved and appropriate rehydration provided. She is educated about the importance of supportive therapy for SCD and prescribed 5 mg folic acid PO once daily. She is instructed to use mosquito net and advised to take her child to the nearby governmental hospital where SCD scan can be performed. She is educated about SCD with SCC.

CONCLUSION SCD is a hereditary blood cell disorder which most commonly manifests as a painful episode called SCC due to vaso-occlusion of microvasculature. The patient with a known diagnosis of SCD presented with a malaria infection in severe distress due to pain. The diagnosis of SCC is made clinically. Prompt rehydration and analgesia are needed. The treatment of underlying infection is necessary.

C38
Fragile x syndrome and correspondence with premature ovarian insufficiency

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Key words: Fragile x syndrome, premature ovarian insufficiency, FMR1 gene

INTRODUCTION Fragile X syndrome is a genetic condition that is inherited in an X-linked dominant pattern and causes a range of developmental changes including cognitive disabilities as well as recognizable physical signs. This is usually caused by a mutation of CGG triplet repeat that is expanded within the FMR1 gene (more than 200 times). This turns off the FMR1 gene, which prevents the gene from producing FMRP, a protein that plays a role in the development of synapses. Deficiency of this protein disrupts nervous system functions and also can be underlying etiology of premature ovarian insufficiency (POI).

CASE REPORT We present the case of 26-year-old patient with fragile X syndrome and premature ovarian insufficiency. Her mother prematurely reached menopause at age of 36, also patient has two sisters that reached menopause at the age of 22 and 36 years respectively. The younger one spontaneously conceived after two cycles of taking HNL. Patient menarche was at 14 years of age and menstruation cycle was regular until the age of 22 when it stopped. Consequently, she significantly gained weight, had symptoms of hot flushes and hypertension was present. In initial endocrinology work up biochemical tests of hormonal concentrations showed elevated concentrations of FSH and LH and very low levels of estradiol and AMH, the thyroid function was normal (FSH 32,1 IU/L, LH 14,9 IU/L, E2 < 37 pmol/L, AMH 0,02 ng/mL, TSH 3,18 mIU/L). Transvaginal ultrasound performed by gynecologist showed no abnormalities. Possibility of gonadotropinoma was excluded by normal MRI of pituitary gland. So, we concluded that menstrual cycle cessation is due to premature ovarian failure. In order to explore etiology of condition and keeping in mind family history, the sample was sent on molecular-genetic analysis and fragile X syndrome (more than 200 CGG triplets) was confirmed that same year. Later on, the same syndrome was confirmed in both of sisters. Patient started therapy with oral contraceptive agents and was consulted about pregnancy options, primarily egg donation, even though the possibility of spontaneous pregnancy is not totally excluded.

CONCLUSION We wanted to stress the importance of evaluation of etiology of premature ovarian insufficiency (POI) because the diagnosis, such as fragile X syndrome, dramatically influence the life of patient and early diagnosis is crucially important for the family planning as for the patient, as well as for the rest family members.

Abstracts

Workshops

Primary wound care workshop

Student surgical society kindly invites you to the primary wound care workshop. As young doctors we will often come across wounds. But do we really know how to manage wounds? Do we know how to make proper history, examination and access to the wound?
On our workshop, you will learn which wounds need special surgical attention, which wounds should and which should not be sutured. What kind of drugs do we use in wound care management and how often do we need to check the wound after the care. Also, we are going to teach you how to suture and show you how to make some basic, most common used knots in surgery.

Hope to see you there!
Your Student surgical society

Authors:
Zlatan Ibradzic, Lenart Zore
Andro Kosec, MD, PhD

Time:
Wednesday, April 11, 2018
17:00 - 19:00

Location:
Hall E
"Andrija Štampar" School of Public Healh

Laparoscopic workshop

Student surgical society kindly invites you to the laparoscopic workshop. Laparoscopic surgery is one of the most revolutionary things that happened to surgery in the last decades and has become standard procedures in many surgical branches. By its minimally invasive approach, the surgeons are able to do less tissue damage, which produces less stress response, and the patient recovery is much faster.
In this workshop each participant will have the opportunity to learn basic laparoscopic skills. There will be a simulator with a real laparoscope on which precipitants will be able to operate, assist and experience surgery simulation.

Hope to see you there!
Your Student surgical society

Authors:
Josip Jaman, Yannick Mudrovcic
Asst. Prof. Hrvoje Silovski, MD, PhD

Time:
Thursday, April 12, 2018
16:30 - 18:00

Location:
University Hospital Centre Zagreb

Open fractures management and treatment

Student surgical society kindly invites you to the open fractures workshop. The difficulty of open fracture management has been recognized for centuries. Amputation was the mainstay of treatment until the mid-1800s. Advances in antibiotic prophylaxis, aggressive debridement, open wound management, rotational muscle flaps, free tissue transfer, and bone grafting techniques have dramatically enhanced our capacity to treat severe open fractures.

In this workshop, participants will learn what defines open fractures, how to use Gustilo-Anderson Classification, initial management and outcomes of different treatment methods, what are compartment syndrome and other common complications of open fractures. Participant will be also given an opportunity to learn and practice various kinds of immobilization techniques.

Hope to see you there!
Your Student surgical society

Authors:
Martin Oroz, Ivan Mlakar
Asst. Prof. Ivan Dobrić, MD, PhD

Time:
Friday, April 13, 2018
16:00 - 18:00

Location:
Hall E
"Andrija Štampar" School of Public Healh

Depression prevention

Introduction: depression definition, its psychiatric disorder group belonging and prevention methods.

Main idea: interactive workshop in which we'll encourage participants to share their personal experiences and remind themselves of common stereotypes about depression they heard.

Closing part: presentation of few case reports and appliance of previously learned methods of depression prevention in everyday life.

Authors:
Lea Tomašić, Pia Saskia Müller
Asst. Prof. Vesna Šendula-Jengić, MD, PhD

Time:
Friday, April 13, 2018
16:00 - 18:00

Location:
Hall D
"Andrija Štampar" School of Public Healh

Interpretation of acid base disorders

In this workshop, students will go through the basic physiology of acid base homeostasis, and then slowly build up to acid base pathophysiology.

Using ABG readings from real patients, they will learn to comment and make diagnoses regarding the acid base disorders, and hopefully will master this essential skill of being a competent doctor.

Furthermore, they will learn how to treat the aforementioned disorders.

Authors:
Matej Jelić, Ivona Kovačević, Iva Topić
Neven Obradović, MD
Asst. Prof. Mario Ćuk, MD, PhD

Time:
Wednesday, April 11, 2018
17:00 - 19:00

Location:
Hall C
"Andrija Štampar" School of Public Healh

DIY: Healthy Breakfast

Authors:
Dunja Leskovar, Iva Lukačević, Laura Pavičić, Emanuel Brađašević, Damir Martinović, Sara Lovrenović, Marta Horvat
Asst. Prof. Darija Vranešić Bender, MD, PhD

Time:
Wednesday, April 11, 2018
17:00 - 19:00

Location:
Hall O
"Andrija Štampar" School of Public Healh

Breakfast should be an opportunity to start your day right – eating healthy and nutritious food, fueling up for a busy day ahead. Students often neglect this opportunity, either by eating food full of empty calories and experiencing a sugar rush (leaving them hungry half an hour later), or not eating at all. Practicing such a habit is harmful in many ways. We aim to educate our colleagues about the importance of not only eating in the morning, but eating right.

In order to make sure that having a healthy breakfast each morning becomes a firm habit along the way, we need to set realistic goals: breakfast needs to be quick to prepare, healthy, tasty and inexpensive. This workshop will hopefully set strong foundations to build healthy morning habits upon.

Our plan is to offer numerous examples of healthy breakfast options, satisfying everyone's preferences. We would start by explaining the benefits of each one of them, providing the instructions on how to prepare each meal. After the introduction, each workshop attendant would prepare his/her breakfast of choice, with us guiding them through the process and providing additional information. Our idea is to give each one of the attendants a paper bag in which they would be able to take their prepared breakfast home and have it ready for the next morning or enjoy it as a healthy evening snack.

ECG - Clinical examples

Authors:
Dražen Juraj Petrović, Lucija Marinović, Antun Tonko Jakobović, Matko Spicijarić
Nikola Bulj, MD

Time:
Thursday, April 12, 2018
16:00 - 18:00

Location:
Hall D
"Andrija Štampar" School of Public Healh

This workshop is for anyone who wants to repeat the basics of ECG but also for those who are interested in more advanced cases and improving their knowledge on the subject.

The workshop consists of two parts: first part - 45 minute long lecture and second part - 60 minutes of working in smaller groups.

Participation requires application in advance and number of participants is limited to 20. Participant have to choose between basic and advanced course.

The lecture will cover basics of ECG (how to read ECG, leads...) and then move onto clinical ECG examples, some more advanced than others.

After the lecture, participants will get 10 minute break for snacks and drinks.

Then, participants will be divided into smaller groups. Each participant will recieve a set of ECG examples and lecturers will go through each example. This part was designed as interactive, meaning at any point in time questions from participants are expected and encouraged.

Ultrasound workshop - basics with clinical features

This workshop is designed to help students learn about basical features of an ultrasound and also to learn or improve their skills in ultrasound usage.

It is suitable for anyone who is interested in any kind of medical science because of the widely spread ultrasound applicability and both diagnostical and treatment capacity.

The workshop will consist of two parts: the first part will be a lecture (45minutes) in which we will discuss types of ultrasound, it's benefits and diagnostical features, whereas in the second part-practical part(60 minutes), we will learn and practice how to properly use an ultrasound, combining it with clinical features and cases.

Participants will be divided into 3 groups- each consisting of 5 members(max.15), so the participation requires application in advance.

Authors:
Dorja Sabljak, Ema Mjeda, Iva Mohler, Dora Martinčević
Prof. Radovan Radonić, MD, PhD
Nina Jakuš, MD

Time:
Wednesday, April 11, 2018
17:00 - 19:00

Location:
Hall D
"Andrija Štampar" School of Public Healh

Each participant will have a chance to pratice on all of our 3 working stations (heart, lungs and abdomen, vascular model), 20 minutes for each station.

This workshop is designed to be highly interactive so all the questions at any time are more than welcome.

Promotion of oral health - what hides inside our mouth?

This interactive workshop is consisted of quick, yet important information which future doctors should find useful, not only for their future patients but also for themselves.

It will start with resolving the mystery behind most prevalent bacterial disease in the world – tooth decay, what it actually is, how serious can it be and most importantly, how to prevent it. Periodontal diseases also take place as one of the most prevalent diseases in the world, affecting high percentage of people mostly without them knowing it. We will show you the techniques of oral hygiene, simple and important methods which are so commonly misused.

Do you know how can you suspect diabetes or HIV infection by just looking into someone's mouth? Part of the workshop will also focus on some diseases that affect oral mucosa, part of our body that is often neglected despite the fact that it can show us lots of local, but also systematic diseases that can have their very first symptoms in oral cavity.

Authors:
Lovro Vuger, Martina Balta
Larisa Musić, Doctor of Dental Medicine

Time:
Friday, April 13, 2018
16:00 - 18:00

Location:
Hall O
"Andrija Štampar" School of Public Healh

Basics of - How to design a public-health action?

Student Section for Public Health "Andrija Štampar" kindly invites you to our workshop.

The workshop concept is to learn basics about how public-health action is designed and to try to design simple public-health action by your own!

At the beginning of workshop, you will be introduced to all parameters before planning public-health action such as detecting target groups, financial aspects of action, cost-benefit analysis, importance of media…

Afterwards you will be presented with a simple design of public-health action by your workshop leaders.

After intro and presentation of example of public-health action you will have some amount of time to design a public-health action in small groups and you will present it to the rest of the group. At the end, we will all comment together about your public-health actions and possible improvements.

See you on workshop!

Authors:
Sandro Gašpar, Deni Rkman, Iva Hižar, Sara Mudri
Marjeta Majer, MD, PhD
Asst. Prof. Iskra Alexandra Nola, PhD

Time:
Thursday, April 12, 2018
16:00 - 18:00

Location:
Hall C
"Andrija Štampar" School of Public Healh

Students' activities – doing things right or doing the right things or…?

Along with the regular students' duties, students often engage, through students' associations, in extracurricular activities. Planning and organizing such activities requires personal effort and is time consuming.

What it takes for maximum success of the activity is both doing the right things and doing things right. In other words, it is necessary to have strategic and managerial approach.

Therefore, through this workshop we will introduce youto a simple tool called "policy coil". It can help you in planning your activities – starting with choosing the field of action through the activity's objectives to selecting the best option for realization of the activity. Nonetheless, after delivering the same activity a few times in a row, there is a great chance of it becoming unattractive and dull routine.

To avoid this, a "policy coil" can help you evaluate and improve your activity and detect key points for making the adjustments for your activity always to be contemporary.

Do the right things and do things right!

Authors:
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Asst. Prof. Aleksandar Džakula, MD, PhD

Time:
Friday, April 13, 2018
16:00 - 18:00

Location:
Hall C
"Andrija Štampar" School of Public Healh

StEPP Emergency Medicine Workshop

Authors:
Iva Miličić, Nia Lucija Naletilić, Klara Klarić, Lucija Dabić, Ivona Šamle, Adriana Babić, Petra Jagarinec, Iva Ivković

Time:
Thursday, April 12, 2018
16:00 - 18:00

Location:
Hall E
"Andrija Štampar" School of Public Healh

StEPP Emergency Medicine Workshop session consists of six parts that are organized as different emergency station. Goal of each station is to learn how to recognize life threatening situations and how to properly react and deal with them.

Our first CPR workshop deals with a person in cardiopulmonary arrest. We teach how to asses a person with a probable cardiac arrest through five different scenarios applying standard protocol in checking vital signs, diagnosing arrest and performing cardiopulmonary resuscitation.

In the Airway workshop, we teach how to assess patency of a person's airway. In case of an obstruction we teach proper ways of opening the airway using different techniques and devices, while also practicing manual ventilation. During this workshop we try to emphasize that airway management is the first and most important step in any form of resuscitation.

Remaining workshops deal with traumatized patients. First we teach how to correctly asses a critical patient by using ABCDE mnemonic and provide initial treatment. During the Immobilization and helmet removal workshop we teach when and how to remove a motorcycle helmet and how to properly immobilize the patient for transport using a spinal board and head fixator.

In Crash victim extrication workshop we focus on how to approach a car crash victim and how to extract an injured person.

Dealing with a wide specter of scenarios and through different roles in the rescue team, these workshops present the attendants with wide specter of medical emergencies and provide the required knowledge in order to properly resolve them.

Mental Health from Head to Toe

Authors:
Kristina Stamenković, Katarina Mandić, MD, Hana Lučev, MD, Ana Stručić, Anica Sabljić Zrinka Ćavar, MD

Time:
Thursday, April 12, 2018
16:00 - 18:00

Location:
Hall O
"Andrija Štampar" School of Public Healh

Mental health and mental illnesses are a growing problem in our society, not only because of its raising frequency, but also because of the stigma surrounding it and the people suffering from mental problems. We, as medical students and future doctors are faced with everyday challenges and stress situations which can be resolved by maintaining mental hygiene.

In this workshop we will introduce participants with the concept of mental hygiene, work on the steps that can be taken to improve our mental health and reduce stressors in our everday life. We will explain a difference between the view we have on ourselves and the way other see us, and how that view determine our identity.

Also, we will talk about labels and stigmatization and show how everyone of us sometimes has a tendency to put labels on others and also on ourselves and in what way we can cope with that stigma. Participants will have a chance to talk about their own experiences and learn about mechanisms that are behind many mental health issues.

The main outcomes of the workshop are:
-to recognize importance of mental hygiene
-to improve perception and opinion of yourself
-to make everday introspection and recognize our own feelings, emotions, needs and relations with other people

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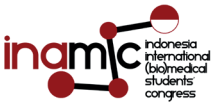

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