BOOK OF ABSTRACTS

University of Zagreb
School of Medicine

12th

International Biomedical
Croatian Student Summit

30.03. - 02.04.2016.

GYRUS

Editorial Board
Uredništvo

FOUNDED 2013
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MARCH 2016

Gyrus was founded by Student Society for Neuroscience, School of Medicine, University of Zagreb
Seat: Croatian Institute for Brain Reasrch

Gyrus is published quarter-yearly (March, June, September and December)

The articles are categorized according to "Instructions for journal editorial boards" available at the Gyrus web site: **gyrus.hiim.hr**

Instructions for journal editorial boards

Gyrus is a scholarly journal that publishes reviewed articles from different fields of biomedicine and public health. Emphasis is put on fields that deal with nervous system. Primarily disciplines of Neurology, Neuroscience, Neurosurgery and psychiatry. All articles published in Gyrus are original and reviewed, thus for any further publishing of the same article written consensus of editorial board is needed.
All written works are submitted in one sample written in two columns (30 lines per page) in digital form in Word format (Font: Times New Roman, size 12). With every article author(s) are obligated to fulfil Application Form (Prijavni obrazac) as well as Text Form (Obrazac teksta). Both forms are available on journal web pages. Article with all needed forms filled out is to be sent on following e-mail address: prijava.gyrus@outlook.com.
With every article key words, and abstract are to be attached. Additionally title, abstract and key words are to be sent in both Croatian and English. Abstract is to have from 150 to 300 words. Recommended length of the article is 5 to 10 standard pages (1 standard page = 1800 characters with spaces. Recommended number of key words is 5 – 7 which are to be listed alphabetically and are standardized according to MeSH online base of appellation.

Article Form
Articles are written in clear scholar form with introduction, developmental part, discussion and conclusion. For transparency subtitles are recommended with appropriate multi-level headings.
Standard abbreviations are allowed and do not need further explanation (Ex.: mRNA, ATP etc.). However when using specific abbreviations full term is to be written and then abbreviation can be used (Ex. Scientists from Institute Ruđer Bošković (IRB) came to the following conclusions… …Thus IRB is one of leading scientific institutions in that field.)
When naming different species their Latin names are to be used according to standard taxonomy. Binominal nomenclature Latin name is to be written in Italic style (Ex. Mouse – Mus musculus). Full naming is necessary only in first mentioning and can be later on be denoted as abbreviation (M. musculus). Ganus is to be written in capital while species are writen in small latter.
Genes and proteins are to be written according to conventions. Additionally genes are written in italic.

Literature
Reference literature (up to 20 references) are quoted on separate page and numerated according to quotation in text. Quote is numerated after period and without space. References are cited according to Vancouver declaration with shortening of titles according to International Periodical Title World Abbreviations which is used in Indeks Medicus. Wishfully allude to sources not older than 5 years.

Attachments
Any illustrations are turned in in original format or are digitalized in on of typical forms (TIFF, JPEG, or at least in PDF resolution 300 dpi). Charts are to be printed to Word with possible template in PPT pr Excel etc. Tables should be prepared in text form with usage of tabulators with additional explanation of how a table should look like. All illustrations are to be denoted with a number that links them to text. Description of each attachment is to be put on a separate paper and concise so that the illustration whould be understandable without reading a full text. Text should contain up to 5 illustrations (images, charts and tables) or more if that is the nature of the article.

Journal Form
Gyrus journals are composed out of three parts: scholar part, regular columns and appendix.
Scholar part is subdivided into 5 additional fragments: Theme of the Issue, Psychiatry/Psychology, Neurosurgery, Neuroscience and Neurology:

THEME OF THE ISSUE
This section is edited by the editor in chief. At the beginning of the year he releases all the themes for the upcoming journals in the year or semester. This section should have 4 to 5 articles per issue.

PSYCHIATRY/PSYCHOLOGY
This section is edited by member of editorial board. Topics in this field can be proposed, however it is desirable for authors to come up with their own ideas. Advantage will have works from fields of: social, biological and forensic psychiatry, psychotherapy, child and adolescent psychiatry, alcoholism and other addictions, clinic psychology and general psychology. This section should have 4 articles per issue.

NEUROSCIENCE
This section is edited by member of editorial board. Topics in this field can be proposed, however it is desirable for authors to come up with their own ideas. Advantage will have works from fields of: neurobiology and neuroanatomy. Special advantage will have articles that connect newest achievements with their implementation in clinics and articles that connect neuroanatomical and neurobiological problems with newest molecular achievements on gene level. This section should have 3 to 4 articles per issue.

NEUROLOGY
This section is edited by member of editorial board. Topics in this field can be proposed, however it is desirable for authors to come up with their own ideas. Advantage will have works from fields of: cerebrovascular diseases, pain, tumors of nervous system, paroxysmal personality disorders, motion disorders, demyelinating diseases of CNS, vertigo, spinal syndrome, neuromuscular diseases, cognitive disorders and CNS inflammation diseases. This section should have 3 to 4 articles per issue.

NEUROSURGERY
This section is edited by member of editorial board. Topics in this field can be proposed, however it is desirable for authors to come up with their own ideas. Advantage will have works from fields of: general neurosurgery, tumor neurosurgery, spinal surgery and neurosurgery in children age. This section should have 2 to 3 articles per issue.
Regular columns contains: introductory word, editor's choice, issue interview, clinical case, book review, info graphics, announcement of congresses and symposiums, announcement and report of SSNZ activities. This section is edited by the editor in chief. This part of the journal should account for 25% of total length.

Appendix
contains all educational texts and supplements. Content of this part of the journal doesn't necessarily have to be according to the theme of the scholar article. In arrangement with editor in chief, journal redaction and graphic editor will help all authors of educational texts in design and realization of any escorting illustrations and graphics to the text. This part of the journal should account for 15% of total length. Supplements are exception due to the fact that their number of pages is not counted into the length of the whole journal. This enables all authors to write more extensive texts of this nature without restrictions.
How should an article look like?

Title
Title has to clearly state topic of your text. Its intention is to give a reader rough image of issue that you will be presenting in your article. Title may have up to 25 words even though it is recommended to make it as short as possible.

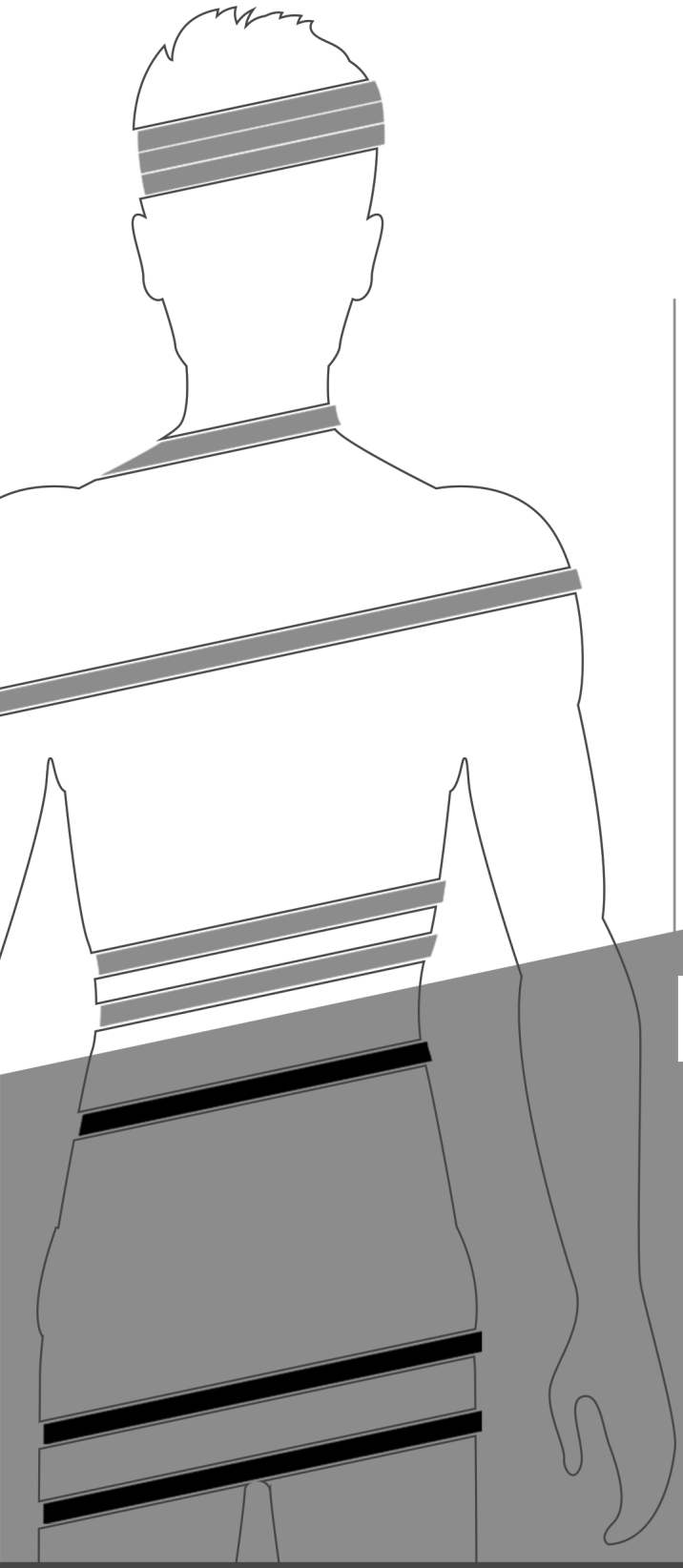
Authors
Beneath the title authors are listed in the alphabetical order. Right below the names of the authors institutions from which they are coming should be listed.

Example:
Ivan Horvat1, Zdenka Matić1, Marko Župić2
1Medicinski fakultet Sveučilišta u Zagrebu,
2Medicinski fakultet Sveučilišta J.J. Strossmayera u Osijeku

Abstract
Abstract is found between the title and the beginning of your text. Abstract shortly presents main arguments of the text. Most of the readers firstly read the abstract and based on that decide whether they will read the whole text. Thus abstract should be concise without long sentences and with as little numerical information and abbreviations as possible. Its length is 120 to 150 words. Abstract should be submitted in both Croatian and English. The two have to be identical with the same content (Ex.: Translate from English to Croatian or vice versa)

Key Words
With each text authors are obliged to send 5 to 7 key words. These words must be written in Croatian and English and need to be alphabetically organized. They must be standardized according to MeSH online base of medical appellation.

Text
From mentioned guidelines clear instructions have been given on how to write the text. Common mistakes have been emphasized. For further information reread chapter "Article Form".



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Hormones & Behaviour

University of Zagreb
School of Medicine

cross.mef.hr

COMMITTEES

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UNIVERSITY OF ZAGREB,
STUDENT COUNCIL AT UNIVERSITY OF ZAGREB, SCHOOL OF MEDICINE

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Welcome Message From the President of CROSS 12

Dear Friends and Colleagues,

as a president of Organization committee, I want you all a warm welcome on 12th Croatian Student Summit – CROSS, taking place in Zagreb, from 30th of March – 2nd of April 2016.

Croatian Student Summit has developed into most important student congress of biomedical science on the University of Zagreb. The growing number of participants is the evidence of recognition of Cross as important factor in student science work.

It is of great significance for biomedical students, young doctors and scientists to have a place to present the results of their research and professional work, just as it is relevant to learn about topics in medicine, from most renowned scientists and professors.

As the president of Organization committee I am very pleased that we have given you that possibility, with this year's topic of Cross, Hormones and behavior, here in the University of Zagreb. I hope you find the congress, including the keynote speakers, the workshop sessions and other program events educational and interesting. My thanks go out to all members of Organization committee, Science committee, all lecture professors who have helped to make this year's congress a success. I would like to extend a special thanks to the dean of School of Medicine in Zagreb, Marijan Klarica, PhD, PE and to whole School of Medicine, the same as Student Council University of Zagreb for the great support, and last but not the least, great thanks to Gyrus, journal which would publish the abstract book as a supplement.

Cross is not only an opportunity to acquire new knowledge but also opportunity to meet colleagues and start a new lifetime friendships.

Wish us all a very successful congress.

Sandro Gašpar
President of CROSS 12

Welcome Message From the President of Student Council

Dear Participants,
As a president of Student council, University of Zagreb, School of medicine, it is a great privilage to welcome you to our 12th CROatian Student Summit in Zagreb.

I am very pleased to say that CROSS has already become a traditional event, widely known in academic community, which provides young students and scientists a perfect opportunity to gain new skills and experiences necessary for their future careers. When we first started with this project in 2004, the main idea was to give students a great chance to present their scientific work and broaden their knowledge in the field of biomedicine. Also, we are very proud that, throughout these 12 years, CROSS gained international recognition with participants from all over the Europe.

I want to take this opportunity and thank the Dean of School of Medicine, University of Zagreb, Marijan Klarica, PhD, PE and Student council, University of Zagreb for their generous support. Without them, our lecture professors and, of course, members of Organization and Scientific committee, this great story wouldn't be possible. At the end, I would like to emphasize one thing. Although the main focus should be on gaining useful knowledge for your future professional challenges, don't forget to have fun. Zagreb is known as the city of young, so, between the scientific activities, you should use every possible chance to explore various cultural events and exciting nightlife of this beautiful city.

Thank you and best regards,

Filip Njavro
President of Student council, University of Zagreb, School of Medicine

Editor's Letter

Dear Friends and Participants,
it is my great honout to welcome you to this international student congress, to the 12th Croatian Student Summit - CROSS 12. The ever-growing number of participants is a testament how widely recognizes the quality and importance of CROSS12 is.

As the Editor-in-Chief of Gyrus, I am very pleased that we have given you the possibility to publish the abstract book as a supplement to our Journal. Tha fact that you are taking the first steps of your scientific careers here in Zagreb and in our Journal fills me with pride.

CROSS is not only an opportunity to acquire new knowledge and experience but also an opportunity to meet colleagues and start new frendships. I wish all of you a productive congress, lifelong memories and, of course, prosperous profesional careers!

Filip Đerke,
Editor-in-Chief

Scientific Programme Outline

WENSDAY, 30 MARCH	THURSDAY, 31 MARCH	FRIDAY, 1 APRIL	SATURDAY, 2 APRIL
			10:00 – 11:30 WORKSHOP C
	12:00 – 13:00 POSTER SESSION 1	12:00 – 13:00 POSTER SESSION 2	11:30 – 13:00 WORKSHOP D
14:00 – 17:00 REGISTRATION	13:00 - 14:00 LUNCH BREAK	13:00 - 14:00 LUNCH BREAK	13:00 – 14:30 WORKSHOP E
			13:00 – 14:30 POSTER SESSION 3
17:00 – 17:15 OPENING CEREMONY	14:00 – 15:30 PLENARY	14:00 – 15:30 PLENARY	14:30 – 14:45 CLOSING
17:15 – 18:00 PLENARY: Special lecture and plenary Session	15:30 – 17:00 WORKSHOP A	15:30 – 17:00 WORKSHOP B	
18:00 NETWORKING RECEPTION		22:00 - … PARTY	

General Information

VENUE

University of Zagreb, School of Medicine
Šalata 3, 10 000 Zagreb
Republic of Croatia

BADGES

All participants are required to wear their badges throughout the congress.

GUEST ATTENDANCE POLICY

All event activities (including meal functions and workshops) are exclusively reserved for registered attendees. Non-registered guests 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 follow:
Wensday (30 March) 14:00 - 17:00
Thursday (31 March) 12:00 - 12:30

SOCIAL MEDIA

Joun our Online Community
- Join us on Facebook

When at the congress, don't forget to tweet using the **#CROSS12** hastag.

LIABILITY AND INSURANCE

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

CERTIFICATE OF ATTENDANCE

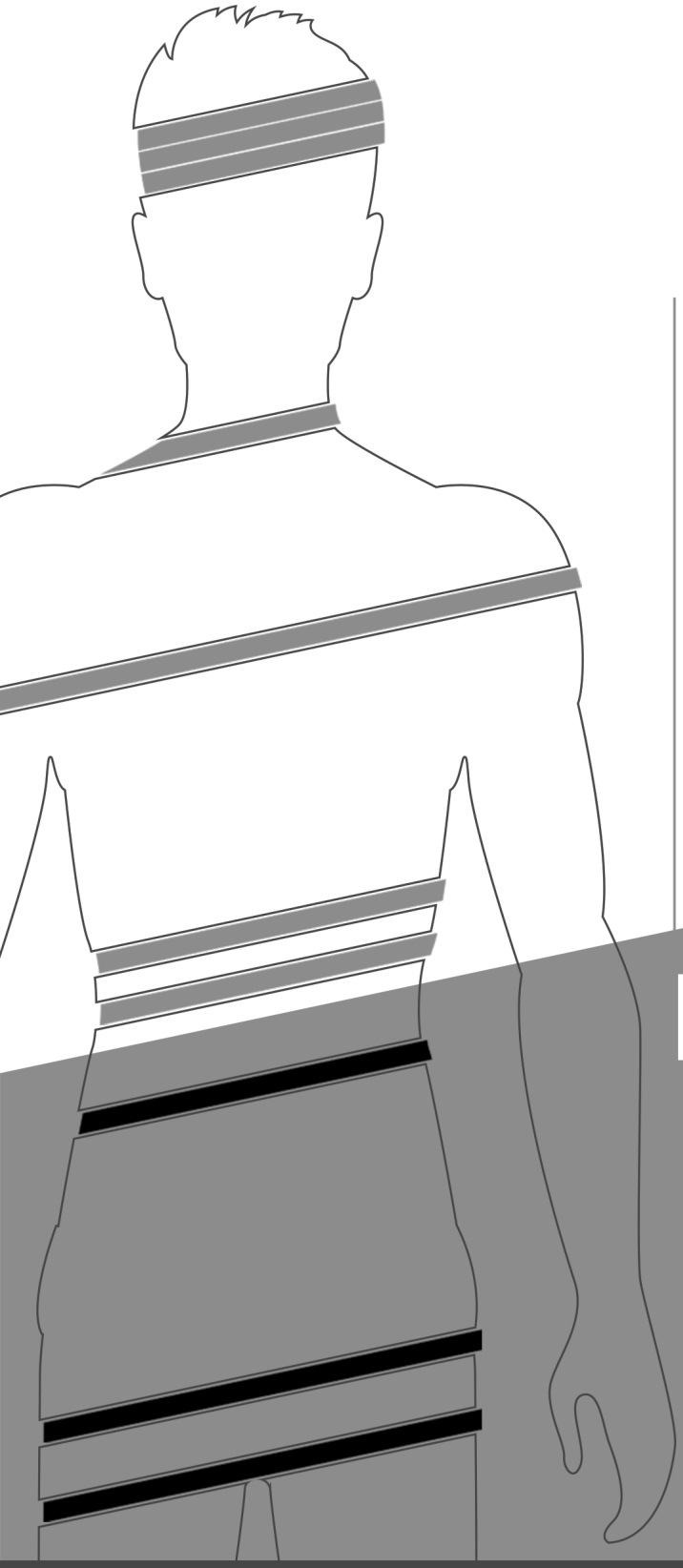
Certificate of attendance will be distributed the last day of CROSS 12 (Saturday, 2 April).

ePOSTER ORAL PRESENTATIONS

ePoster Sessions, with ePosters specifically chosen by the Scientific Committee will be discussed during the Poster Sessios.

ePoster presentations will take place at the ePoster stations in the Exhibition Area.

All ePosters will appear on plasma stations in the Poster Area and are available for viewing at all times.



Scientific Programme

Hormones & Behaviour

University of Zagreb
School of Medicine

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WENSDAY, 30 MARCH

14:00 – 17:00

School of Medicine, Šalata 3 (In front of Čačković Hall)
REGISTRATION

17:00 – 17:15

Čačković Hall
OPENING CEREMONY
Welcome message from the Dean
Welcome message from the President of CROSS 12

Musical Performance by **Lege Artis**

17:15 – 18:00

Čačković Hall
PLENARY: Special lecture and plenary Session

Božidar Perić, MD
PTSD and Hormonal Background

18:00

School of Medicine, Šalata 3 (In front of Čačković Hall)
NETWORKING RECEPTION

THURSDAY, 31 MARCH

12:00 – 13:00

School of Medicine, Šalata 3 (In front of Čačković Hall)
E-POSTER SESSION 1

eP: 1,2,3,6,11,12,13,14,24,25,26,27,30,31,32

13:00 - 14:00

School of Medicine, Šalata 3
LUNCH BREAK

14:00 – 15:30

Čačković Hall
PLENARY:

EVOLUTION & BEHAVIOR
Meri Tadinac, PhD
Zdravko Petanjek MD, PhD

15:30 – 17:00

Croatian Institute for Brain Research, Šalata 12
WORKSHOP A

W2: Spirometry - Clinical Application*
W9: Basic Surgical Sututing Workshop
W6: Clinical Examination in Otrhopedics

** Workshop will be held in the period 15:00 to 16:30 at the Clinical Centre for Pulmonary Diseases at University Hospital Centre Zagreb*

FRIDAY, 1 APRIL

12:00 – 13:00

School of Medicine, Šalata 3 (In front of Čačković Hall)

E-POSTER SESSION 2

eP: 4,5,7,8,9,10,15,16,17,18,19,20,21,22,23,28,29,33,34,35,36,37,38

13:00 - 14:00

School of Medicine, Šalata 3

LUNCH BREAK

14:00 – 15:30

Čačković Hall

PLENARY:

NEUROSCIENCE & ART

Marijana Braš MD, PhD

Raphael Bene MD

15:30 – 17:00

Croatian Institute for Brain Research, Šalata 12

WORKSHOP B

W4: ECG Workshop
W7: Abdominal Pain In Children
W10: How to Become the Master of the Disaster
W1: Basic Principles Of Wound Management

SATURDAY, 2 APRIL

10:00 – 11:30

Croatian Institute for Brain Research, Šalata 12

WORKSHOP C

W3: Emergency Medicine Workshop
W5: Ultrasound workshop

11:30 – 13:00

Croatian Institute for Brain Research, Šalata 12

WORKSHOP D

W8: Differential Blood Count In Children

13:00 – 14:30

Croatian Institute for Brain Research, Šalata 12

WORKSHOP E

W11: iTOP - individualno trenirana oralna profilaksa

13:00 – 14:30

School of Medicine, Šalata 3

POSTER SESSION 3 - Case reports

14:30 – 14:45

Čačković Hall

CLOSING

ePOSTER PRESENTATIONS

eP1: THE INFLUENCE OF OLIGOESTERS ON HORMONAL METABOLISM
A.I. Bezrodnaya, V.I. Jukov, N.G. Shcherban

eP2: BIOPSY-PROVEN PARATHYROIDECTOMY AND ITS CLINICAL PARAMETERS IN UHC RIJEKA PATIENTS WITH SECONDARY HYPERPARATHYROIDISM
Andrej Belančić

eP3: IS THE HEALTHCARE QUALITY OUT OF YOUNG DOCTORS SCOPE?
Antonia Kustura; Lea Lukša

eP4: BPC 157 IMPACT ON SUPERIOR MESENTERIC ARTERY AND VEIN LIGATION IN RATS
Borna Vrdoljak, Dominik Malekinušić, Marko Antunović

eP5: THE EFFECT OF BPC 157 ON ISCHEMIC/REPERFUSION INJURIES IN RAT BRAIN
Borna Vrdoljak, Dominik Malekinušić, Matija Rusan

eP6: INVOLUNTARY HOSPITALIZATION IN THE EMERGENCY DEPARTMENT
Cita Zupanc, Marko Zelinka

eP7: 70% LIVER RESECTION IN RATS. PENTADECAPEPTIDE BPC 157, L-ARGININE, L-NAME
Dominik Malekinušić, Vedrana Živković, Dora Žaler

eP8: BENEFICIAL EFFECT OF BPC 157 AFTER LIGATION OF SUPERIOR MESENTERIC ARTERY IN RATS
Dominik Malekinušić, Borna Vrdoljak, Marko Antunović

eP9: ESOPHAGOGASTRIC ANASTOMOSIS IN RATS. IMPROVED HEALING BY BPC 157 AND L-ARGININE, AGGRAVATION BY L-NAME
Dominik Malekinušić, Marko Antunović, Borna Vrdoljak

eP10: CYCLOPHOSPHAMIDE-INDUCED HEMORRHAGIC CYSTITIS AS A PARTICULAR NO-SYSTEM DISTURBANCE, STABLE GASTRIC
Dora Žaler, Vedrana Živković, Marina Madunić

eP11: EPIDEMIOLOGY OF ROAD TRAFFIC MORTALITY TRENDS IN CROATIA
Dora Katalenac, Marcela Marčec, Nataša Antoljak MD, PhD,

eP12: HORMONES IN VARIOUS SPECIES - A COMPARISON
Emina Horvat Velić

eP13: LONG-TERM THERAPY WITH THROMBOPOIETIN RECEPTOR AGONIST IN A PATIENT WITH CHRONIC IMMUNE THROMBOCYTOPENIA
Ena Ranković, MD, Dražen Pulanić, MD, PhD

eP14: SEMINARIA PATHOPHYSIOLOGICA DEMONSTRATORUM: ETIOPATHOGENESIS OF NEUROGENIC PULMONARY EDEMA
Marcela Marčec

eP15: ACETIC ACID DESTRUCTIVE POTENTIAL FOR GASTRIC BLOOD VESSELS AND CONSEQUENT ULCEROGENIC CAPABILITY IN
Mariam Samara, Marina Madunić, Matija Rusan

eP16: BPC 157 EFFECT ON RECTOVAGINAL FISTULA IN RATS
Mariam Samara, Marina Madunić, Matija Rusan

eP17: RAT RECTOVAGINAL FISTULAS ARE AUGMENTED AFTER EITHER L-NAME ADMINISTRATION
Mariam Samara, Marina Madunić, Rosana Rađan

eP18: CYCLOPHOSPHAMIDE INDUCED STOMACH LESIONS IN RATS. AGGRAVATION BY L-NAME, COUNTERACTION BY STABLE GAS
Marina Madunić, Rosana Rađan, Mariam Samara

eP19: CYSTEAMINE DUODENAL ULCEROGENIC POTENTIAL IS AUGMENTED WITH STOMACH
Marina Madunić, Mariam Samara, Vedrana Živković

eP20: PENTADECAPEPTIDE BPC 157 COUNTERACTS CELECOXIB INDUCED LESIONS ON GASTRIC MUCOSA IN RATS
Marina Madunić, Mariam Samara, Rosana Rađan

eP21: BPC 157: THE COUNTERACTION OF SUCCINYLCHOLINE
Marko Antunović, Borna Vrdoljak, Rosana Rađan

eP22: INFLUENCE OF BPC 157 AND ESTROGEN ON LIPID AND CARBOHYDRATE METABOLISM IN OVARIECTOMIZED RATS
Marko Antunović, Borna Vrdoljak, Rosana Rađan

eP23: PENTADECAPEPTIDE BPC 157 EFFECT ON BLOOD VESSELS OF PERFORATED CAECUM IN RATS
Marko Antunović, Borna Vrdoljak, Dominik Malekinušić

eP24: ASSESSMENT OF BONE LOSS IN SUBACUTE PHASE OF ANTIGEN-INDUCED ARTHRITIS
Martina Fadljević

eP25: THE FREQUENCY OF ADRENAL MASS IN ADULT POPULATION OF SINGLE CENTRE
Massimo Bembić, Barbara Borovac, Matija Pajić, Gordana Đorđević MD, PhD

eP26: COMPARATIVE ANATOMICAL AND HYSTOLOGICAL STUDY OF THE CORPUS STRIATUM IN HUMANS AND RHESUS MONKEYS
Matija Fenrich, Radivoje Radić

eP27: EFFECTS OF THE MATERNAL GESTATIONAL AND LACTATIONAL DIET REGIME ON THE OFFSPRING'S ADIPOSE TISSUE MORPHOLOGY
Matija Fenrich, Darija Šnajder, Željka Perić-Kačarević, Nikola Bijelić, Radivoje Radić

eP28: THE BENEFICIAL EFFECT OF BPC 157 ON PARIETAL PERITONEUM INJURY
Matija Rusan

eP29: THE EFFECT OF BPC 157 ON TRANSPLANTATION OF CADAVERIC TENDONS IN RATS
Matija Rusan, Mariam Samara, Marko Antunović

eP30: IMPACT OF ESTABLISHMENT OF NATIONAL TRANSPLANTATION NETWORK ON THE NUMBER OF ORGAN DONORS AND TRANSP
Nastja Svetina, Zvonka Zupanič Slavec

eP31: SPONTANEOUS MISCARRIAGES (SM) AND ASSOCIATION OF PAI-1 GENE POLYMORPHISMS IN WOMEN
Petra Bubalo, Iva Buterin

eP32: ATTENUATION OF THE DELETERIOUS COURSE AND GASTRIC LESIONS AFTER BILATERAL NEPHRECTOMY IN RATS, NO-S
Rosana Rađan

eP33: BPC 157 AFFECTS EATING BEHAVIOUR AND METABOLIC PARAMETERS AND LESION IN VARIOUS ORGANS IN LONG-TERM
Rosana Rađan, Dora Žaler, Matija Rusan

eP34: THE EFFECT OF PENTADECAPEPTIDE BPC 157 ON EPISCLERAL VEIN CAUTERIZATION MODEL IN RATS
Rosana Rađan, Vedrana Živković, Dora Žaler

eP35: CELECOXIB INDUCED GASTROINTESTINAL, LIVER AND BRAIN LESIONS IN RATS,COUNTERACTION BY STABLE GASTRIC
Vedrana Živković, Dora Žaler, Rosana Rađan

eP36: STABLE GASTRIC PENTADECAPEPTIDE BPC 157 AS A LIKELY ANTIDOTE FOR THE BUPIVACAINE CARDIOTOXICITY, A R
Vedrana Živković, Dora Žaler, Matija Rusan

eP37: LIGATION OF SUPERIOR MESENTERIC VEIN IN RAT
Borna Vrdoljak Dominik Malekinušić, Marko Antunović

CASE REPORTS

C1: ACQUIRED HEMOPHILIA A – A RARE ACQUIRED BLEEDING DISEASE: A CASE REPORT
Antonia Kustura; Dražen Pulanić, MD, PhD

c2: TACHYCARDIA-INDUCED CARDIOMYOPATHY: CASE REPORT
Andreja Rehberger Likozar, Miran Šebeštjen

C3: CARDIAC AMYLOIDOSIS: CASE REPORT
Andreja Rehberger Likozar, Urška Dolores Breskvar Kač

C4: LONG QT SYNDROME
Andreja Rehberger Likozar, Urška Dolores Breskvar Kač

C5: DIARRHEA IN A BOY WITH MUCOCUTANEOUS CANDIDIASIS AND ONYCHODYSTROPHY: COINCIDENCE OR UNDERLYING CAUSE - POLYGLANDULAR AUTOIMMUNE SYNDROMETYJE I
Lana Ivković MD, Tena Trbojević MD, Filip Njavro

C6: BROAD QRS TACHYCARDIA IN PATIENT WITH HYPOTHYROIDISM: CASE REPORT
Miha Jager, Urška Dolores Breskvar Kač

C7: MYECTOMY IN PATIENT WITH NYHA III HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY
Miha Jager, Urška Dolores Breskvar Kač

C8: WORSENING OF CORONARY ARTERY DISEASE AFTER THREE MONTHS: CASE REPORT
Miha Jager, Urška Dolores Breskvar Kač

C9: CASE REPORT: BETTER GLYCEMIC CONTROL AFTER LIRAGLUTIDE THERAPY IN DIABETES MELLITUS TYPE II
Miler Valentina, Matus Helena, Šimić Ivana, Omanović Tea, Bilić Ćurčić Ines

C10: AUTOSOMAL ALPORT SYNDROME IN TWO PEDIATRIC PATIENTS BORN WITH SIMILAR CONGENITAL ANOMALIES OF THE URINARY TRACT - COINCIDENCE OR GENETIC RELATIONSHIP YET UNKNOWN?
Sandro Ibrulj, Zoltan Narancsik, Damjan Glavač, Anamarija Meglič

C11: OCCASIONALLY MORNING VOMITING IN PRESCHOOL CHILD: BRAIN TUMOR OR EMOTIONAL REASONS- THE IMPORTANCE OF GOOD CLINICAL JUDGMENT AND MULTIDISCIPLINARY TREATMENT
Tena Trbojević MD, Lana Ivković MD, Filip Njavro

C12: OSTEOID OSTEOMA AS A CAUSE OF REFERRED KNEE PAIN: A CASE REPORT.
Urška Berden, Janez Brecelj

C13: CT ANGIOGRAPHIC EVALUATION OF AORTIC DISSECTION – DON'T MISS THE CORONARIES
Urška Berden, Rok Zbačnik

C14: A NEONATE WITH WILLIAMS SYNDROME SUFFERING CARDIAC DEATH DURING INDUCTION OF GENERAL ANESTHESIA: A CASE REPORT
Zoltan Narancsik, Armin Alibegović, Marija Volk

C15: BEDSIDE LUNG ULTRASOUND – A GOOD DIAGNOSTIC TOOL FOR PNEUMONIA IN A SEPTIC PATIENT: A CASE REPORT
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W4: ECG workshop
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Authors: Petra Radić, Marija Ćačić, Ivana Bureš, Maša Alfirević

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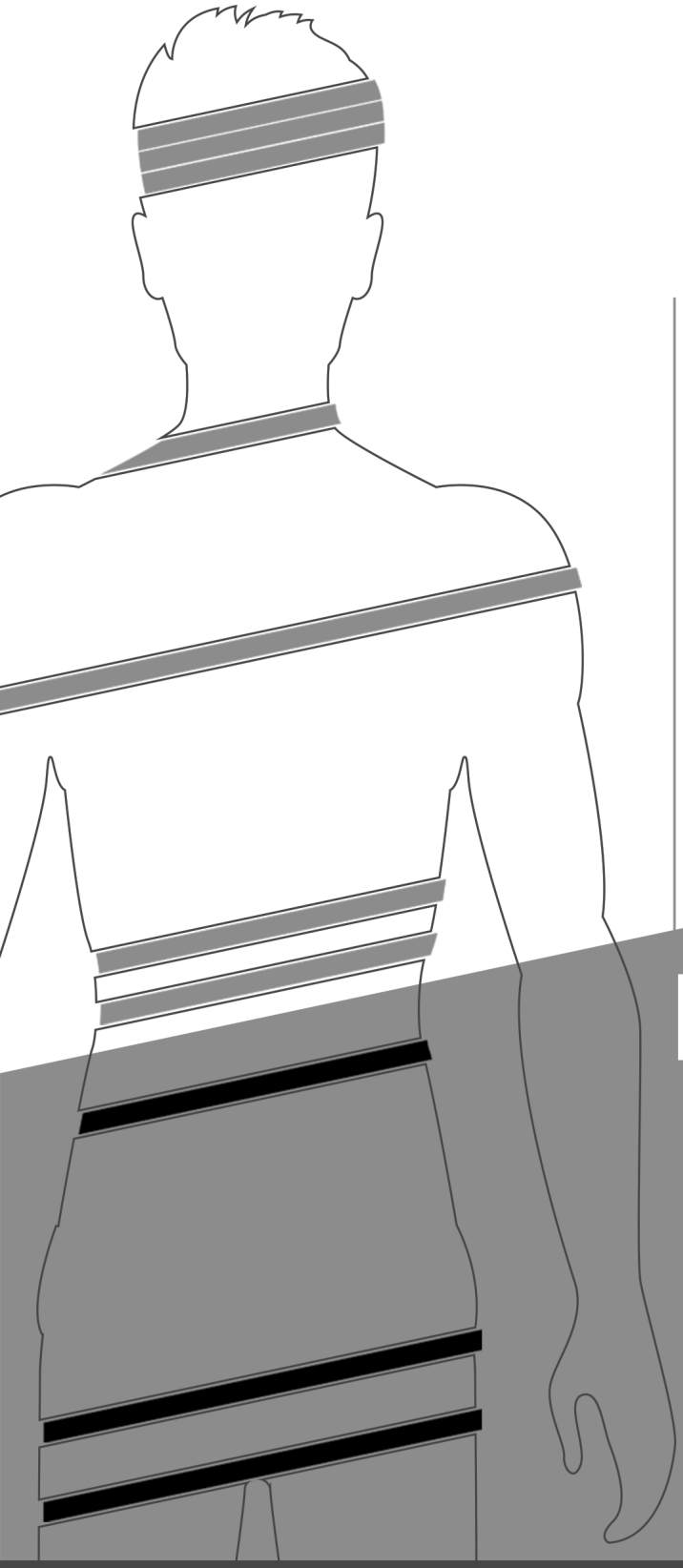

Abstracts

Hormones & Behaviour

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eP1: The influence of oligoesters on hormonal metabolism

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INTRODUCTION: One of the unique features of living organisms is their ability to adapt to changing environmental conditions of residence and maintain homeostasis sustainability through the mechanisms of self-regulation in the implementation of which the leading role played by hormones. Hormones induce quick or slow response, combined with the de novo synthesis of enzymes. Therefore, any violation of the synthesis of hormones or decay caused by various factors, including diseases of the endocrine glands, leading to changes in the normal synthesis of enzymes and thus to metabolism.
OBJECTIVES: The paper used Oligoesters two new brands that have a commodity called "Laproly" with regulated physicochemical properties: Oligoesters L-3603-2-12 (molecular weight 3600) and L-10002-2-80 (molecular weigh 10000).
AIMS: The aim was to study the metabolism of hormones in rats exposed to prolonged exposure Oligoesters in terms of subacute toxicological experiment.
METHODS: Average lethal dose (DL50) were established in rats at 3.34 and 38.4 g / kg of the animal, according to L-3603-2-12 and L-10002-2-80. The animals using a metal probe daily intragastric administered aqueous solutions of compounds at a rate of 1/100 DL50, which was 33.0 mg and 384.0 mg / kg in rats,
RESULTS: Results of the research content of sex hormones and gonadotropins showed a decrease in serum follicle stimulating hormone at 45.85% and 38.46%, prolactin to 23.93% and 21.36%, lyuteotropin to 66.90% and 60.97%, estradiol to 49.95% and 44.84%, testosterone for 55.18% and 47.13%, respectively, under the influence of L-3603-2-12 and L-10002-2-80. The concentration of progesterone is not changed.
CONCLUSION: These studies suggest that L-3603-2-12 xenobiotics and L-10002-2-80 at a dose 1/100 DL50 significantly inhibit reproductive function in both males and females.

C1: Acquired Hemophilia A – a rare acquired bleeding disease: a case report

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INTRODUCTION: Acquired hemophilia A (AHA) is a rare acquired bleeding disease caused by autoantibodies directed against coagulation factor VIII (FVIII). Patients with AHA present with spontaneous hemorrhages that can be life-threatening. Disease is sometimes unrecognized but requires prompt diagnosis and treatment.
OBJECTIVES: The objective of this work is to emphasize importance of AHA as a differential diagnosis in a patient with acquired bleeding diathesis.
AIMS: The aim is to show a clinical presentation, diagnosis, treatment, and outcome of a patient with AHA.
METHODS: We presented a case of a 75-year-old woman admitted to the Division of Hematology, Department of Internal Medicine, University Hospital Center Zagreb, Zagreb, Croatia, due to severe acquired bleeding diathesis, and AHA was diagnosed.
RESULTS: The 75-year-old woman with no previous bleeding history was admitted to hospital due to severe spontaneous cutaneous hematomas. Her previous medical history included diabetes mellitus, hypertension, chronic kidney disease and recurrence of TIA (received ASA as therapy). On admission, her significant laboratory findings were: hemoglobin 69 (normal range 119-157) g/L, normal platelet counts, normal PT, prolonged APTT 46.8 (normal range 24-33) s, low FVIII 0.05 (normal range 0.5-1.49) kIU/L, detected inhibitors against FVIII 3.0 BU kJ/L. Due to the altered mental status MSCT of the brain was performed, but there were no signs of intracerebral bleeding. She received immunosuppressive treatment (cyclophosphamide (2 mg/kg/day) and methylprednisolone (1 mg/kg/day)), together with other supportive and symptomatic therapy. Because of her cerebrovascular disease and increased thrombotic risk, she was not receiving bypassing-coagulation factor agents. She responded soon to the immunosuppressive treatment with normalization of coagulation parameters (APTT 25.9 s, FVIII 1.3 kIU/L, negative inhibitors against FVIII), with significant regression of hematomas. Two weeks after discharge she was admitted to surgery because of the fracture of femoral neck after she dropped-down at home. There was a complete resolution of previous hematomas, and laboratory results showed persistence of complete remission of AHA (APTT 22.6 s, FVIII 2.6 kIU/L). She received perioperative LMWH thromboprophylaxis with no bleeding or thrombotic complications.
CONCLUSION: Prompt diagnosis and treatment of AHA can be successful in this otherwise potentially life-treating acquired bleeding disease.

eP2: Biopsy-Proven Parathyroidectomy And Its Clinical Parameters In Uhc Rijeka Patients With Secondary Hyperparathyroidism

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INTRODUCTION: Hypocalcemia and hyperphosphatemia in chronic kidney disease (CKD) lead to abnormal parathyroid hormone (PTH) excretion and hyperplasia of parathyroid glands. This condition can be treated by pharmacological agents,but if it does not show satisfying effect parathyroidectomy is indicated.
OBJECTIVES: Histopatological data and clinical parameters in CKD patients with secondary hyperparathyroidisim (SHP) who had parathyroidectomy are presented in this trial.
AIMS: To analyse histopatological and clinical data of CKD patients with SHP who had parathyroidectomy. Also to present the sucess of parathyroidectomy in regulation of PTH and other laboratory parameters and to compare the size of parathyroid glands.
METHODS: Our center provided data of all biopsies of native parathyroid glands performed during the period of 2003.-2015. This data was compared with laboratory parameters before parathyroidectomy and one year after the operative procedure. Parathyroidectomy was performed in 23 patients. 18 patients were analysed in this trial (10 female and 8 male), because they had complete data.
RESULTS: The mean age was 55.5±11.6 years and the mean duration of hemodialysis was 87±71.6 months. Clinical indications for parathyroidectomy were: bone pain (94.4%), fracture (11.1%), metastatic calcification (5.6%) and pruritus (11.1%). The mean laboratory values before the operation were: calcium 2.5±0.3 mmol/L, phosphates 1.8±0.5 mmol/L, ALP 228.5±162.1 U/L and PTH 173.2±68.8 pmol/L. 14 patients had subtotal and 4 patients total paratyroidectomy ; there was also one reoperation. Total number of glands was 59 (9 up-right, 12 up-left, 17 down-right, 15 down-left and 6 with unusual position). 55 glands had nodular hyperplasia and 4 had diffuse hyperplasia. The mean dimension of upper glands was 1.75±0.57 cm ; mean dimension of lower glands was 1.90±1.05 cm. There was statistically significant correlation between PTH value and dimensions of upper glands (p=0.04). One year after parathyroidectomy the mean value of laboratory parameters was: calcium 2.1±0.4 mmol/L (p=0.0006), phosphates 1.2±0.4 mmol/L (p=0.0007), ALP 113.6±80.2 U/L (p=0.002) and PTH 17.2±13.6 pmol/L (p=<0.0001).
CONCLUSION: This retrospective study has proven that parathyroidectomy is very successful treatment in patients with SHP. Study also confirmed that lower glands are bigger than upper ones and that there is positive correlation between the size of upper parathyroid glands and PTH value.

eP3: Is the healthcare quality out of young doctors scope?

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INTRODUCTION: Donabedian's model for evaluation of healthcare quality is the most important one and includes three categories which can be seen as technical care, patient-doctor relationship and comfortable surroundings. Nowadays healthcare quality is mostly recognized as topic inside the management of care: quality control, quality improvement or quality assurance. Can there be a system of quality without doctors who put their heart into it?
OBJECTIVES: We wanted to determine if Donabedian's concept is still present in documents regarding quality and if students have opportunity to experience basic concepts of quality.
AIMS: Are we still aware of the basic idea and purpose of healthcare quality? Why students and young doctors do not recognize quality as a relevant issue?
METHODS: We used literature review and word cloud tools. In the literature review, we focused on researches about healthcare quality and student's expectations and perceptions of current conditions. Selected documents and articles concerning actual concepts were analyzed by word cloud tools.
RESULTS: Word cloud analysis showed that patients and patient care is not in primary focus. Medical school's curriculum limits student's opportunities for recognizing quality. Young doctors are confronted with the same issues. Current quality management does not recognize Donabedian's model. While technical care has been raised to satisfactory levels, other parts are inadequate. The reality is "doctor-centered", while it should be "patient-centered". Researches conducted at different universities indicate the existences of gap in SERVQUAL dimensions. It shows that student's expectations are not met and there is a necessity for improvement. The highest negative gap regarding teachers was in empathy dimension. These findings point out necessity of overall improvement of educational services that can be taken into consideration during possible curriculum planning.
CONCLUSION: From the beginning of medical career not enough attention is paid to quality and how can it be achieved. Young doctors are not cooperative enough regarding implementation of theoretically learned ideas of quality. As a result the whole system is malfunctioned. Medical students should be more oriented towards holistic approach to quality. By changing their mindset to "patient-oriented", the complete system can be improved. Doctors should be brought to consciousness in terms of existing problems.

eP4: BPC 157 IMPACT ON SUPERIOR MESENTERIC ARTERY AND VEIN LIGATION IN RATS

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INTRODUCTION: Recently, stable gastric pentadecapeptide BPC 157 that was proposed as therapy in ulcerative colitis given after portal triad clamping in rats, acutely counteracts the huge increase in portal pressure and attenuates intestinal ischemia/reperfusion injury.
OBJECTIVES: We studied the BPC 157 effect after rat superior mesenteric artery and vein (SMAV) ligation on vascular architecture and final lesions development.
AIMS: To preserve the area of drainage of superior mesenteric vein (small intestine and caecum) from local ishemia. METHODS: Using deeply anaesthetized rats, we directly visualized (Veho Discovery VMS-004 Deluxe USB microscope camera with its own light source) the blood vessels and depicted the vascular architecture affected by bleeding (progressively scored 0-5), vein congestion (progressively scored 0-5), arteries repelition (progressively scored 0-5) and ramification (progressively scored 0-5) throughout 30 minutes in small intestine, caecum and ascending colon before and after SMAV ligation throughout 30 minutes and determined the mucosal lesions severity (progressively scored 0-3) immediately after sacrifice. Testicular artery and vein (TAV), retroperitoneal blood vessels (RBV) presentation was scored (0-3) for collateral blood flow upon ligation. Medication (/kg) (BPC 157 10μg) was given as a 1ml bath to ligation area immediately after ligation while controls simultaneously received an equivolume of saline. In addition, angiography was carried out at 5 minutes after ligation.
RESULTS: Controls presented immediately (Min/Med/Max): small intestine (lesions 3/3/3): (5min-15min-30min) progressive bleeding (3/3/3-4/4/4-5/5/5), vein congestion (3/3/3-4/4/4-5/5/5), arteries deteriorating repelition (3/3/3-2/2/2-1/1/1) and poor ramification (2/2/2-2/2/2-2/2/2); caecum (lesions 3/3/3): bleeding (3/3/3-3/3/3-3/3/3), vein congestion (4/4/4-5/5/5-5/5/5), deteriorating repelition of arteries (3/3/3-2/2/2-1/1/2) and ramification of arteries (4/4/4-3/3/3-2/2/3); ascending colon (lesions 3/3/3): progressing bleeding (1/1/1-1/2/2-2/3/3), vein congestion (3/3/3-4/4/4-4/4/5), arteries poor repelition (1/1/1-1/1/1-1/1/1) and ramification (2/2/2-2/2/2-2/2/2). By contrast, BPC 157 presented: small bleeding (1/1/1-1/1/1/-1/1/1), decreased vein congestion (3/3/3-2/3/3-2/2/2), increased arteries repelition (4/4/4-4/4/5-5/5/5) and ramification (4/4/4-4/4/5-5/5/5) in small intestine (lesions 1/1/1) and caecum (lesions 1/1/1); bleeding (1/2/2-1/1/1/-1/1/1), decreased vein congestion (3/3/3-3/3/3-2/2/3), arteries repelition (1/1/1-2/2/2-3/3/3) and ramification (1/1/1-1/2/3-3/3/3) in ascending colon (lesions 1/1/1) (P
CONCLUSION: After SMAV ligation, BPC 157 counteracted deleterious course. Accordingly, TAV and RBV were continuously more expressed in BPC treated group than control group. Angiography demonstrated in BPC 157-rats collateral circulation via TAV and RBV.

c2: TACHYCARDIA-INDUCED CARDIOMYOPATHY: CASE REPORT

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INTRODUCTION: Tachycardia-induced cardiomyopathy or tachycardiomyopathy is secondary systolic dysfunction due to chronic tachycardia, which is fully or partially reversible form of heart failure after normalization of heart rate. The causes can be ventricular or supraventricular arrhythmias and the most common causes are supraventricular arrhythmias.
CASE PRESENTATION: 46-year-old patient was admitted for heart failure diagnostics. In the last two years he felt occasional palpitations without stenocardia, dyspnoea, dizziness or unconsciousness. He was already treated for arterial hypertension, atrial fibrillation and diabetes. On examination cardiac action was arrhythmic, tachycardic with a frequency of 135/min, without murmurs or additional tones. The rest of status showed no abnormalities. ECG showed atrial fibrillation with ventricular response of 111/min. With echocardiography we identified increased volume of all cardiac cavities and moderately impaired function of the left ventricle (LV) with an ejection fraction (EF) of 40%. Heart valves were functionally normal. With cardiac catheterization coronary artery disease was excluded. A successful radiofrequency (RF) catheter ablation was preformed. Upon discharge ECG showed sinus rhythm with a frequency of 49/min. On the following three-month check up patient felt better. ECG showed sinus rhythm with a frequency of 54/min. Echocardiographicaly there was marginally larger LV dimensions and EF of 50-55% with normal diastolic function.
DISCUSSION: Tachycardiomyopathy is a reversible form of dilated cardiomyopathy and heart failure mostly caused by supraventricular tachyarrhythmias. We diagnosed our patient with tachycardiomiopathy, which improved after RF treatment of persistent atrial fibrillation. After RF ablation his heart rate decreased and LV function improved with increase EF from 40% to 50-55%. This diag-

nosis should be suspected in patients with compromised ventricular function and ventricular or supraventricular tachycardia. The accurate diagnosis can only be established with the recovery of ventricular function after the control of tachycardia. The response of ventricular dysfunction to the control of tachycardia is variable, and it is related to myocardial damage caused by long periods of tachycardia and the presence of previous structural heart disease. The peak period of recovery of left ventricular function is the first month after the control of tachycardia, but there is still some improvement in the next 12 months.

C3: Cardiac Amyloidosis: Case Report

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INTRODUCTION: Cardiac amyloidosis ("stiff heart syndrome") is a disorder caused by deposits of an abnormal protein (amyloid) in the heart tissue. Cardiac amyloid deposition can cause heart failure (HF) with preserved ejection fraction (HFpEF). Depositions could be in the myocardial interstitium and intramural coronary vessels are associated with left ventricular (LV) wall thickening, diastolic dysfunction and HFpEF. Correct diagnosis of isolated cardiac amyloidosis clinically is especially challenging as symptoms are often nonspecific as breathlessness or arrhythmia (atrial fibrilation). Recent advances in cardiac magnetic resonance imaging (MRI) have led to increase in detection of late gadolinium enhancement, which is reported to be characteristic of amyloidosis.
CASE PRESENTATION: 84-year-old patient was admitted to the department of cardiology because of syncope. He also had dizziness but denied stenocardia, breathlessness and arrhythmia. He was treated for hypertension and hyperlipidemia. In the last year he was operated for BPH and left parietookcipital intercerebral bleeding. Clinical examination showed no abnormalities except inspiratory cracking over the bases of the lungs. There was an increase in value of troponin I (0.185 mcg/L), which fell to 0.141 mcg/L in the following day. Proteinogram was within the normal range, borrelia antibodies were negative. Echocardiography showed features of restrictive cardiomyopathy with isolated left ventricular hypertrophy without obstruction and severe diastolic dysfunction. There was a normal EF of 57% and a slight reduction in stroke volume. MRI of the heart described hypertrophic myocardium in association with pathologic late amplification for infiltrative cardiomyopathy, likely amyloidosis. Myocardial scintigraphy also showed senile amyloidosis. Pathohistologic results of the skin colouring for the immunoglobulin light chain kappa and lambda were negative. The 24-hour Holter monitoring recorded bifascicular and intermittent left bundle branch block and one episode of non persistent VT. Because of that implantation of DDDR type pacemaker was indicated.
DISCUSSION: In the case of our patient we confirmed myocardial amyloidosis using three different imaging modalities; echocardiography, MRI as well as myocardial scintigraphy. EF was preserved, but diastolic dysfunction was severe. Transthyretin cardiac amyloidosis, formerly known as senile cardiac amyloidosis, is a common cause of HFpEF. Patient was treated symptomatically with pacemaker-DDDR implantation.

C4: Long QT syndrome

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INTRODUCTION: Long QT syndrome (LQTS) is a cardiac disorder characterized by syncope, seizures or sudden death. It can be congenital, idiopathic, or iatrogenic. LQT syndrome is so-named because of the connection observed between the distinctive polymorphic ventricular tachycardia and prolongation of the QT interval of the ECG. Prolonged ventricular repolarization and malignant ventricular tachyarrhythmias often occur in conditions of high adrenergic activity as physical or emotional stress.
CASE PRESENTATION: 28-year-old patient was admitted to the department of cardiology for further diagnosis after successful reanimation of primary cardiac arrest. During a walk he suddenly collapsed. Before that he did not feel stenocardia or dyspnoea. After 5 minutes of resuscitation, with first rhythm being VF and receiving 1 mg of adrenalin, a hemodynamically effective rhythm was established. Before that he was healthy, he did not receive regular treatment. Family history was negative for sudden cardiac death. On admission he was disoriented, with otherwise normal clinical status. ECG showed sinus rhythm without ST segment changes and signs of LV stress. Laboratory showed Troponin I of 0.016 mcg/L, and elevation of CRP (60 mg / L), AST (1.16 mckat/L) and ALT (1.10 mckat/L). Before release the values normalized. Ultrasound and MRI of the heart showed morphologically and functionally normal heart. Using CTA we excluded pulmonary embolism and performed coronarography for coronary disease exclusion. We also excluded myocarditis. A positive adrenaline test showed a prolongation of QT-interval of 125 ms. Additional genetic testing showed heterozygous form of defined nucleotide change in the gene TRPM4 which is connected with Brugada syndrome. Implantation of the ICD was indicated and beta-blockers were later introduced. Also avoidance of drugs with known QTc interval prolongation

should be avoided. On testing, the ICD was functioning properly without any detection of arrhythmias. DISCUSSION: In our patient adrenaline test was a positive and genetic testing proved the presence of long QT syndrome. Genetic testing revealed a mutation in the gene, which is associated with Brugada syndrome and cardiac arrhythmias. Therefore, the implantation of ICD was needed. Further testing for first-degree relatives was indicated and confirmed the presence of genetic strain.

eP5: The effect of BPC 157 on ischemic/reperfusion injuries in rat brain

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INTRODUCTION: Ischemic/reperfusion injuries are elementary pathophysiological findings in stroke.
OBJECTIVES: In this experiment, ischemic/reperfusion injuries are induced using bilateral carotid artery occlusion (BCAO). AIMS: Pentadecapeptide BPC-157, has already been proven to have an effect on vessel integrity, it is a mediator of Robert's cytoprotection and interacts with the NO system.
METHODS: The effect of BPC-157 on ischemic/reperfusion injuries was investigated in male Wistar Albino rats, 250-300g b.w.. After an occlusion of 20 min, the rats were randomly divided into groups. The BPC-157 treated groups received BPC-157 (10μg/kg, 10ng/kg, i.p.) right after surgery, while the control group received saline (1ml, i.p.) immediately after surgery. The L-NAME (5 mg/kg, i.p.) treated rats were administered either only with L-NAME or in combination with L-arginine (100mg/kg, i.p.) or in combination with BPC-157 (10μg/kg, 10ng/kg, i.p.). After a reperfusion period of 24 or 72 hours, the neurological assessment was performed using the Morrison water maze test (MWMT) and beam walk test (BWT).
RESULTS: In the MWMT the control animals had greater memory loss and spatial orientation loss, while the BPC-157 treated group had almost no loss in the MWMT. The control group lost 10.3 seconds, while the BPC-157 treated group gained 1 second in comparison to the training results. In the beam walk test, control group walked worse and scored 1, while the BPC-157 treated group walked better and scored 4. The animals treated with L-NAME lost 16.4 seconds in the MWMT and scored 0 in the BWT. When L-NAME was administrated along with L-arginine, it showed slight improvement, 6.2 in MWMT and scored 2 in BWT, while the combination of L-NAME and BPC-157 abolished all the negative effects of L-NAME and scored 3 in the BWT and lost 3.6 in the MWMT. The pathology findings concurred with the results obtained in the neurological assessment.
CONCLUSION: Pentadecapeptide BPC-157 showed that it counteracts ischemic/reperfusion injuries, saving the rats from memory and orientation loss, as well as maintaining their motor capabilities. Along with that it can successfully counteract the negative effects of NO system inhibition, even moreso than L-arginine, and thereby confirming its close relation to the NO system.

eP6: Involuntary hospitalization in the emergency department

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INTRODUCTION: Involuntary hospitalization is hospitalization against the patient's will. Literature and practice show that sometimes is involuntary hospitalization necessary that we protect patient from being hurt themselves or others. Emergency doctors often face a referral of the patient to the hospital against his will. Due to the lack of knowledge and ethical principles young doctors feel fear repeatedly hospitalized patients that do not want to, even though it is repeatedly a necessary measure.
OBJECTIVES: Our objectiv is to introduce involuntary hospitalization of students and young doctors and thus avoid the fear of that. AIMS: We tried to find the precise legal regulations, which include the rights and duties of the patient and the doctor. METHODS: We reviewed the literature about this topic and in practice made some involuntary hospitalization when it was necessary to.
RESULTS: The legal provisions about this topic are governed by the Official Gazette of RS, no.77/2008 Mental Health Act. It tell us that patient without his consent may be hospitalised and treated in a psychiatric hospital only when he or she has mental illness and endangers their health and life or health and the lives of others, or have caused significant damage. Any involuntary hospitalization must be recorded and referred to a higher authority to decide on the entitlement of

CONCLUSIONS: Every country has legal provisions which define precisely when involuntary hospitalisation is justified and when it is not. Most countries have a uniform that it is a justified when the patient is harmful to themselves or others. With a positive attitude towards the patient we can significantly reduce the number of involuntary hospitalisation.

eP7: 70% LIVER RESECTION IN RATS. PENTADECAPEPTIDE BPC 157, L-ARGININE, L-NAME

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INTRODUCTION: We recently demonstrated that stable gastric pentadecapeptide BPC 157 might beneficially affect rats after partial hepatectomy. The goal was to confirm whether gastric pentadecapeptide improves function and liver regeneration even in rats with NO-system modulation.
OBJECTIVES: After performing 70% liver resection and applying BPC 157, BPC 157 rats more consistently maintained the weight, exhibited better liver regeneration based on better liver mass/body weight.
AIMS: We suggest that after 70% liver resection stable gastric pentadecapeptide BPC 157 improves function and liver regeneration even in rats with NO-system modulation. Namely, BPC 157 rescued otherwise severe liver lesions after overdose of NSAIDs, insulin, CCl4 or chronic alcohol abuse. Likewise, BPC 157 largely interacts with NO-system. METHODS: In male Wistar rats, 70 % liver resection was performed. Stable BPC 157 was applied (10 ug, 10 ng) (/kg) in drinking water (0.16 ug; 0.16 ng/ml/12ml/day). Alternatively, BPC 157 (10 ug, 10 ng) (/kg), NOS-blocker, L-NAME (5mg/kg) and L-arginine (100mg/kg) were given ip once daily, alone and/or combined, till the sacrifice (at day 3, 7, 14, 21,28). Macroscopic observation, weight (animal(g) and liver weight/animal weight ratio), microscopical observation (binuclear hepatocyte number, hepatocyte nuclei diameter, hepatocyte area) and biochemical analysis (AST, ALT, serum bilirubin level) were performed.
RESULTS: After partial heapatectomy, control rats are regularly presented with poor course, L-NAME with worsening, L-arginine with some beneficial effect. By contrast, when compared with controls, BPC 157-rats (as well as when BPC 157 was given with L-NAME and/or L-arginine) more consistently maintained the weight, exhibited better liver regeneration based on better liver mass/body weight (i.e., 14 days: 0.033±0.007(BPC 157+L-NAME) vs. 0.018±0.004(L-NAME) vs 0.025±0.005 (L-arginine), 28 days: 0.051±0.004 (BPC 157+L-NAME) vs. 0.02 ± 0.005 (L-NAME) vs. 0.031±0.003 (L-arginine)) and larger liver volume, unlike constantly increased AST, ALT, bilirubin levels in L-NAME rats; L-arginine rats shown better liver recovery but without potentiating when given together with BPC 157. Microscopically, L-NAME+L-arginine and especially L-NAME rats presented larger areas of liver steatosis focal necrosis and liver fibrosis with less binuclear cells and mitosis unlike BPC 157-rats.
CONCLUSION: BPC 157 abolished the negative L-NAME effect on liver regeneration but did not intensify liver regeneration when given together with L-arginine.

eP8: BENEFICIAL EFFECT OF BPC 157 AFTER LIGATION OF SUPERIOR MESENTERIC ARTERY IN RATS

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INTRODUCTION: Gastric pentadecapeptide BPC 157 was proposed as therapy in ulcerative colitis particularly ishemic lesions. Recently, increased portal pressure and intestinal ischemia/reperfusion injury after portal triad clamping in rats were both counteracted.
OBJECTIVES: Examine the BPC 157 effect after rat superior mesenteric artery (SMA) ligation on vascular architecture and final lesions development.
AIMS: Determine BPC 157 effects on ischemia caused by SMA ligation.
METHODS: In anaesthetized laparatomized rats, using microscope camera (Veho Discovery VMS-004 Deluxe USB) we directly visualized the arteries and veins and the vascular architecture affected by bleeding, vein congestion, arteries repelition and ramification (all progressively scored 0-5) throughout 30 minutes in small intestine, caecum and ascending colon before and after SMA ligation throughout 30 minutes and determined the mucosal lesions severity (progressively scored 0-3) immediately after sacrifice. Testicular artery and vein (TAV), retroperitoneal blood vessels (RBV) presentation was scored (0-3) for collateral flow. Medication (/kg) (BPC 157 10μg/saline) was given as a 1ml bath to ligation area immediately post-ligation. In addition, angiography was at 5

minutes post-ligation.
RESULTS: Controls presented immediately progressive deterioration (Min/Med/Max): small intestine (lesions 3/3/3): (5min-15min-30min) bleeding (0/0/0-0/0/0-1/1/1), progressing vein congestion (2/2/2-3/3/4-3/4/4), arteries deteriorating repelition (0/0/0-0/0/0-1/1/1) and poor ramification (0/0/0-0/0/0-0/0/0); caecum (lesions 3/3/3): progressing bleeding (1/1/1-2/2/3-2/3/3), vein bcongestion (1/1/1-2/2/2-3/3/3), deteriorating repelition of arteries (4/4/4-4/4/4-2/2/2) and ramification of arteries (2/2/2-1/1/1-0/0/0); ascending colon (lesions 3/3/3): no bleeding (0/0/0-0/0/0-0/0/0), progressive vein congestion (1/1/2-2/2/3-3/3/3), deteriorating arteries poor repelition (3/3/3-1/2/2-1/1/1) and ramification (3/3/3-1/1/1-1/1/1). By contrast, BPC 157 presented: small intestine (lesions 1/1/1): no bleeding (0/0/0-0/0/0/-0/0/0), decreased vein congestion (2/2/2-1/1/1-1/1/1), increased arteries repelition (3/3/3-4/4/4-4/4/4) and ramification (2/2/2-4/4/4-4/4/4); caecum (lesions 1/1/1): no bleeding (0/0/0-0/0/0/-0/0/0), decreased vein congestion (2/2/2-1/1/1-1/1/1), increased arteries repelition (3/3/3-3/3/3-4/4/4) and ramification (4/4/4-4/4/4-5/5/5); ascending colon (lesions 1/1/1): no bleeding (0/0/0-0/0/0-0/0/0), decreased congestion (2/2/2-1/1/1-1/1/1) and increased repelition (3/3/3-3/3/3-4/4/4) and ramification of arteries (4/4/4-4/4/4-4/4/4) ($P \leq 0.05$, at least vs. control).
CONCLUSION: After SMA ligation, BPC 157 counteracted deleterious course. Accordingly, TAV and RBV were continuously more expressed (3/3/3 (BPC 157) vs. 0/0/1 (controls)) and angiography demonstrated in BPC 157-rats collateral circulation via TAV and RBV.

eP9: Esophagogastric anastomosis in rats. Improved healing by BPC 157 and L-arginine, aggravation by L-NAME

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INTRODUCTION: Esophagogastric anastomosis in surgery is part of the surgical treatment of esophageal cancer. Also anastomotic leaks are responsible for third of all perioperative deaths. It is suggested that BPC 157 improves healing of various anastomosis and is proposed as therapy in treatment of ulcerative colitis.
OBJECTIVES: To observe healing of anastomosis.
AIMS: To verify role of BPC 157 in enhanced healing of various anastomosis.
METHODS: Rats received medication (/kg ip once daily: BPC 157 (10μg, 10ng), L-NAME (5mg), L-arginine (100mg) alone and/o Daily assessment includes damage in stomach (sum of longest diameters, mm), esophagus (esophagitis, scored 0—5), anastomosis (ml H2O before leak), pressure in pyloric sphincter and in esophagus at anastomosis (cmH2O), weight loss (g). The values of 68 – 76 cm H2O for lower esophageal sphincter, and 68 – 74 cm H2O for pyloric sphincter, were considered to be normal as determined before.
RESULTS: In controls: progressive stomach damage was noted, as well as, severe esophagitis, rapid anastomosis leak, decrease of pressure and prominent weight loss. BPC 157: almost no gastric lesions or esophagitis, anastomosis without leakage, higher pressure in pyloric sphincter, less weight loss. L-arginine: effect comparable to that of a BPC 157 regimen. L-NAME: all parameters of esophagogastric anastomosis course were markedly aggravated. Combination: L-NAME+L-arginine-rats presented control values; L-arginine+BPC 157-rats presented a beneficial effect but no augmentation of the previous separate effects; L-NAME+BPC 157: BPC 157 completely counteracted L-NAME effects; L-NAME+L-arginine+BPC 157: BPC 157 presented its original beneficial effect.
CONCLUSION: BPC 157 in interaction with the NO-system markedly improves the healing of the esophagogastric anastomosis.

eP10: Cyclophosphamide-induced hemorrhagic cystitis as a particular NO-system disturbance, stable gastric

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INTRODUCTION: We focused on cyclophosphamide induced hemorrhagic cystitis as a particular NO-system disturbance, and therapy possibilities, and thereby that may be attenuated by NOS substrate L-arginine, aggravated by NOS-blocker L-NAME. Further, we investigate whether this could be influenced by the BPC 157 known to counteract NO-system disturbances and have own mucosal protection potential in gastrointestinal tract and anti-inflammatory capacity. In addition, we showed its therapeutic potentials for leak point pressure (LPP) recovery in rat stress urinary incontinence as a particular rescuing effect on failed LPP.

OBJECTIVES: We reveal new therapeutic possibilities, arguing stable gastric pentadecapeptide BPC 157 and L-arginine, versus L-NAME in rats underwent cyclophosphamide-cystitis.
AIMS: To verify the effect of the BPC 157 on cyclophosphamide-induced hemorrhagic cystitis.
METHODS: Rats were intraperitoneally injected with 100 mg/kg cyclophosphamide once daily throughout three subsequent days. Medication (BPC 157 10μg, 10ng, L-NAME 5mg, L-arginine 100mg alone and or in combinations) was given immediately after cyclophopshamide while controls simultaneously received an equivolume of saline (5ml/kg intraperitoneally). Alternatively, BPC 157 was given perorally in drinking water (per day) (10 μg/kg, 10 ng/kg, 0.16 μg/ml, 0.16 ng/ml, 12 ml/rat) until sacrifice while controls simultaneously received drinking water (12 ml/rat/day). Hemorrhagic cystitis was assessed at 24 hours after each cyclophosphamide application, at 24, 48 and 72 hours of the experimental period, macroscopically, microscopically, and functionally.
RESULTS: BPC 157 administration after cyclophosphamide, given in either dose or in either regimen markedly attenuated all cyclophosphamide lesions, grossly, microscopically. The increase of the bladder wet weight was consistently attenuated. Functionally, increased leak point pressure was reversed to the values noted in normal rats. CONCLUSIONS: BPC 157 administration in rats underwent cyclophosphamide-cystitis markedly attenuated all cyclophosphamide lesions, grossly, microscopically and functionally.

eP11: Epidemiology of road traffic mortality trends in Croatia

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INTRODUCTION: Road traffic accidents are one of the leading death causes in population worldwide and also represent great burden of disease due to premature death as well as invalidity.
OBJECTIVES: The objective is to analyse road traffic mortality trends in Croatia, compare mortality according to age and gender and compare them to other countries.
METHODS: We used data on standardized mortality rates from WHO Health for all database and data from Ministry of internal affair published in Buletin on road security.
RESULTS: The mortality of deaths caused by road traffic accidents in Croatia is 9.14/100 000 in 2013. and in past decade showed continuous slight drop. In comparison to EU standards, Croatia shows significantly higher rates. When divided by age, the highest mortality can be seen in two groups: 15-29 and 70+ years. According to Ministry of internal affairs, in 2014 from 308 deaths in traffic, 249 were caused by drivers. Between them, 62 of drivers were under influence of alcohol and 62 of them were under age of 31. The males have four times higher incidence than females, what can be connected by risky male behaviour due to testosterone and cultural influence.
CONCLUSION: It is our opinion that the mortality rates in road traffic accidents decreased due to implementation of numerous laws directed towards road safety, young drivers and driving under the alcohol influence of other substances. According to other countries experience, this trend could be continued with better education and involvement of not only politics but also media, schools and changes in prehospital and hospital emergency health care (trauma system).

eP12: Hormones in various species - a comparison

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Hormones – group of diverse chemical substances responsible for regulation of human behaviour are in fact present in all multicellular organisms, including animals and plants. Interestingly enough, hormones present in human body, such as acetylcholine and adrenaline, are also found in some unicellular organisms, the most famous representative being genus Paramecium. It is important to note that many of those protozoan organisms, which often live inside of a living host, are under the influence of hormones originating in the already mentioned host. Another difference worth mentioning emerges from the obvious distinction between vertebrates and invertebrates; while hormones located in vertebrates are both of endocrine and neurosecretory origin, those found in invertebrates are exclusively neurosecretory, since invertebrates do not possess developed glands of any kind. In Arthropoda, hormones play crucial role in growth as they control the metamorphosis and life cycles; from larvae forms to fully grown individual. In vertebrates, almost all hormones and glands have similar function, with thyroid gland being one of the most prominent of them. One noteworthy dis-

tinction comes in form of ultimobranchial glands, found in fish, amphibians, reptiles, and birds. In humans, ultimobranchial glands are called ultimobranchial bodies, and are in fact part of thyroid gland. On the other hand, hormone prolactin does not induce milk production in mammals only, but also in some species of birds, mainly pigeons. Plant hormones, also known as phytohormones, are present in both plants and higher algae, and refer to chemical compounds produced inside the plant. Since plants lack glands, or any other alike structures, every cell is capable of producing hormones. Those hormones affect growth and leaf formation, the time of flowering, the time of fruit development, and even the death of the plant. Despite seeming rather uninteresting, certain plant stress hormones have potential medicinal use in fighting various types of human cancer.

eP13: Long-term therapy with thrombopoietin receptor agonist in a patient with chronic immune thrombocytopenia

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INTRODUCTION: Primary immune thrombocytopenia (ITP) is an acquired autoimmune disorder characterized by isolated low platelet count and the absence of underlying cause of thrombocytopenia. ITP can manifest as mucocutaneous bleeding, but it can present with gastrointestinal or life-treatening intracranial hemorrhage. There are various treatment options (corticosteroids, intravenous immunoglobulin (IVIg), splenectomy, other immunosuppressive agents, rituximab, and, in recent years, thrombopoietin (TPO) receptor agonists). TPO regulates platelet production and TPO-receptor agonists were developed to treat patients with ITP by increasing platelet production.
OBJECTIVES: The objective of this work is to describe a patient with chronic ITP with effective long-term treatment with eltrombopag, an oral non-peptide TPO-receptor agonist.
AIMS: The aim of this work is to present an exciting novel treatment opportunity for chronic ITP with TPO-receptor agonist eltrombopag.
METHODS: We present a 65-year old female patient with long history of chronic ITP who was treated at the Division of Hematology, Department of Internal Medicine, University Hospital Center Zagreb, Zagreb, Croatia.
RESULTS: The 65-year old female patient was diagnosed with ITP 20 years ago. Over the years she underwent a number of treatment options (corticosteroids, IVIg, splenectomy, azathioprine), but recently with progression of thrombocytopenia, poor response to therapy, and with side effects of steroids. We reevaluated the patient again and excluded other possible reasons for secondary ITP (HIV, HCV, H. pylori, bone marrow assessment, autoimmune disorder). After that TPO-receptor agonist eltrombopag was started 50 mg once daily. Two weeks later she had increase of platelet counts, further maintaining platelet counts above 100,000 per uL with no bleeding episodes and with no side effects. After 11 months of treatment eltombopag was increased up to 75 mg per day to maintain platelet counts above 100,000 per uL. Currently, she has been taking eltrombopag for the last 26 months with platelet counts over 100 000 per uL, with good tolerability, no bleeding, not requiring any other immunosuppressive treatment for ITP, and with excellent quality of life.
CONCLUSION: Treatment of chronic ITP is usually challenging and includes various therapeutic modalities. Novel TPO-receptor agonists such as eltrombopag are an opportunity for successful long-term management of such patients.

C5: Diarrhea in a boy with mucocutaneous candidiasis and onychodystrophy: coincidence or underlying cause - polyglandular autoimmune syndrome type I

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INTRODUCTION: Polyglandular autoimmune syndrome (PGA) is characterized by multiple endocrine glands dysfunction. Two subtypes are known. PGA-I, also known as APECED (autoimmune polyendocrinopathy-candidiasis-ectodermal dystrophy) includes candidiasis, hypoparathyroidism and adrenal insufficiency. Rarely diabetes mellitus type 1, hypogonadism, pernicious anemia, malabsorption, alopecia and vitiligo can occur. Candidiasis manifests usually till age of 5, hypoparathyroidism till age of 10 and adrenal insufficiency occurs latest. We present 8-year old boy who was admitted to hospital due to diarrhea and hypotrophy, but was later

diagnosed with APECED syndrome.
CASE REPORT: The boy was admitted to hospital because of prolonged diarrhea after viral infection, elevated liver transaminases and hypotrophy. Since the age of three, he was treated for juvenile rheumatoid arthritis and was in remission without therapy during past three years. Due to focal alopecia and onychodystrophy of unknown etiology, he was also included in dermatologic care. At the time of admission, routine hematological and biochemical findings were normal, including liver function tests and inflammatory parameters. Serum immunoglobulin levels were elevated: IgA (3.1 g / L), IgG (14.6 g / L). Esophagogastroduodenoscopy showed eosinophilic esophagitis that was not histologically confirmed and allergy tests were normal. Other causes of malabsorption were excluded (cystic fibrosis, celiac disease). Few months later the boy was rehospitalized due to persistence of diarrhea, hypotrophy, abdominal pain and occasional occurrence of aphtous stomatitis. He had hyperpigmented skin and oral mucosa changes, which reflected fungal infection. Therefore, suspicion of autoimmune process was made and basic endocrine evaluation was performed. It showed adrenal insufficiency (cortisol 14 nmol / L, ACTH 400.3 pmol / L), and normal parathyroid and thyroid function, as well as calcium levels. Due to finding of mucocutaneous candidiasis, ectodermal dystrophy, and hormone dysregulation, APECED was suspected. Soon, cortisol replacement therapy was administered and boy is now asymptomatic, but in long-term care of endocrinologist.
CONCLUSION: We presented APECED syndrome in a boy who had involvement of different organ systems which demonstrates the complexity of the pathophysiological mechanisms and disease course. Although, according to literature, candidiasis, hypoparathyroidism, and adrenal insufficiency usually manifest progressively in that order, in our case no parathyroid dysfunction was found.

eP14: Seminaria Pathophysiologica Demonstratorum: Etiopathogenesis of neurogenic pulmonary edema

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INTRODUCTION: Neurogenic pulmonary edema (NPE) is an acute and serious life threatening form of pulmonary edema caused in most cases by subarachnoid hemorrhage, brain injury or epilepsy. The pathogenesis is not yet fully understood and therefore many researches and review papers on this topic have been published.
AIMS: The aim of this SPD is to explain etiology, possible pathophysiology mechanisms, clinical presentation and discuss the importance of on-time diagnosis and also treatment options of NPE through several conducted studies and case reports.
METHODS: PubMed has been searched in order to find the most representative literature.
CONCLUSION: We can conclude that the most likely etiopathogenesis mechanisms include activation of sympathetic nervous system and systemic inflammatory response, caused by increased intracranial pressure. Because of its severe consequences, NPE should be recognized on time and treated, as well as the cause of it, as soon as possible. Of course, more researches are needed in order to completely explain this condition.

eP15: Acetic acid destructive potential for gastric blood vessels and consequent ulcerogenic capability in

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INTRODUCTION: Gastric ulcer disease refers to painful sores in the lining of the stomach. The incidence of complicated ulcer disease is rising so there's need for finding efficient treatment. Using gastric ulcer induced by serosal application of acetic acid in rat, we have proven BPC 157 antiulcer effect.
OBJECTIVES: We focused on the earliest blood vessels events occurring while gastric ulcer appears, as a likely concurrent NO-system disability. We visualized the gastric serosa blood vessels and depicted the vascular architecture in ulcer development affected by administration of NOS-blocker L-NAME or administration of L-arginine, NOS-substrate, and combination, as well as whether effects might be accordingly affected by the beneficial effect of BPC 157.
AIMS: We hypothesized that gastric ulcer may be healed by therapy with stable pentadecapeptide 157 since it's antiulcer effect and interaction with NO.system has been recorded.
METHODS: Gastric ulcers were induced by serosal application of acetic acid (0.1ml, 99.5%) in the major curvature under deep

anesthesia and blood vessels were directly monitored at ventral stomach side before (100%) and remaining percentage throughout 15 minutes following acetic acid. Sacrifice was thereafter. Medication (/kg) (BPC 157 10μg, L-NAME 5mg, L-arginine 100mg alone and/or combined) was given as a 1ml bath to gastric serosa immediately after acetic acid while controls simultaneously received an equivolume of saline.
RESULTS: Controls. Blood vessels rapidly disappeared, eventually presenting (means±SD) only 40±4% of initial values, severe gastric lesions involved 40±8% of total glandular stomach area. BPC 157. 65±4% of blood vessels eventually remained, gastric lesions reduced to 8±3%. L-arginine. 80±4% of blood vessels remained, gastric lesions reduced to 15±5%. L-NAME. Blood vessels presented 45±6%, severe gastric lesions were aggravated to 80±9%. Combinations. L-NAME+L-arginine. Blood vessels (i.e., 50±10%) and gastric lesions (i.e., 45±9%) were presented like in controls. L-NAME+BPC 157. Compared to the controls, blood vessels remained upgraded (i.e., 62±6%) and gastric lesions below controls (i.e., 30±6%).
CONCLUSION: Acetic acid early destructive potential for blood vessels and consequent ulcerogenic capability were augmented by NOS-blockade and counteracted by NOS-substrate administration, and BPC 157 administration. BPC 157 better maintained its own antiulcer effect, and counteracted blood vessels disability and gastric lesions more than did L-arginine.

eP16: BPC 157 EFFECT ON RECTOVAGINAL FISTULA IN RATS

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INTRODUCTION: Recto-vaginal fistula is a devastating condition. While more than 99% of patients need surgical treatment, we hypothesized that rectovaginal fistulas may be healed by the therapy with the stable gastric pentadecapeptide BPC 157.
OBJECTIVES: We demonstrated that BPC 157, given perorally (in drinking water) or intraperitoneally, successfully healed rectovaginal fistulas in rats. This consistent beneficial effect could be hardly disputed. Thereby, we suggest that the BPC 157 fistulas therapy follows an essential healing commonality between the external and internal fistulas. Likewise, it follows some particularities in the rectovaginal fistulas as the internal fistulas healing.
AIMS: We hypothesized that rectovaginal fistula may be healed by therapy with stable pentadecapeptide 157, in consistence with its initial clinical application and effecst on external fistulas healing.
METHODS: BPC157 (10 μg/kg or 10 ng/kg) was given perorally, in drinking water (0,16 μg/ml or 0,16 ng/ml, 12 ml/rat/day). The assessment (i.e. rectal and vaginal defect, fistula leakage, defecation through the fistula, adhesion and intestinal obstruction as healing processes) was at day 1, 3, 5, 7, 10, 14 and 21.
RESULTS: Rats underwent vaginal fistulas presented a complex course. Rectal and vaginal defects, fistula leaking, adhesions and intestinal obstruction were aggravated in controls versus a consistent closure of both defects and fistulas in all BPC 157 rats. Beneficial effect of BPC 157 therapy resulted in healing, either given perorally in drinking water or intraperitoneally.
CONCLUSION: Recto-vaginal fistula is an especial devastating condition that would certainly benefit from novel treatment. In theory, a simultaneous beneficial effect is mandatory of the healing of the intestinal fistulas. This signifies a new quality in the combined tissue healing along with a beneficial effect in ulcerative colitis, which is not a simple repeat of separate defect healing but taking into account all the healing particularities of the fistula healing. There, regardless still limited clinical trials, BPC 157 is the agent that promptly improves healing of both rectal and vaginal lesions and mediated fistula closing in rats. With LD1 not achieved, implemented in inflammatory bowel disease trials, BPC 157 should be the practical hallmark of further wound healing therapy in fistulas.

eP17: RAT RECTOVAGINAL FISTULAS ARE AUGMENTED AFTER EITHER L-NAME ADMINISTRATION

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INTRODUCTION: Rectovaginal fistula is a devastating condition whatever the cause. Relation with NO-system disability is unknown. We recently demonstrated that rectovaginal fistulae in rats may be healed by therapy with BPC 157 proposed as a therapy in ulcerative colitis. Also, BPC 157 largely interacts with NO-system.
OBJECTIVES: Having in mind confirmed beneficial effects of BPC 157, we tested: (A)how administration of NOS-blocker L-

NAME or administration of L-arginine, NOS-substrate, and their combination would affect the rectovaginal fistulas in rats; (B) whether these effects might be accordingly affected by the beneficial BPC 157 effect given perorally.
AIMS: We hypothesized that rectovaginal fistula healing results when using BPC 157 along with L-NAME or L-ARGININE will show better results.
METHODS: Rat rectovaginal fistulas were created. Longitudinal incision on the posterior wall of the vagina and anterior rectal wall (5 mm) were performed. BPC 157 (10 μg/kg) was given perorally, in drinking water (0.16 μg/ml, 12 ml/rat/day) till sacrifice. While control received saline (5ml/kg); L-NAME 5mg/kg, L-arginine 100mg/kg, were given intraperitoneally, once daily, first application at 30min after surgery, last at 24h before sacrifice, at the day 14 or 21, alone and/or combined in rats drinking water only or BPC 157 in drinking water.
RESULTS: Day 14 and 21. Controls had defect (diameter, means±SD, mm) rectal 3.4±0.2, 3.0±0.2 and vaginal 3.1±0.2, 2.5±0.3; continuous fistula leakage (only small volume (ml H2O) sustained 1.3±0.2, 1.6±0.2); all had defecation through the fistula, advanced adhesion formation and intestinal obstruction. BPC 157-rats had defects closed, larger volume (ml H2O) sustained 3.9±0.2, 5.0±0.2 no fistula leakage, no defecation through the fistula, reduced adhesion formation and no intestinal obstruction. L-NAME/L-arginine. Along with defecation through the fistula in all rat, advanced adhesion formation and intestinal obstruction, rectovaginal fistulas-rats with L-NAME and L-arginine alone and/or combined exhibited even larger defects (rectal 5.1±0.2, 5.5±0.2; vaginal 4.8.1±0.2, 5.2±0.2 (L-NAME); rectal 5.3±0.2, 5.7±0.2; vaginal 5.8±0.2, 5.5±0.2 (L-arginine), rectal 5.6±0.3, 5.4±0.1; vaginal 5.3±0.1, 5.6±0.1 (L-NAME+L-arginine)), small volume (ml H2O) sustained only rectal 1.6±0.2, 1.2±0.2 (L-NAME); 1.8±0.2, 1.3±0.2 (L-arginine); 1.7±0.2, 1.1±0.4 (L-NAME+L-arginine), continuous fistula leakage. BPC 157/L-NAME/L-arginine. L-NAME, L-arginine and L-NAME+L-arginine were however almost harmless with BPC 157 drinking.
CONCLUSION: NOS-blockade as well as NOS-substrate administration aggravated rectovaginal fistulas. This aggravation was counteracted by BPC 157 which maintained its fistulas-healing potential.

eP18: Cyclophosphamide induced stomach lesions in rats. Aggravation by L-NAME, counteraction by stable gas

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INTRODUCTION: Cyclophosphamide is used in chemotherapy and has severe and life-threatening adverse effects, , especially at higher doses Anticancer drugs may induce acute mucosal injury to stomach, while the ulcerogenic potential cyclophosphamide administration was little investigated. We suggest pentadecapeptide BPC 157 strongly counteracted gastric lesions, and it was proposed as a therapy in ulcerative colitis and now in multiple sclerosis trial .
OBJECTIVES: We showed cyclophosphamide administration in rats throghout one week as likely NO-system disability, thereby, affected by NOS-blocker L-NAME, and reciprocally by L-arginine, NOS-substrate, or their combination. AIMS: To verify effect of BPC 157 on Cyclophosphamide induced stomach lesions.
METHODS: Cyclophosphamide (150 mg/kg ip) was given once daily for 1, 2, 3, or 7 days, and rat sacrifice was at 24 hours after last administration, and sum of longest lesions diameters (mm) in stomach was assessed as described before. Medication (/kg) includes (a) ip administration of BPC 157 10μg, 10ng, L-NAME 5mg, L-arginine 100mg alone and or in combinations immediately after cyclophosphamide administration, or (b) administration in drinking water: BPC 157 (/kg) 10μg, 10ng (0.16μg/ml; 0.16ng/ml; 12ml/rat/day) till the sacrifice. Controls simultaneously received saline (5ml/kg ip) or drinking water only.
RESULTS: Controls. From the beginning , there is presence of severe hemorrhagic gastric lesions (250±10, at the day 7). BPC 157. From start , all animals have shown attenuated lesions, i.e., at the day 7 50±5 (10μg ip); 55±7 (10ng ip); 45±8 (10μg po); 59±7 (10ng po). L-NAME aggravated cyclophosphamide lesions at all intervals, i.e., at the day 7: 355±15 (Means±SD, P

eP19: Cysteamine duodenal ulcerogenic potential is augmented with stomach

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INTRODUCTION: Cysteamine was a first particular duodenal ulcerogen, thought to be a dopamine antagonist, a prototype of duodenal ulcer unlike to induce gastric ulcer as well.
OBJECTIVES: Stable gastric pentadecapeptide BPC 157 strongly counteracted cysteamine duodenal lesions, and it was proposed as a therapy in ulcerative colitis and now in clinical trials for multiple sclerosis.
AIMS: To verify bene cial e ect of BPC 157 on cysteamine-duodenal ulcerogenesis.
METHODS: Female Albino rats 200 g bw received cysteamine 400 mg/kg sc, and they were sacrificed at 24 hours thereafter, and sum of longest lesions diameters (mm) were assessed as described before. Medication (/kg ip) (BPC 157 10μg, L-NAME 5mg, L-arginine 100mg alone and or in combinations) was given immediately after cysteamine while controls simultaneously received an equivolume of saline (5ml/kg ip).
RESULTS: Controls. Severe duodenal lesions were induced in all rats (8±0.3). BPC 157. Animals were without lesions. L-arginine. Cysteamine lesions were induced in duodenum (8±0.5) but also in the stomach (6.5±0.3). L-NAME. Cysteamine lesions appeared in both duodenum (8±0.7) and stomach (5.5±0.3). Combinations. Cysteamine+L-NAME+L-arginine-rats exhibited lesions in duodenum (8±1) as well as in stomach (4.6±0.7). Cysteamine+BPC 157+L-arginine-rats exhibited no lesion. Cysteamine+BPC 157+L-NAME-rats had only small lesions in duodenum (1.5±0.7). Cysteamine+BPC 157+L-NAME+L-arginine-rats showed only duodenal small lesion (2±0.7).
CONCLUSION: Cysteamine duodenal ulcerogenic potential seems to be augmented by either NOS-blockade (L-NAME administration) or NOS-substrate administration (L-arginine), and gastric lesions would consistently appear in addition to those in the duodenum. L-arginine and L-NAME could not antagonize each other's response. By contrast, with L-NAME or L-arginine, given alone and/or combined, BPC 157 maintained its own antiulcer effect, and counteracted both duodenal and gastric lesions in cysteamine rats.

eP20: Pentadecapeptide BPC 157 counteracts celecoxib induced lesions on gastric mucosa in rats

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INTRODUCTION: With therapy with BPC 157 (known to inhibit nonselective NSAIDs- gastrointestinal, liver and brain-toxicity) we attempted to discriminate gastric lesions after high dose celecoxib administration.
OBJECTIVES: Induce gastric mucosal injuries in rats by celecoxib intraperitoneally.
AIMS: We investigated the anti-ulcer effect of pentadecapeptide BPC 157, after celecoxib overdose.
METHODS: Gastric mucosal injuries in rats were induced by celecoxib (1g/kg) intraperitoneally. To counteract, BPC 157 (10μg, 10ng (/kg)) or saline (5ml/kg) were given intraperitoneally immediately thereafter. Rats were sacrificed after 24 and 48 hours, and stomach mucosal defects were assessed as described.
RESULTS: Celecoxib induced huge gastric lesions, huge confluent lesions (4±1 (48h)), and multitude of punctiforming black hemorrhagic lesions (20±3 (24h), 30±5 (48h)), that were both counteracted in BPC 157 rats (no confluent lesions, no punctiform lesions at 24h, punctiform lesions at 48h: 4±2 (μg);10±3 (ng)).
CONCLUSION: Celecoxib induces in overdose huge gastric lesions. BPC 157 was able to counteract lesion formation. This effect is along with counteraction of the lesions induced by nonselective NSAIDs.

eP21: BPC 157: The counteraction of succinylcholine

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INTRODUCTION: BPC 157 has life-saving effect in severe hyperkalemia and the beneficial effect in recovering of skeletal muscle after injury. Therefore interraction between BPC 157 and succinylcholine was investigated.
OBJECTIVES: After administration of substances measure serum enzymes, kalium levels and doing ECG recording. AIMS: Counteracting arrythmias and hyperkalemia caused with succinylcholine by administrating BPC 157.
METHODS: Male wistar albino rats were used (180-250g). Succinylcholine was administered intramuscullary into the right anterior tibial muscle. BPC 157 was adiminstered IP 15 minutes before an intramuscular injection of succinylcholine or 24h before administration of succiniylcholine perorally in drinking water. Assesments were made at 3 and 30 minutes and 1, 3, 5 and 7 days after succinylcholine administration.
RESULTS: BPC 157 completely eliminated hyperkaliemia and arrhythimas, markedly attenuated or eradicated behavioral agitation, muscle twitches, motionless resting and completely eliminated post-succinylcholine hyperalgesia. BPC 157 immediately eliminated leg contractures and counteracted both edema and the decrease in muscle fibers in the diaphragm and injected/non-injected anterior tibial muscle.
CONCLUSION: BPC 157 sucessfully antagonzed depolarizing neuromuscular blocker effects of succinylcholine.

eP22: Influence of BPC 157 and estrogen on lipid and carbohydrate metabolism in ovariectomized rats

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INTRODUCTION: Ovarectomy in rats causes changes similar to those in postmenopausal women due to lack of estrogen. As changes in lipid and carbohydrate metabolism are present in postmenopausis and BPC 157 has favorable effect on glucose and lipid metabolism.
OBJECTIVES: Administration of BPC 157 after ovarectomy in rats. Monitoring values of glucose, triglycerides, cholesterol, high-density-lipoprotein (HDL), low-density-lipoprotein (LDL) .
AIMS: Our aim is to note if there are benefficial effects in using BPC 157 in postmenopausis.
METHODS: In this study female Wistar rats (200-220 g)are used. Both ovaries are ligated with resorbable sutures and removed. The control group recieved 1mL 0.9% NaCl solution, while treated group recieved intraperitoneally 1mL of BPC 157 at a dose of 10 μg/kg. Third group recieved IP estradiol (0.5 mg/kg). Animals are treated daily for 8 weeks and then sacrificed. Uterus, urinary bladder, vagina and vulva are collected for histology analysis. Evaluation includes animal weight, distance between the citoris and anus, uterine weight, gap between the two uterine horns and bladder weight.Laboratory analysis of lipids, glucose and liver enzymes is performed.
RESULTS: Preliminary results include values of glucose, triglycerides, cholesterol, high-density-lipoprotein (HDL), low-density-lipoprotein (LDL) in all three groups. Lower triglyceride levels in rats treated with estrogen compared to ones treated with BPC 157 was statistically significant. Also significant were higher levels of HDL in BPC treated group than in control group and lower levels of LDL in estrogen recieving group compared to the control group.
CONCLUSION: It is known that menopause causes an increase of serum levels of triglycerides, cholesterol and LDL, while HDL levels decline in women. How menopause affects glucose metabolism is not completely understood. Results in ovarectomized rats show no statistically significant differences in levels of glucose and cholesterol in all three groups. Group treated with BPC has higher levels of HDL compared to the control, but group treated with estrogen shows lower levels of triglycerides than BPC group. Also estrogen treated group had lower LDL compared to control. In conclusion treatment with estrogen has favorable effects on lipid metabolism in ovariectomized rats compared to BPC.

eP23: PENTADECAPEPTIDE BPC 157 EFFECT ON BLOOD VESSELS OF PERFORATED CAECUM IN RATS

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INTRODUCTION: Stable gastric pentadecapeptide BPC 157 is known to induce rapid healing of the various gastrointestinal injuries. In particular, pentadecapeptide BPC 157 is known to have a strong cytoprotective effect, especially to maintain endothelium integrity before inducing the full healing effect on mucosal injury.
OBJECTIVES: We induce caecum perforation in rats, and assess the presentation of blood vessels and number of anastomosis between them before, and after injury (1 min) when the medication was applied.
AIMS: To investigate the presentation of the blood vessels immediately after injury.
METHODS: We induce caecum perforation in rats, and observe the presentation of blood vessels and number of anastomosis between them before, and after injury (1 min) when the medication was applied and the effect was assessed with local saline bath (1ml/rat) or local BPC 157 bath (2ug/1ml/rat; 10ug/kg) at next 1 min and 5 min thereafter as follows. Area of assessment includes two neighboring blood vessels on both sides of the defect.
RESULTS: In general, the number of apparent blood vessels anastomosis before defect creation was significant. Immediately after injury induction, this number would strongly decrease. Huge number of anastomosis between blood vessels disappear immediately after injury induction. This decreased number remains constantly low in rats underwent saline bath. In contrast, alongside with BPC 157 bath, these blood vessels making anastomosis between the blood vessels reappear, and within short time reach the previous number or even more.
CONCLUSION: Considering that fullfiled blood vessels are visible, with could conclude that this effect inducing a network of interconnected blood vessels might be essential for further healing effect and closing of the defect.

eP24: ASSESSMENT OF BONE LOSS IN SUBACUTE PHASE OF ANTIGEN-INDUCED ARTHRITIS

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INTRODUCTION: Rheumatoid arthritis is one of the major causes of disability, due to irreversible bone destruction. Non-destructive autoimmune arthritides may also appear in the course of systemic autoimmune diseases, such as systemic lupus erythematosus (SLE). Murine deficiency of Fas corresponds to human SLE, and is characterised by non-resorptive form of chronic antigen induced arthritis (AIA).
OBJECTIVES: The objective of the study was to assess bone volume, joint inflammation and cartilage condition in the subacute phase of murine AIA (day 10 post induction) at the different sites in periarticular bone.
AIMS: The objective was achieved through three specific aims: semiquantitative assessment of synovial thickening, amount of joint exudate, and invasion of subchondral bone by pannus, as well as quantitative assessment of bone on Goldner-trichome-stained sections of the knee joint; assessment of cartilage damage on the toluidine-stained sections; and quantitative assessment of bone-resorbing osteoclasts (OCL) on sections stained for tartarate-resistant acid phosphatase (TRAP).
METHODS: Arthritis was induced in wild-type (B6, n=6) and Fas-deficient (Fas, n=6) mice, by immunisation with metylated(m) bovine serum albumin (BSA), followed by intraarticular (i.a.) injection od mBSA in both knees. Control (ctrl) B6 (n= 5) and Fas (n=5) mice were immunized with mBSA, and i.a injected with phosphate buffered saline (PBS). Five μm thick sagittal sections of knee joint were stained for Goldner-trichome, toluidine blue, and TRAP. Bone histomorphometry of periarticular bone was performed in total epiphyseal area, as well as central metaphyseal area of femora and tibiae, 1mm distal to the growth plate. Osteoclasts were counted on subchondral bone surface, as well as epiphyseal and metaphyseal trabecular bone surface.
RESULTS: Semiquantitative arthritis score was significantly lower in Fas mice with AIA, in comparison to B6 mice (p

eP25: The Frequency Of Adrenal Mass In Adult Population Of Single Centre

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INTRODUCTION: The adrenal gland is a common site of a large spectrum of abnormalities like primary tumors, hemorrhage, metastases, and enlargement of the gland from external hormonal stimulation. The tumor in the adrenal gland can be a diagnostic challenge, often due to incidental findings during the assessment of other diseases, known as adrenal incidentalomas. The common differential diagnosis includes six entities which account for the large majority of all adrenal masses. Those are: functioning or non functioning adenoma, pheochromocytoma, metastasis, myelolipoma and primary carcinoma of the adrenal gland.
OBJECTIVES: Intention of our presentation was to investigate the frequency of adrenal mass diagnosis in a single center. AIM: The aim of this study was to collect and analyse histopathological and clinical data on adrenal masses and to correlate our findings with other centers.
MATERIJALS AND METHODS: The Department of Pathology provided data on all adrenal biopsies in the Clinical Hospital Center of Rijeka for a period of fifteen years. Tissues were processed according to standard protocols, and examined by light microscopy and immunohistochemistry.
RESULTS: Over a 15-year period a total of 75 adrenal gland biopsies were performed for 38 male and 37 female patients (mean age 59.1 years). The average age for woman was 58.2 and for man 60.8. Biopsy results show 22 adenomas (of which 81.8% were brightcells and 18.2% were hybrid),5 carcinoma, 8 nodular hiperplasia, 24 metastasis, 6 pheochromocytoma, 5 hemangioma and 6 were diagnosis other then tumors.
CONCLUSION: An adrenal mass could be a diagnostic challenge. Radical surgical resection is indicated in case of lesions with malignant potential, risk of spontaneous hemorrhage, or increase in size over time.

eP26: Comparative anatomical and hystological study of the corpus striatum in humans and rhesus monkeys

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INTRODUCTION: When comparing human to other mammalian brains, it is postulated that the older, „diencephalic brain" is highly conserved among species, whilst the more „recent" (neo)cortical brain differs in a significant extent. Although of telencephalic origin, the basal ganglia are also often considered conserved, as they represent a universal cortico-thalamo-cortical co-ordination system.
OBJECTIVES: Since basal ganglia and the cortex are tightly interconnected, even the slightest evolutionary driven changes in the cortex would affect the basal ganglia by means of the subtle microarchitectural reorganization. Therefore, our objective was to try to identify those hypothesized changes.
AIMS: Our aim was to compare distinctive regions of the corpus striatum in human specimens with the corresponding regions in rhesus monkey (Macaca mulatta) regarding the brain metabolism and number of neurons. We chose the striatum because it represents the main input nucleus to the basal ganglia system.
METHODS: We microscopically compared the striatum of macaca mulatta (n=6) and homo sapiens (n=3), using specimens provided by Mikula et al., with no co-morbidities that would interfere with the structure of the region of interest. The coronal slices were stained immunohistochemically using cytochrome oxidase primary antibodies. Specimens were photographed in a high resolution format and analysed digitally using the Cell Profiler Analyst software.
RESULTS: Our results revealed a statistically significant lesser neuronal count per area unit in the following striatal regions in macaques compared to analogous regions in humans: medial putamen (p=0,001) and dorsolateral caudate (p=0,002). No significant differences regarding the neuronal count were observed in the ventral putamen, ventromedial caudate and dorsolateral putamen, except for the discrete striosomal islets in the putaminal convexity, whose dorsal half was significantly hyperneuronal in macaques (p=0,001), whereas its ventral half's neural count was slightly greater in human specimens with a somehow weaker statistical significance (p=0,004).
CONCLUSION: These findings suggest that significant microarchitectural differences may exist between the striatum of close primate relatives, humans and rhesus monkeys. Hyperneuronal areas in humans compared to macaques are actually somatotropic regions implicated in forelimb movement and prefrontal loop of the basal ganglia. Discrete dorsal portion of putaminal convexity that is hyperneuronal in macaques compared to humans is actually the region responsible for hindlimb movement.

eP27: Effects of the maternal gestational and lactational diet regime on the offspring's adipose tissue mo

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INTRODUCTION: Obesity is a leading preventable cause of death with increasing prevalence in adults and children. It has been shown that adipocytes in obese subjects tend to be hypertrophic compared to lean subjects. Recent studies also suggest that maternal high fat diet (HFD) during pregnancy and lactation may also be a trigger for obesity among the offspring.
OBJECTIVES: The objective of this study was to investigate the possible influence of maternal diets combined with offspring's diet after weaning on adipose tissue morphology.
AIMS: Our aim was to analyse influence of the high fat diet (HFD) and normal diet after weaning on subcutaneous adipose tissue in the offspring of the female rats fed on the high fat diet and normal chow during gestation and lactation. METHODS: Ten female Sprague Dawley rats, nine weeks old, were randomly divided in two groups, CD (control diet) and HFD (food rich in saturated fatty acids) during five weeks, and then mated with genetically similar males. After birth and lactation, offspring rats from each group (CD and HFD) were further randomly divided into four groups, based on their mothers' diet as well as their own diet. Harvested subcutaneous adipose tissue samples were fixed in 4% paraformaldehide, paraffin-embedded, cut in 6 μm thick slices and histologically stained with haematoxylin-eosin. Histomorphometry and adipocytes quantification was performed using the Cell Profiler.
RESULTS: Preliminary results of subcutaneous adipose tissue quantification in female rats (two animals per group, n=8) show noticeable morphological differences in CD-HFD and HFD-HFD rats compared to other groups in terms of hypertrophy and cellularity. Median areas of adipocytes in CD-HFD and HFD-HFD rats are 94.09 μm^2 and 91.36 μm^2, respectively, which indicates slight hypertrophy compared to median areas in CD-CD (86.01 μm^2) and HFD-CD group (88.27 μm^2).
CONCLUSION: Our preliminary results suggest that adipocyte hypertrophy primarily depends on the offspring diet regime, although HFD maternal diet may make offspring more prone to obesity by influencing the number of adipocytes, rather than their volume. However, no conclusions should be drawn until the data from a larger sample is available.

eP28: The beneficial effect of BPC 157 on parietal peritoneum injury

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INTRODUCTION: Injuries of parietal peritoneum are known to cause adhesions potentially resulting in complications such as chronic pain, hernia and bowel obstruction. This study investigates the effect of BPC 157 on peritoneal adhesions.
OBJECTIVES: To evaluate the effect of pentadecapeptide BPC 157 in preventing postoperative peritoneal adhesions and therefor complications after it.
AIMS: To show beneficial effect of BPC 157 on peritoneal adhesions that could be used as postoperative treatment to reduce complications.
METHODS: Rats were randomized in control and BPC 157-treated group. Both were subjected to injuries of the parietal peritoneum to induce peritoneal adhesions, followed by intraperitoneal administration of saline (control group) and BPC 157 (treated group). The adhesion scores were recorded after 7 and 14 days.
RESULTS: Control group developed excessive peritoneal adhesions combined with hernia and ileus. Additionally, BPC 157-treated group showed discrete peritoneal adhesions and normal peristalsis, with affected area almost completely healed.
CONCLUSION: Intraperitoneal administration of BPC 157 effectively prevented excessive peritoneal adhesions and enhanced healing process after injury of parietal peritoneum.

eP29: The effect of BPC 157 on transplantation of cadaveric tendons in rats

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INTRODUCTION: Stable gastric pentadecapeptide BPC 157 is known to heal tendon, after transection of bone detachment. Therefore, we studied the effect of BPC 157 on transplantation of cadaveric tendon in rats. OBJECTIVES: To evaluate healing effect of BPC 157 after transplantation of cadaveric tendons in rats.
AIMS: To show beneficial effect of BPC 157 in tendon healing after transplantation of cadaveric tendons in rats. METHODS: Achilles tendons 3 mm were taken from rats 15 minutes after death. The tendon specimens were incubated in room temperature saline or saline BPC 157 2ug/ml for next 5 minutes. Then, the 3 mm parts of the Achilles tendon were removed from the healthy rats and the specimen from the donor rats were interconnected in the defect using 6.0 suturing. Thereafter, BPC 157 was given in the drinking water 10 ug/kg (0.16 ug/ml, 12ml/rat/day) for next 30, 60 or 90 days while controls were drinking water only. The lesions were scored using a simple gross scoring (0-10) encompassing contraction of the leg, tendon healing and amount of granulation tissue.
RESULTS: All controls presented severe leg contracture, poor tendon healing and excess of granulation tissue. On the other hand, the contracture of the injured leg was completely absent since very beginning in all rats underwent BPC 157 regimen. Additionally, tendon healed almost completely and granulation tissue was negligible. The same consistent beneficial effects were noted in rats at 30, 60, and 90 days.
CONCLUSION: BPC 157 markedly improves tendon healing after tendon transplantation.

C6: Broad QRS tachycardia in patient with hypothyroidism: case report

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INTRODUCTION: Patients with broad QRS tachycardia can be hemodynamically completely stabile with no evident signs or symptoms. The most common reason for it is atrial fibrillation with bundle branch block or conduction via accessory pathways.
CASE PRESENTATION: 51-year-old female was admitted to department of cardiology for further investigation of sudden episodes of palpitations with dyspnoea, dizziness and nausea, which always started while resting and lasted for about a minute. Such episodes were present for the last thirteen years, occurring from couple of times per week to a couple of times per year. Fifteen years ago she underwent a partial tiroidectomy due to benign mass and is on supplement hormone therapy ever since. In October 2011 she was diagnosed with deep vein thrombosis. There was also a suspicion of antiphospholipid syndrome due to elevated anticardiolipin antibodies but it was excluded later on. Physical examination showed no abnormalities. Blood tests, thyroid hormones and echocardiography were all normal. ECG showed sinus rhythm with frequency of 59/min and right cardiac axis. A fourteen day Holter monitoring was performed, which showed broad QRS complex tachycardia. Exercise stress testing showed no signs of ischemia however individual ventricular extrasystoles during rest were seen. Intracardiac electrophysiology study was performed without evoking a pathological rhythm. However, when manipulating with catheters focal atrial tachycardia with right bundle branch block occurred and ablation of cavotricuspid isthmus and slow atrioventricular nodal pathway was performed.
DISCUSSION: Our patient presented to the department of cardiology relatively late. The reasons for that could be the mild severity of her symptoms and the fact that she was primary managed as patient with hypothyroidism, which is known to cause arrhythmias. However, the conclusion of this report should be that episodes of palpitations and dyspnoea should be investigated thoroughly and all possible heart causes should be excluded.

C7: Myectomy in patient with NYHA III hypertrophic obstructive cardiomyopathy

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INTRODUCTION: Hypertrophic cardiomyopathy (HCM) is a heterogeneous group of diseases which are based on understanding of the underlying morphology, pathophysiology, and clinical course. It has a weary variable natural progression, which ranges from dyspnoea and syncope to sudden cardiac death. Diagnosis of HCM relies on clinical assessment and transthoracic echocardiography.
CASE PRESENTATION: 42-year-old male smoker with known mitral insufficiency and obstructive HCM was admitted to department of cardiology because of worsening stenocardia during physical activity which is often accompanied with dyspnoea. He denied dizziness, syncope and palpitation. Last few days he noticed severe worsening of dyspnoea during the night. He often wakes up and has to sit until dyspnoea disappears. On examination there was a moderate mesotelesistol murmur over the apex spreading throughout precordium. Laboratory showed a raise of pro BNP from 578 to 1028 ng/L. Stress echocardiography showed a decrease of aerobic physical performance by 10 %. Transoesophageal echocardiography was performed which showed systolic anterior motion of the mitral valve, severely thickened septum (1.8 cm) and moderately thickened (1.3 – 1.4 cm) remaining cardiac walls, moderate diastolic dysfunction and ejection fraction (EF) of 70%. There was also sever mitral regurgitation which did not appear to be valvular and should decrease with myectomy. Carotid artery Doppler and tests of pulmonary function showed no abnormalities. The patient was classified as NYHA III, till then he was NYHA II, and was scheduled for operative treatment. Septal myectomy with mobilisation of papillary muscles was performed. On one-year check-up cardiac MRI was preformed which showed septum around 1,3 cm thick with minor mitral regurgitation. Echocardiography showed improved diastolic function without obstruction. Stress echocardiography even showed 10% increase in physical performance. The patient was classified as NYHA I.
DISCUSSION: In presented case septal myectomy was preformed after all conservative treatment has been exhausted. The outcome was better than expected. Patient even gained 10% of physical performance and is now without any signs or symptoms. He is in good physical shape and classified as NYHA I.

C8: Worsening of Coronary artery disease after three months: case report

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INTRODUCTION: Triple vessel coronary disease (3VD) is defined as the presence of ≥50% diameter luminal narrowing in each of the three major coronary arteries. These arteries are left anterior descending (LAD), left circumflex (LCX) and right coronary artery (RCA).
CASE PRESENTATION: We present a 48-year-old male with known hypercholesterolaemia and a history of non ST-elevation myocardial infarction resolved with emergent percutaneous coronary intervention (PCI) of LAD with drug eluting stent. Echocardiography preformed on the day following PCI showed no abnormalities. He had completely recovered and started taking cardio-vascular protective therapy including two antiplatelet drugs. Three months after PCI he presented with episodes of sharp chest pain occurring at rest. He described bursts of localized pain as severe (7/10), lasting less than a minute, with spontaneous resolution. The pain occurred multiple times during the day for the last 14 days. He denied dizziness, syncope and dyspnoea. Troponin values were negative, ECG showed sinus rhythm with normal axis and no signs of ischemia. Exercise stress testing was performed and had to be terminated due to sever dyspnoea with horizontal ST denivelations in V4 –V6 and reduction in systolic blood pressure by 40 mmHg. Diagnostic coronarography followed where subtotal stenosis of LAD, proximal to the existing stent, extending to left main coronary artery was seen. Significant stenosis of LCX, OM1 and RCA were also present. Based on coronarography result patient was diagnosed with 3VD and had to be surgically treated.
DISCUSSION: Patient presented with new episodes of chest pain relatively shortly after PCI LAD stenting, despite drug eluting stent on dual antiplatelet therapy and complete physical recovery. What was interesting is that in only 3 months all of already existing hemodinamically insignificant coronary artery stenosis worsened and evident 3VD developed. By-pass grafting was indicated along with therapy optimization.

c9: Case Report: Better Glycemic Control After Liraglutide Therapy In Diabetes Mellitus Type II

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INTRODUCTION: Diabetes mellitus is a chronic metabolic disease characterized by high blood levels of glucose caused by deprivation of insulin secretion of pancreas. Incretins are substances from digestive system that stimulate the secretion of insulin. They are GLP and GIP. The incretin effect is the difference in insulin response after oral and intravenous glucose intake. Diabetics have lower incretin response after oral intake of glucose, therefore, insulin elevation in plasma is lower after glucose intake. Victoza (liraglutide) is GLP-1 analog, but the absorption is slower, t ½ is longer (13h) and it is more DDP4 resistant than human GLP-1.
OBJECTIVES: A 57-year-old male has been diagnosed with DM type 2 for 3 years. He has used metformin, DPP4 inhibitor and gliclazide. His HbA1c level in blood was 8,7%, glucose in blood before meal: 7,1 – 11 mmol/L, after meal 8-14 mmol/L.
RESULTS: 4 weeks after stopping DPP4 inhibitor and adding Victoza to his therapy, patients blood glucose levels have decreased for minimally 1 mmol/L, and Hb1c for 1,4%. Patient has also lost 6,4% of his body mass and had less hypoglycemic crisis. He denies any side-effects and feels better
CONCLUSION: Given these points, Victoza therapy is, in this case, considered adequate therapy choice.

eP30: Impact of establishment of National transplantation network on the number of organ donors and transp

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INTRODUCTION: Transplantation medicine is a rather young medical field. As a method of treatment human organs are used. Those are donated with the aim to help fellow humans in disease and desperate situation. First condition for a successful treatment is developing a program that will take care of procuring the necessary organs. This should be an independent activity which requires appropriate addressing of professional, juridical, organizational and ethical aspects. OBJECTIVES: By organizing the transplantation activities on the national level, Slovenia could achieve the stage of development of transplant activity comparable to that of the other member countries of Eurotransplant. By regulating the national transplant network the number of donors exponentially increased and consequently the number of procured organs and transplants.
AIMS: To show how the creation of national transplantation network with 24-hour coordination and the establishment of Institute of the Republic of Slovenia for the transplantation of organs and tissues (Slovenia-transplant) led to increased number of donors and transplantations.
METHODS: The primary source of data for the period after the establishment of Extended expert council for transplantation (1991-2000) was the archive of Slovenia-transplant. We have used all primary and unprocessed archival sources and studied them in accordance with the aim of this research. For the period of kidney transplants from living related donors and for the beginning of kidney transplants from deceased donors (1970-1991) we have used secondary sources (scientific papers and articles).
RESULTS: In 1970, Slovenia started kidney transplantation from the living related donors. As long as the transplantation activity covered only kidney transplants, all the activities were conducted by nephrologists. Act on removal and transplantation of human body parts for medical purposes issued in 1985, and Rules on detailed medical criteria and the methods for determining occurrence of brain death of the person from whom it is permitted to take body parts for transplantation for treatment in 1986, made it possible to transplant organs from deceased donors. However, with lack of proper organization of the field the number of available organs has remained scarce in the following years. The transition to deceased donor organs and the possibility of transplanting other organs (heart, liver, lungs, pancreas), required to organize these activities on national level. In 1992, Extended expert council for transplantation was established. Under the presidency of anesthesiologist Jasna Vončina the council carried out all the necessary procedures for the construction of National transplantation network, the establishment of 24-hour coordination and subsequently the establishment of Slovenia-transplant in 2000.
CONCLUSION: After the establishment of National transplantation network with 24-hour central coordination, the number of organs procured from deceased donors and the number of transplants has increased substantially. Slovenia has reached a similar number of organ transplants from deceased donors per million inhabitants as member countries of the Eurotransplant association. At the same time the system was safe, reliable, transparent and properly regulated. Slovenia could therefore start negotiations for joining Eurotransplant. Even before the formal establishment of Slovenia-transplant, Slovenia became a full member of the aforementioned association.

eP31: Spontaneous miscarriages (SM) and association of PAI-1 gene polymorphisms in women

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INTRODUCTION: Miscarriage is the most common complication of pregnancy, which affects approximately 15% of all clinically recognized pregnancies and affects up to 5% of fertile couples. Plasminogen activator inhibitor 1 (PAI-1) is an inhibitor of fibrinolysis and it is closely related to embryonic development and pregnancy success.
OBJECTIVES: The objective of the study was to investigate the relationship between the PAI gene polymorphisms and SM in women.
AIMS: The aim of this study was to determine the frequency of the PAI-1 polymorphisms in women with SM and in healthy controls.
METHODS: 77 women were investigated for PAI-1 mutation at the Department of Haematology, University Hospital Centre Zagreb. In particular, 14 women with no miscarriages and no thromboembolism related to pregnancy were taken as a control group and 63 women with the history of miscarriages as a study group. The study group was divided in two groups, the first group with one miscarriage and the second with recurrent miscarriages (RM). For statistical analysis, results of the two groups were compared with the chi^2-test and post-hoc t-test.
RESULTS: The results have shown that in the study group, 57.14% of women were homozygous and 42.86% were heterozygous carriers of the PAI-1 gene, compared to the controls where this distribution was equal (42.86%). Also, PAI-1 homozygous genotype in women with RM was more frequent (65.00%) compared to PAI heterozygous (35%). There were no women without PAI-1 gene mutation in the group with RM compared to controls (14.28%) and it meets statistical significance ($p = 0.0183$). The difference was even more significant when we compared it to a study group ($p = 0.0033$). In RM, PAI-1 homozygotes were more frequent (65.00%) according to the control group (42.86%) but the difference was not statistically significant.
CONCLUSION: As PAI-1 polymorphism plays a key role in fibrinolysis, it seems that it has an important role in pregnancy. In our cohort, PAI-1 homozygotes have higher risk for SM, compared to the controls. The limitation of our study was a small sample size, but our results show the role of PAI-1 homozygotes in SM, so a larger cohort of women is needed for a definitive conclusion.

eP32: Attenuation of the Deleterious Course and Gastric Lesions after Bilateral Nephrectomy in Rats, NO-s

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INTRODUCTION: Chronic renal insufficiency might be associated with increased peptic ulcer presentation. OBJECTIVES: Bilateral Nephrectomy in Rats was used as way of proving the thesis.
AIMS: Recently, stable gastric pentadecapeptide BPC 157 (an antiulcer peptide tested in clinical trials, for inflammatory bowel disease and multiple sclerosis, effective against a variety of different ulcerogens), counteracted gastric lesions and other disturbances, after bilateral nephrectomy in rats. Now, we demonstrate that this effect might be NO-system related.
METHODS: Rats were subjected to bilateral nephrectomy, sacrificed either at 24h or 48h. Medication (/kg i.p.) BPC 157 (10μg, 10ng), L-arginine (100mg), L-NAME (5mg) alone and/or combined, was given immediately after nephrectomy. Assessment included gastric lesions, gross clinical presentation, urea, creatinine, AST, ALT, bilirubin, K, Na, Mg, Ca, inorganic phosphate, values in serum as described (Sikiric et al, Curr Pharm Des. 2014;20(7):1126-35) as well as brain lesion presentation, as described (Sikiric et al., Curr Neuropharm. 2015, in press).
RESULTS: Comparison of gastric lesions (means±SD, sum of the longest lesions diameters, mm) in the nephrectomized rats (10.5±1.5 (24h), 15.0±3.0 (48h)), revealed that the gastric lesions were either consistently attenuated (vs. *P

eP33: BPC 157 AFFECTS EATING BEHAVIOUR AND METABOLIC PARAMETERS AND LESION IN VARIOUS ORGANS IN LONG-TERM

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INTRODUCTION: BPC 157 has positive effect on treatment of several gastro intestinal conditions. In this study the effects of BPC 157 on eating behavior and metabolic parameters in normal rats and rats which had long-term drinking and food restriction will be tested.
OBJECTIVES: Mesure weight loss and lesions on multiple organs in different groups of rats.
AIMS: To examine effect of BPC 157 on eating behavior and metabolic parameters in cases of long-term alcohol drinking and food restrictions.
METHODS: Male adult rats were used. In one part of experiment metabolic functions of treated and non- treated rats were monitored. In other part of experiment BPC was administered daily IP (10μg/kg). One group was treated with saline and second group was treated with BPC 157. Both groups drank 20% alcohol and ate 5g food/rat/day. Body weight was daily monitored. After 30-41 days animals were sacrificed and lesions in stomach, heart, liver and brain were assessed. RESULTS: Rats treated with BPC 157 in first part of experiment showed lower energy expenditure and urine production than control group.In other part of experiment BPC 157 attenuated weight loss, stomach lesions, portal hypertension, tachycardia and mainly repolarization disturbances, brain lesions and brain edema.
CONCLUSION: BPC 157 treatment shows beneficial effects on attenuating effects of long-term alcohol drinking with food restriction. Probably by decreasing energy expenditure and its biological actions as a cytoprotection agent.

eP34: The Effect of Pentadecapeptide BPC 157 on Episcleral Vein Cauterization Model in Rats

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INTRODUCTION: Glaucoma is an irreversible optic nerve neuropathy.
OBJECTIVES: Rat episcleral vein cauterization model was used to prove the effects of BPC-157.
AIMS: This study aimed to evaluate the effect of BPC-157 on glaucoma-like features in the rat episcleral vein. METHODS: We used female Albino Wistar rats, 200g, randomly divided onto the treated and control groups. After application of Ketmine-HCl 50-60 mg/kg + Xylazine-HCl 5-10 mg/kg, Tetrakain 0,5% drops, two dorsal episcleral veins and one temporal episcleral vein were isolated from the surrounding tissues. A cautery was specifically applied to the selected vein. Early treatment rats received BPC-157 (10μg/kg) intraperitoneally immediately after surgery while delayed treatment received 24h later. Controls received an equivolume of 0.9%NaCl (5ml/kg) intraperitoneally. Intraocular pressure (IOP) (% of normal IOP), pupillar function were measured 24h and 48 hours after procedure. Non-invasive IOP measurements were taken after local application of Tetrakain 0,5%, by aplanation tonometer Tonopen XL in same time of a day. Pupillar function was photographed by USB Veho Discovery VMS-004 Deluxe microcamera. Photographs were taken before and after application of BPC 157 or saline and analyzed with special software bought with camera for measurement of pupillar diameter (r=mm), range (C=mm) and surface (S=mm2). Retinal changes alterations in vessel caliber and tortuosity, optic disc pallor and leakage of the retinal arterioles and venulas were observed and scored (Score 1-3). RESULTS: Early treatment. At 24 hours after surgery control rats exhibited the following values (r=1.3±0.1, C=7.3±0.4, S=6.0±0.2, IOP=135%). BPC-157 group values were: r=0.14±0.03, C=1±0.05, S=0.1±0.03, IOP=105%. Delayed treatment. At 24h all rats exhibited significant failure (presentation before treatment (r=1.4±0.2, C=8.3±0.3, S=7.0±0.4, IOP 135%) that equally persisted for next 24h till the 48h after surgery (r=1.4±0.2, C=8.3±0.3, S=7.0±0.4, IOP 135%). On the other hand, these were completely counteracted by subsequent administration of BPC-157 as evidenced in next 24 h, at 48h post-surgery (r=0.26±0.04. C=1.6±0.1. S=0.42±0.05, IOP=104%). In all BPC-157 treated animals Scored 1. Control animals Scored 2 or scored 3.
CONCLUSION: Pentadecapeptide BPC 157 used intraperitoneally counteracts the effects of episcleral vein cauterisation.

C10: Autosomal Alport Syndrome In Two Pediatric Patients Born With Similar Congenital Anomalies Of The Urinary tract - coincidence or genetic relationship yet unknown?

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INTRODUCTION: Alport syndrome (AS) is a glomerular disorder caused by mutations in COL4A3, COL4A4 or COL4A5 genes, encoding collagen type IV, a crucial component of basal membranes (BM) in kidneys, eyes and cochlea. Here, defective BM results in clinical manifestations of AS (progressive glomerular disease, sensorineural deafness, ocular abnormalities). Eighty percent of mutations involve COL4A5 and 20 % involve COL4A3 or COL4A4 genes with X-linked or autosomal (recessive or dominant) inheritance, respectively. Diagnosis is usually suspected in a hematuric child with family history of renal failure and deafness; however, definite diagnosis may require biopsy, either renal (RB) or skin, and/or molecular genetic testing. RB, usually postponed until proteinuria, is an invasive procedure requiring sedation, therefore genetic analysis is particularly important in pediatrics. We present two cases of pediatric patients with similar congenital anomalies of kidney and urinary tract (CAKUT) and autosomal AS.
CASE PRESENTATION: In both patients, fetal ultrasonography revealed hydronephrosis, megaureter and ureterocele with associated vesicoureteral reflux, which were surgically corrected (heminephroureterectomia) soon after birth, with subsequent kidney function monitoring. During the 14-year follow-up, both patients had persistent microhematuria. The boy had negative family history of kidney disease, but the girl's both parents had hematuria. At age 12, due to proteinuria, the boy underwent RB, revealing characteristic BM changes with absent α3 chains of collagen IV. Genetic testing revealed a complete, homozygotic deletion of the COL4A3 gene and no mutation in his parents. After 1-year persistence of hematuria in the girl, genetic analysis showed a heterozygotic mutation in COL4A4 (c.3532G>A in exon 38) and deletion in COL4A3 (c.2937_2945del in exon 35), each found in her mother and father, respectively. RB is planned in the future. During follow-up of both patients, literature review surfaced no information about a possible genetic relationship. The typical gene anomaly for this kind of CAKUT was not reported at all.
CONCLUSION: Autosomal inheritance is the less frequent cause for AS. Our two patients are interesting because of identical CAKUT presenting at birth. The connection between AS and urinary tract anomalies, observed in our report remains to be elucidated.

C11: Occasionally morning vomiting in preschool child: brain tumor or emotional reasons- the importance of good clinical judgment and multidisciplinary treatment

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INTRODUCTION: Pilocytic astrocytoma (PA) is the most common pediatric brain tumor in children. It grows slowly and has good long-term prognosis. It usually presents with signs of increased intracranial pressure: headache, vomiting, lethargy, or symptoms related to the tumor site. Magnetic resonance imaging (MRI) of the brain and spinal cord is an important imaging method for tumor visualization. Treatment depends on its localization, but complete resection of tumor is recommended. We report a girl with recurrent morning vomiting and minimal neurological abberation in whom after exclusion of gastroenterological causes, posterior fossa tumor – PA was diagnosed.
CASE: 5-year-old girl was hospitalized due to recurrent episodes of vomiting biliary content within 3 months. Episodes were preceded by abdominal pain and occured occasionally, in the morning, before leaving to kindergarten. She wasn't experiencing headache, weight loss or nocturnal symptoms. Due to the clinical aspect of strabismus, she was included in ophtalmologic follow-up under diagnoses: epicanthus, left upper eyelid ptosis, and astigmatism. Gastroenterological assessment excluded intestinal obstruction as a possible vomiting cause. Since girl had symptoms mainly on weekdays, she underwent psychiatric evaluation which revealed emotional immaturity. Taking into account patient history details of the morning vomiting and deviation in neurological status (awkwardness in the rough motor skills), neurological assessment was also done. Fundus examination, EEG and EEG after a sleepless night were normal. Given the perceived minimal neurological dysfunction and unclear vomiting etiology, the girl underwent MRI. It showed

extended tumor process in the left cerebellum hemisphere with solid cystic characteristics, measuring about 7x6x5 centimeters. It was pressuring brain stem and cerebellum, preventing the cerebrospinal fluid flow through the fourth ventricle and thus causing hydrocephalus. Soon she underwent surgery and complete resection of PA was done. Control MRI didn't show residues of tumor formation or hydrocephalus. There was no recurrence of symptoms.
CONCLUSION: Detailed medical history and clinical examination are fundamental for good clinical practice. Awareness of central involment in child with reccurent vomiting, after exclusion of intestinal obstruction is important.

C12: OSTEOID OSTEOMA AS A CAUSE OF REFERRED KNEE PAIN: A CASE REPORT.

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INTRODUCTION: Osteoid osteoma is a benign neoplasm most often seen in children and young adults. It represents 10 % of benign bone tumours and is most often located in the femur. Patients represent with severe and localised pain, characteristically worse at night and relieved by small amounts of nonsteroidal anti-inflammatory drugs. The diagnosis is based on imaging and patohistologic exam. Removal of the lesion is essential and currently is performed mainly with image-guided, minimally invasive techniques.
CASE PRESENTATION: We describe a case of a 4-year-old boy who presented to us with a 3-month history of nocturnal pain of the right knee and occasional limping. Physical examination revealed no pain and normal motion of the knees; however internal rotation of the right hip was limited and painful. Based on patient history and physical examination osteoid ostema was suspected. On radiograph round osteolitic lesion was found in the base of the femoral neck, surrounded by a zone of reactive sclerosis. SPECT and bone scintigraphy also confirmed the diagnosis of osteoid osteoma. The patient was operated in general anaesthesia with drill biopsy. Samples were sent to histological evaluation where the diagnosis of osteoid osteoma was confirmed. The pain disappeared immediately after the operation. At the 1-year follow-up, the patient was pain-free and there was no evidence of recurrence.
CONCLUSION: Conclusions: We would like to emphasize that osteoid osteoma of the proximal femur must be included in the differential diagnosis of nocturnal knee pain. The evaluation of the ipsilateral hip joint should never be overlooked. Specially in children where referred pain can be the cause of delayed diagnosis.

C13: CT ANGIOGRAPHIC EVALUATION OF AORTIC DISSECTION – DON'T MISS THE CORONARIES

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INTRODUCTION: Chest pain is common complaint of patients visiting emergency department (ED). About 15 % of those patients are diagnosed with acute coronary syndrome (ACS) although its presentation could be misleading. Serial ECG recordings, assessment of cardiac biomarkers and evaluation of regional wall motion are recommended to avoid unnecessary and often time consuming diagnostic imaging.
CASE PRESENTATION: 52 year-old smoker with exertional dyspnoea in last 4 months and untreated arterial hypertension presented to the ED with severe sharp chest pain radiating to left shoulder. Symptoms lasted for one hour. During ED stay the patient was stable, experiencing only mild chest pain, physical examination showed no abnormalities. ECG revealed only peaked T waves in anterior wall leads. Due to chest pain quality aortic dissection was suspected, therefore ECG gated computed tomography angiography (CTA) was performed. Aortic dissection and pulmonary embolism were ruled out, however inspection of coronary arteries revealed subtotal mid-LAD occlusion with poor opacification of apex, interventricular septum and mid and apical anterior wall. Second ECG was obtained immediately where STEMI of anterior wall was obvious. Patient underwent urgent coronary angiography, where percutaneous intervention of LAD occlusion with drug-eluting stent was performed.
DISCUSSION: In most patients with chest pain who require chest CTA, a dedicated examination using specific protocol to exclude either PE, aortic dissection or coronary artery disease is usually performed. Although triple-rule-out (TRO) CTA may exclude deadly causes of chest pain from all three pathologies at a same time, it is not a routine examination in our institution. TRO CTA is associ-

ated with higher radiation and contrast dose, especially when coronary angiography is necessary afterwards. Besides it poses some technical as well as interpretative challenges compared with a coronary CTA alone. Therefore, the TRO protocol should be limited to selected patients with atypical chest pain with reasonable pre-test probability for all three: ACS, pulmonary embolism and aortic dissection. Whenever CTA examination is performed to evaluate ascending aorta it is recommended to use ECG gated CTA to enhance visualisation of aortic wall as well as coronary arteries.

eP35: Celecoxib induced gastrointestinal, liver and brain lesions in rats,counteraction by stable gastric

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INTRODUCTION: With therapy with BPC 157 (known to inhibit nonselective NSAIDs- gastrointestinal, liver and brain-toxicity) and L-arginine, we attempted to discriminate the full complexity of lesions (gastrointestinal, liver, brain) after high dose celecoxib administration; the aggravation (that mimics attempt to relieve pain (i.e., selective NSAID as COX-2
inhibition) and NOS-blockade (L-NAME)) along with a possible therapy success and the mechanism(s) behind all of these phenomena.
OBJECTIVES: Administer celecoxib and monitor reactions of differently treated rats.
AIMS: We attempted to discriminate the full complexity of lesions (gastrointestinal, liver, brain) after high dose celecoxib administration; the aggravation (that mimics attempt to relieve pain (i.e., selective NSAID as COX-2 inhibition) and NOS-blockade (L-NAME)) along with a possible therapy success and the mechanism(s) behind all of these phenomena.
METHODS: Female Albino Wistar rats, 200-240g bw, were used in all of the experiments (7 rats per experimental group and interval), approved by the Local Ethics Committee. All rats were treated once, intraperitoneally (ip), and assessment was done 24h to 48h after drug administration.
RESULTS: Celecoxib (1g/kg bw ip) induced severe gastric lesions and less severe duodenal and intestinal lesions with gradual increase from 24h to 48h after administration, and sustained level of liver and brain lesions. All these lesions were aggravated by L-NAME (5 mg/kg bw ip immediately after celecoxib). As the needed proof of NO-system specific involvement, (L-arginine; L-NAME+L-arginine), L-arginine (100 mg/kg bw ip immediately after celecoxib) exhibited a limited beneficial effect (i.e., only after 48h) while L-NAME+L-arginine protocol turned down L-NAME-aggravation to the control-celecoxib presentation at both 24h and 48h period. Thus, L-arginine was consistently more active given together with L-NAME (thus, more against L-NAME, less against celecoxib, less against COX-2 inhibition, COX-2-inhibition remains mostly preserved). Contrary, given alone BPC 157 (10 μg, 10 ng/kg bw ip immediately after celecoxib) completely turned down lesions induced by celecoxib, both at 24h and 48h. Likewise, the same beneficial effect was consistently evident in all increasingly negative circumstances of celecoxib and L-NAME application and in all BPC 157-groups (L-arginine+BPC 157; L-NAME+BPC 157; L-NAME+L-arginine+BPC 157).
CONCLUSION: These findings evidenced that BPC 157 may equally counteract both COX-2 inhibition (celecoxib-noxious effect on all lesions counteracted) and additional NOS-blockade (celecoxib+L-NAME-noxious effect also equally counteracted).

eP36: Stable gastric pentadecapeptide BPC 157 as a likely antidote for the bupivacaine cardiotoxicity, a r

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INTRODUCTION: Up to date stable gastric pentadecapeptide BPC 157 showed cardioprotective lifesaving effect in chronic heart failure, in the lethal hyperkalemia and other arrhythmias. We used it to counteract bupivacaine overdose.
OBJECTIVES: The ECG abnormalities were observed in rats after bupivacaine toxic dose administration and counteracted by the BPC 157 administration.
AIMS: This study attempts to provide an alternative way to counteract bupivacaine-induced electrocardiographic changes with the stable gastric pentadecapeptide BPC 157.
METHODS: Rats received BPC 157 regimen (50μg, 10μg, 10ng, 10pg/kg ip) to counteract bupivacaine (100 mg/kg ip) before bupi-

vacaine, at 30 min, or after bupivacaine at 1 min. Likewise, after bupivacaine, at 6 min, after the established prolonged QRS interval (20ms), BPC 157 regimen (50μg, 10μg/kg ip) was given. Controls simultaneously received saline (5ml/kg ip).
RESULTS: The ECG abnormalities observed in rats after bupivacaine toxic dose were bradycardia, AV-block, ventricular ectopies, ventricular tachycardia, elevation of T-wave and asystolia. All the fatalities developed T-wave elevation, AV-block of the higher degree, respiratory arrest and asystolia. These were largely counteracted by the BPC 157 administration, when given immediately before or shortly after bupivacaine. When BPC 157 was given later, after the establishing of the prolonged QRS intervals, the fatal outcome was markedly postponed. Thereby, BPC 157 successfully both prevents and counteracts bupivacaine cardiotoxicity. Also, BPC 157 may act specifically against bupivacaine: BPC 157 exhibited a sustained activity (i.e., given prophylactically at 30 min before bupivacaine) and a rapid reversal (i.e., applied as a therapy, at 1 min post-bupivacaine or at 6 min post-bupivacaine at the time of the established prolonged QRS complex).
CONCLUSION: BPC 157 is efficacious against all of the bupivacaine conditions, even against the worst bupivacaine conditions such as the established prolonged QRS complex.

C14: A Neonate With Williams Syndrome Suffering Cardiac Death During Induction Of General Anesthesia: A Case report

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INTRODUCTION: Williams syndrome (WS) is a multi-systemic genetic disorder caused by 26-28 gene deletions on locus 7q11.23 with the elastin gene ELN being crucial for cardiovascular manifestations. Patients usually present with characteristic facial features, neuro-developmental disorders, cardiovascular anomalies, most commonly supravalvar aortic stenosis (SVAS) and hyper-calcaemia. Affected individuals are at greater risk for sudden cardiac death, especially in relation to anesthesia due to bilateral outflow tract obstruction or coronary arterial stenoses. As structural cardiovascular anomalies are present in roughly 80 % of patients with WS, many of them undergo diagnostic imaging or surgical treatment often requiring general anesthesia, further increasing the risk of severe hemodynamic complications.
CASE PRESENTATION: A 3 weeks-old neonate was admitted to our hospital for diagnostic cardiac catheterization. The patient was delivered after 40 weeks of gestation with emergency caesarean section due to abnormal cardiotocogram. Systolic murmur was detected after birth and echocardiography revealed SVAS, bilateral stenoses of pulmonary artery branches and biventricular hypertrophy, suggestive of WS. Family history was unremarkable. During follow-up, SVAS progressed and therefore cardiac catheterization was planned. After induction of general anesthesia in the catheterization laboratory, the patient developed sinus bradycardia and hypotension. Advanced resuscitative measures including extracorporeal life support were employed immediately. However, death occurred four hours later. Autopsy confirmed echocardiographic findings and additionally revealed both ostial and diffuse severe coronary artery stenoses and even occlusions. Furthermore, stenoses of brachiocephalic arteries were noted. Walls of systemic arteries were thickened. Molecular karyotypization using oligonucleotide microassays revealed a heterozygous deletion on locus 7q11.23 of 19±3.4 kb, including the ELN gene with exons 25-33, confirming WS.
CONCLUSION: Our findings demonstrate the difficulties in diagnostic workup of patients with WS which may arise due to the underlying cardiovascular anomalies, predisposing to severe hemodynamic instability in altered physiological settings such as general anesthesia.

C15: Bedside Lung Ultrasound – A Good Diagnostic Tool For Pneumonia In A Septic Patient: A Case Report

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INTRODUCTION: Patients with severe sepsis have high rates of mortality. Early diagnosis and treatment provide better outcomes. Diagnosis of the infectious focus within the first hour is important in selection of effective intravenous antimicrobials.The most common origin of infections that develop into sepsis is pneumonia. In addition to suggestive clinical and laboratory features, a demonstrable infiltrate by chest radiograph (CXR) is commonly required for the diagnosis of pneumonia. Recent studies show that lung ultrasound (LUS) is highly effective, perhaps even better than CXR in evaluating and differentiating pulmonary conditions such as pneumonia and cardiogenic pulmonary edema. We present a case of a patient with severe sepsis in whom the usual diagnostic modalities failed to discover the infectious focus; however, using LUS we discovered the patient had pneumonia.
CASE PRESENTATION: A 67 year-old patient with COPD and an artificial aortic valve was admitted to our emergency department (ED) complaining of weakness, fever, chills, and dyspnea, lasting for 3 days, with gradual worsening. On examination, she was ill-looking, somnolent and had difficulty talking. She was febrile, normotensive, with tachycardia, tachypnoea and had oxygen saturation of 88 on 100 % inhaled oxygen via non-rebreathing mask. Chest examination revealed inspiratory crackles in both basal lung fields with prolonged expiratory sounds. Laboratory tests suggested systemic inflammation with decreased kidney function. Arterial blood gas analysis revealed acute respiratory failure and acidosis. The CXR was unremarkable; however, bedside LUS revealed focal B lines and presence of subpleural lung consolidation in the right anterior lung area, confirming pneumonia, excluding pulmonary edema, and allowing for intensive fluid resuscitation and rational antibiotic selection.
CONCLUSION: Our case presentation illustrates the usefulness of bedside LUS in fast and accurate diagnosis of pneumonia in a septic patient where CXR was inconclusive. This bedside diagnostic tool is especially useful in the ED.

C16: The Short QT Syndrome: A Rare, Inheritable Channnelopathy Of The Heart Associated With Sudden Cardiac Death - a case report

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INTRODUCTION: The short QT syndrome (SQTS) is a rare inherited cardiac channelopathy, characterized by an abnormally short QT interval and increased risk for atrial and ventricular arrhythmias. Most commonly, it is defined as QTc≤ 330 ms, or QTc ≤ 360 ms and one or more of the following: history of cardiac arrest or syncope, family history of SCD at the age 40 or younger or a family history of SQTS. It is caused by mutations in genes encoding different cardiac ion channels. The available data suggest that patients are at risk throughout their lifetime, with a peak between the second and forth decades, and predominant occurrence in male population. Most frequent presenting symptoms are cardiac arrest (40%), palpitations (30%) and syncope (25%). Therapeutic options include implantation of cardioverter-defibrillator (ICD) or alternatively, pharmacological therapy by hydroquinidine or flecainide.
CASE PRESENTATION: A 16 year-old patient was referred to a paediatric cardiologist due to an episode of exercise-induced palpitations and syncope. Physical examination, echocardiogram and exercise stress-testing were unremarkable. The ECG revealed regular sinus rhythm at heart rate 61 bpm, peaked contour T waves with a dip in the ST segment at the beginning of the T wave and QT interval in any lead measuring less than 320 msec. Seven years earlier, his brother died suddenly during a football match. ECG analysis in all family members revealed QT interval measuring less than 320 ms, also in his 48-years-old mother and 7-years old sister. Genetic testing for SQTS1, SQTS2 and SQTS3 proved negative. The patient underwent ICD implantation, whereas his mother opted for no-treatment for her and her daughter. A 40-month-long follow-up history in all three patients was uneventful.
CONCLUSION: The SQTS is one of the primary cardiac electrical diseases associated with SCD. The diagnosis is based on the evaluation of symptoms, family history and ECG findings. Once diagnosed, a thorough clinical examination of all family members is mandatory to identify and treat those at risk for SCD. To our knowledge, this is, to date, the first family with SQTS identified in Slovenia.

eP37: LIGATION OF SUPERIOR MESENTERIC VEIN IN RAT.

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INTRODUCTION: Gastric pentadecapeptide BPC 157 that was proposed as therapy in ulcerative colitis might be also effective against the lesions after major vein obstruction. Recently, BPC 157 counteracts both increased portal pressure and intestinal ischemia/reperfusion injury after portal triad clamping in rats.
OBJECTIVES: After rat superior mesenteric vein (SMV) ligation, BPC 157 effect on vascular architecture and final lesions development was tested.
AIMS: To preserve the area of drainage of superior mesenteric vein (small intestine and caecum) from local ishemia METHODS: Anaesthetized rats were operated. Using microscope camera (Veho Discovery VMS-004 Deluxe USB) we directly visualized the arteries and veins and the vascular architecture affected by bleeding, vein congestion, arteries repelition and ramification throughout 30 minutes in small intestine, caecum and ascending colon before and after SMV ligation throughout 30 minutes (all scored from normal (no changes) to very intensive, 0-5) and determined the mucosal lesions severity (progressively scored 0-3) immediately after sacrifice. Testicular artery and vein (TAV), retroperitoneal blood vessels (RBV) presentation was scored (0-3) for collateral blood flow. BPC 157 10μg/saline (control) (/kg) were given as a 1ml bath to ligation area immediately after ligation. In addition, angiography was performed at 5 minutes after ligation. RESULTS: Controls presented immediately (Min/Med/Max): small intestine (lesions 3/3/3): (5min-15min-30min) progressive bleeding (0/0/0-2/2/3-2/2/3), vein congestion (2/2/2-3/3/4-3/3/4), arteries deteriorating repelition (0/0/0-0/0/0-0/0/0) and poor ramification (0/0/0-0/0/0-0/1/1); caecum (lesions 3/3/3): bleeding (2/2/3-3/3/3-3/3/3), vein congestion (3/3/4-4/4/5-4/5/5), deteriorating repelition of arteries (1/1/1-1/1/1-1/1/1) and ramification of arteries (1/1/1-1/2/2-2/2/2); ascending colon (lesions 3/3/3): progressing bleeding (0/0/0-0/0/0-0/1/1), vein congestion (2/2/3-4/4/4-4/4/5), arteries poor repelition (1/1/1-1/1/1-1/1/1) and ramification (0/1/1-0/0/0-0/0/0). By contrast, BPC 157 selectively presented: small intestine (lesions 1/1/1): decreased bleeding (0/0/0-1/1/1/-1/1/1), vein congestion (2/2/2-2/2/2-2/2/2), increased arteries repelition (3/3/3-3/3/4-3/3/4) and ramification (2/2/2-2/2/3-3/3/4); caecum (lesions 1/1/1): small bleeding (0/0/0-1/1/1/-1/1/1), vein congestion (1/1/1-2/2/2-2/2/2), increased arteries repelition (3/3/3-3/3/4-3/3/4) and ramification (4/4/4-4/4/4-4/4/5); ascending colon (lesions 1/1/1): bleeding (0/0/0-0/0/0-0/0/0), decreased vein congestion (1/1/1-1/1/1-2/2/2), arteries repelition (0/0/0-1/1/1-2/2/2) and ramification (0/0/0-0/0/0-1/1/1) ($P \leq 0.05$, at least vs. control).
CONCLUSION: BPC 157 counteracted SMV ligation deleterious course. Accordingly, TAV and RBV RBV were continuously more expressed (3/3/3 (BPC 157) vs. 0/0/1 (controls)) and angiography demonstrated in BPC 157-rats collateral circulation via TAV and RBV.

W1: **Basic Principles Of Wound Management**

Authors: Dušan Rašić, Mario Rašić, Ivan Rogić, Jeronim Romić, Hrvoje Smojver, Tea Premužić, Zrinka Planinić

Mentor: Andro Košec MD, University Hospital Centre "Sisters od Mercy"

A wound is an injury usually resulting in disruption of normal architecture and function of skin and/or tissues. Most wound classifications distinguish between open and closed wounds. An open wound is one of the most common reasons for emergency visits thus implying that knowledge of proper wound management is essential to every medical practitioner.

Objective of this workshop is to introduce participants to appropriate procedure when meeting a patient with an open wound and to familiarize participants with suturing equipment. The course will present the evidence-based approach to acute open wound management and will consist of basic principles in the following order:

- history taking - age of wound, location, cause, tetanus prophylaxis, anesthesia contraindications
- skin preparation and wound toilet – sterile saline, gazes, preparation of the operating field
- administration of local anesthesia – infiltrative and topical
- suturing equipment – needleholders, threads (attendees will learn about sizes and types of threads and needles, suggested size and duration of intended sutures and removal of sutures), tweezers
- wound closure for simple open wounds – techniques depending on the location and type of wound (simple interrupted suture, simple running suture, vertical mattress suture)

Attendees will also learn of risk factors for delayed closure, infections (signs and symptoms), chronic wounds and follow-up advices.

W2: **Spirometry - Clinical Application**

Authors: Uršula Fabijanić, Luka Filipović-Grčić

Mentors: Marko Jakopović MD, PhD; Bojana Butorac Petanjek MD, University Hospital Centre Zagreb

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Attendees will also learn of risk factors for delayed closure, infections (signs and symptoms), chronic wounds and follow-up advices.

w3: **Emergency Medicine Workshop**

Authors: Borna Ćutić, Melita Brajčinović, Filip Lončarić, Lucija Lauc, Vid Matišić, Ive Miletić, Matea Turudić, Karlo Uroda, Sandro Zurak MD

Mentor: Monika Tomas, University of Zagreb School of Medicine

Emergency Medicine is the field of practice concerned with assessment, stabilization and diagnosis of unscheduled patients with potentially serious acute illnesses or injuries that require immediate medical attention. The emergency physician requires a broad field of knowledge and is to be well trained in advanced procedural skills. The aim of this workshop is to provide the participants with essential skills needed in emergency medicine and the opportunity to practice under instructor guidance. Participants will be assigned in specific groups in which they will learn different segments of on-site emergency care through different scenarios.

They will learn to assess someone's vital signs, practice cardiopulmonary resuscitation with and without the use of an AED, thus becoming proficient in basic life support and learning the importance of early patient defibrillation.
Airway management is the first and most important step in any form of resuscitation or life support. Participants will practice airway assessment on mannequins and learn how to secure it correctly using an oropharyngeal airway, "i-gel", etc., depending on the patient's condition. They will also learn the Bag-Valve-Mask ventilation technique.

Correct, yet fast assessment of a critical patient will be performed by using the ABCDE mnemonic. Airway, breathing, circulation, disability and exposure are key segments in the initial patient status assessment. Initial treatment in each of the above-mentioned segments is crucial in achieving clinical improvement which buys time for further treatment and diagnostics.

Participants will work in a team with different roles in different scenarios (doctor, medical technician, ambulance driver). A simulated crash site will be used to examine an injured person following the ABCDE rule. Questions about when and how to remove a motorcycle helmet from an injured person's head, and how to properly immobilize the patient for transport will be answered.

Different victim extrication techniques: without any devices, with spinal board or KED (Kendrick extrication device) will be learned.

w4: **ECG workshop**

Authors: Gloria Bagadur MD, Jasmina Hranjec, Jelena Andrić, Filip Medić

Mentor: Nina Jakuš, MD, University Hospital Centre Zagreb

ECG workshop is a workshop where, in cooperation with cardiologists or cardiology residents, we endeavour to bring closer and educate medical students on the basics of reading ECGs, distinguishing normal, variant of normal and basic forms of pathological ECG findings the practical approach. The aim of the workshop is to facilitate the students to understand the ECG findings and present them many different ECG findings.

The very structure of the workshop consists of an introductory lecture, in which the students are given instruction of the basics of reading ECG findings, and for each part of the process of ECG reading a theoretical foundation with practical examples.
The second part of the workshop consists of almost individual work with students, who are divided into small groups guided by ECG instructors. In the groups, each of the students analyzes the ECG's independently or with the help of an instructor, and later within the group they discuss about ECG findings.

ECG workshops have always striked a great interest among students, who come very happy to the workshops and leave them enriched with new knowledge and experience, essential for their future career.

w5: **Ultrasound workshop**

Authors: Petra Radić, Marija Ćačić, Ivana Bureš, Maša Alfirević

Mentor: Dora Fabijanović MD, University Hospital Centre Zagreb

Ultrasound workshop is a workshop in which we try to bring closer the technique of ultrasound in daily practice to medical students. Ultrasound today is a fast and secure method of orientation on the condition of patients in any medical specialty, and for this reason we believe that all medical students should be able to use basic knowledge of ultrasound whatever they will deal with in the future. The idea of our workshop is to first have a quick theoretical repetition of ultrasound, led by some of our doctors who use every day ultrasound in their work. In the first part of the workshop, doctor explains the basics of working with ultrasound, route of administration, the selection of probes or images.

Afterwards, comes the important practical part of the workshop where students learn how to use ultrasound. The number of available ultrasound devices will be four, which means we will have four different stations where students will use ultrasound to examine certain organs on models. We will have an overview of the heart, kidney, abdominal organs and biopsy of blood vessels under the control of ultrasound.

We understand that the practice is what students are lacking the most and is something what they want to do, and this is testified by the great popularity of this workshop. As it has been emphasized many times, regardless of the future specialization, knowledge of the use of ultrasound is one of the qualities and skills that will make us all better doctors.

w6: **Clinical Examination In Orthopaedics**

Authors: Branimira Zujić, Jeronim Romić, Sven Samošćanec

Mentors: Mario Josipović MD, Ivan Bohaček MD, PhD, University Hospital Centre Zagreb

The main goal of this workshop is to introduce participants to basic skills and parts of the clinical examination in orthopaedics, with the concentration on three big joints of our musculoskeletal system: hip, knee and shoulder. This workoshop, named „Clinical examination in orthopaedics“ , will be divided into 3 parts and lead by two mentors supervising and demonstrating to participants who will be practicing on our models.

At the begining of the workshop, participants will revise the basic anatomy of the hip, knee and shoulder, using pictures, plastic models, and our human models. After revising the most important structures for examination: bones, ligaments and tendons; as well as basic moves in each joint, mentors will explain parts in every orthopaedic examination, starting with inspection. They will show few tests for each of three big joints.

The first part of workshop will be dedicated to the knee joint, and tests for knee arthrosis, meniscal tears, cruciate ligaments, knee joint instability, collateral ligaments , etc. will be demonstrated. Participants will be divided into 2 groups and they will be practicing on our human models, under the supervision of mentors. After applying their skills of examination, they will have the opportunity to see x-rays, MRIs and CTs of some of the most common pathologies in orthopaedics, which can be proofed with tests previously demonstrated.

The same schedule will be applied on shoulder and knee joint.

After examination, mentors will briefly explain the best treatement for each condition earlier shown.

w7: **Abdominal Pain In Children**

Authors: Anja Martić, Hana Matković, Matea Melša

Mentor: Lana Omerza MD, University Hospital Centre Zagreb

Abdominal pain in children has always presented a diagnostic dilemma for the paediatricians. Cause of that lays in the fact that many cases of abdominal pain are benign, but on the other side, some require rapid diagnosis and treatment to minimize morbidity. Disorders such as appendicitis, gastroenteritis, constipation, intestinal obstruction and many others cause abdominal pain and all of them should be taken under consideration when there is a child in pain in front of us. Age of the child is a key factor in evaluating the cause; the incidence and symptoms of different conditions vary greatly over the paediatric age spectrum.

Anamnesis and clinical examination are extremely important and with the help of some diagnostic procedures can help the physician to differentiate benign abdominal pain from causes where there is a need of emergency treatment, such as acute abdomen.
The goal of this workshop is to help students learn how to recognize and differentiate some of the most common causes of abdominal pain in children. In this workshop we are going to talk about signs, symptoms and laboratory findings that can help a physician in diagnostic procedure. After a short introduction into the subject students are going to be divided into groups and, with mentor helping them, try to solve clinical cases considering abdominal pain in children. When students offer their plan of diagnostic procedure and possible diagnosis, we will all discuss every case together with the mentor, Lana Omerza, MD.

Our goal is that every student leaves the workshop with some new information, knowing how to approach a child with abdominal pain.

w8: **Differential Blood Count In Children**

Authors: Matea Melša, Hana Matković, Anja Martić

Mentor: Maja Pavlović MD, University Hospital Centre Zagreb

The goal of this workshop is to determine quantitative and qualitative meaning of particular components in differential blood count in paediatrics and its significance in everyday clinical practice.

The first, theoretical part of the workshop will be mostly focused on identification of the components of the complete blood count (CBC) and differential blood count and their clinical implications, including identification of normal paediatric laboratory parameters, as well as the clinical implications for deviations from normal. For example, clinical implications for an increased and decreased white blood cells (infection, tissue necrosis, bone marrow malignancies, inflammation, medications), clinical implications for increased neutrophils (neutrophilia) and decreased neutrophils (neutropenia) (bacterial vs. viral infections, some inflammatory conditions, tissue damage, malignancies of the bone marrow, medications), meaning and significance of "left and right shift", clinical implications for increased and decreased haemoglobin (congenital heart disease, chronic hypoxia, high altitudes, polycythaemia vera, renal disease, haematological conditions involving RBC destruction, iron deficiency, vitamin B12 deficiency, blood loss/haemorrhage, bone marrow suppression), clinical implication for increased and decreased platelets and others.

Additionally, students will be explained how to identify normal paediatric laboratory parameters for the absolute neutrophil count (ANC) as well as the clinical implications for deviations from normal.

After the first part, students will be divided into small groups in order to apply principles of paediatric CBC and differential interpretation to clinical practice scenarios. Afterwards, we will verbally analyse all practice scenarios together with the students and the mentor, followed by case examples from clinical practice of the mentor, Maja Pavlović, MD.

w9: **Basic Surgical Suturing Workshop**

Authors: Branimira Zujić, Ema Čaušić, Antonio Bejić, Kristina Hendija, Ante Rebić

Mentor: Andro Košec MD, University Hospital Centre "Sisters od Mercy"

The main goals of the Basic Surgical Suturing Workshop are to: introduce participants to surgical instruments and their proper use (scalpels, surgical Pinzette, forceps); introduce participants with different types of threads and needles (different materials of threads, different shapes of needles and their indications); introduce participants to basic surgical sutures (eg.. basic square knot, simple interrupted stitch, vertical mattress stitch).
Basic Surgical Suturing Workshop is separated into 3 parts:

1. Each participant will get his/her own wooden station to practice surgical knots (basic square knot) only with their hands. The mentor will explain the meaning and the use of knots in surgery.
2. Different types of threads and different shapes of needles will be presented, together with explanation of their use. Afterwards, the mentor will demonstrate how to properly hold surgical instruments, and how to make simple interrupted stitch and vertical mattress stitch. Each participant will get his/her own surgical instruments to practice surgical suturing. They will practice on a pig's trotters. Firstly, they will use scalpels to make a cut on a pig's trotter, and after that, with men tor's help, they will practice those basic surgical sutures.
3. After practicing stitches, participants will be introduced with the basic removal of surgical sutures. They will get surgical scissors and take out all stitches they made.

w10: **How to Become the Master of the Disaster**

Authors: Jozo Schmuch, Hana Lučev

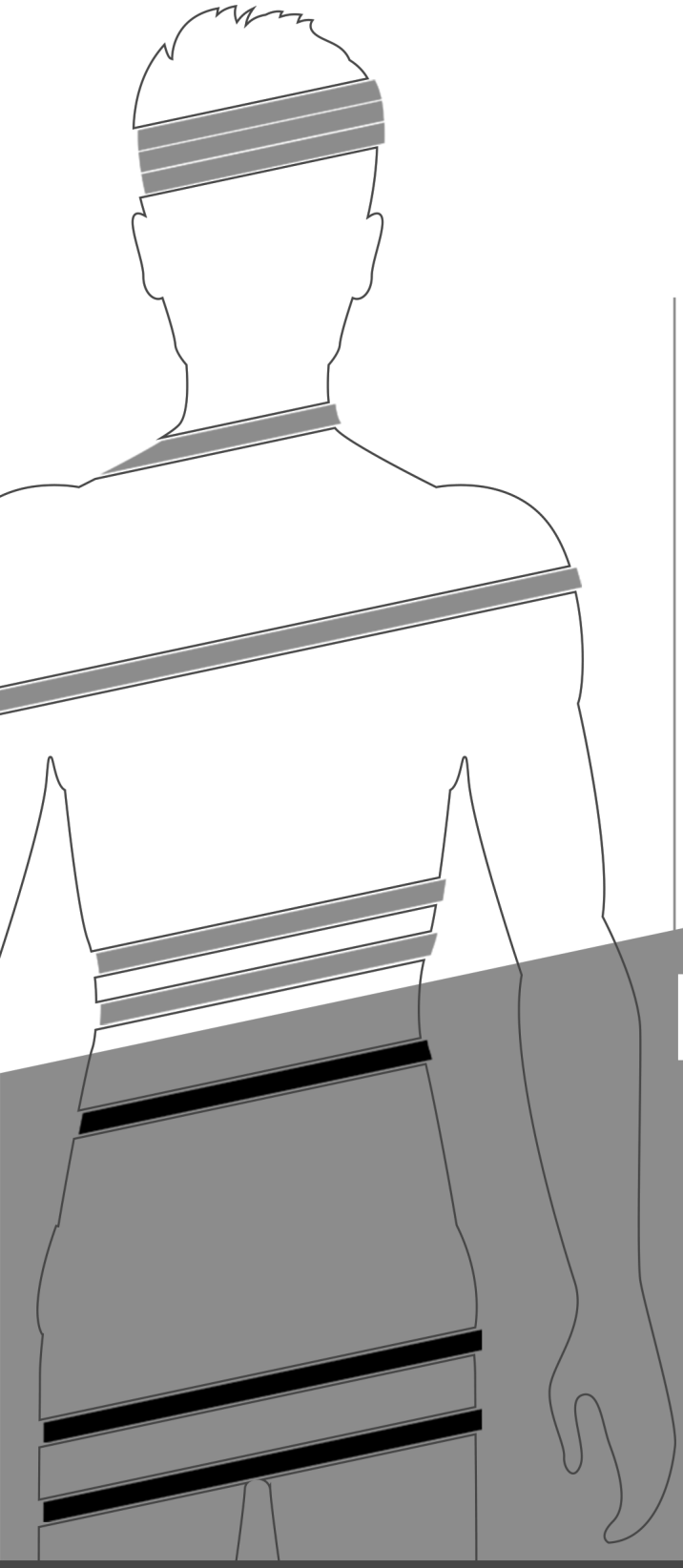
Mentor: Karim M. Abdeltawab, International Federation of Medical Students Associations

In modern world we are faced with the increasing number of natural and manmade disasters. Between 1994 and 2013, EM-DAT recorded 6,873 natural disasters worldwide, which claimed 1.35 million lives or almost 68,000 lives on average each year. In addition, 218 million people were affected by natural disasters on average per annum during this 20-year period.

In this workshop we will explain all the necessary terminology to understand managing of a disaster, work on the steps that can be taken to avoid disasters and reduce an effect on human life. We'll explain a difference between man induced disaster and a natural disaster, with special remarks to the recent flooding that happened in Croatia. Participants will have a chance to talk about the Public Health side of a disastrous situation as well as what a medical practitioner should do when faced with such situation. Through a fun and educational stimulation participants will have a chance to try themselves in crisis management and work on their teamwork skills to successfully solve issues they are faced with.

The main outcomes of the workshop are:

- Basic understanding of the disaster risk management from both medical and Public Health perspective.
- Better overview of a role of medical practitioners in disastrous situation.
- Overview of the ethical questions that arise from a disastrous situation.



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