SYMPOSIUM

Pharmacogenomics and Personalised Medicine

AIM AND MAIN TOPICS OF SYMPOSIUM

Pharmacogenomics is an important part of personalized medicine, and is also pertinent in understanding drug interactions especially in cases of polypharmacy.

The potential consequences of genetic variants in drug response are numerous and include the prolongation and amplification of a pharmacological effect; drug toxicity and development of side effects; absence of prodrug activation; lack of efficacy with the recommended doses and the need for higher doses; activation of alternative and harmful biochemical pathways; drug interactions.

Considering these reasons, it is important to know the patient's metabolic / phenotypic status, especially in the case of drugs with a narrow therapeutic range. Pharmacogenetic data are also increasingly important in evaluating the efficacy and safety of drugs in the regulatory approval process, and the number of drugs containing pharmacogenetic information in the SmPCs is increasing.

There has been a steady increase worldwide in pharmacogenetic testing in clinical practice with the aim of optimizing therapy, reducing the number of side effects and unnecessary medical costs to manage them. Such approach will allow the findings of pharmacogenetics/ pharmacogenomics to be successfully translated to clinical practice and lead to individualized approach for different patient groups. This will significantly improve the safety of medications use.

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AIM AND MAIN TOPICS OF SYMPOSIUM

In Bosnia and Herzegovina, the use of pharmacogenetic tests in clinical practice is negligible, and initial efforts are needed to demonstrate its importance in personalized medicine, which is certainly the future of adequate patient therapy.

The aim of this training is to raise awareness of the importance of pharmacogenetics and personalized medicine, and is intended for academic staff in life and biomedical sciences, clinicians, as well as students from all over Bosnia and Herzegovina and the region. Experts from Europe engaged in the field of pharmacogenetics and personalized therapy for many years, together with experts from Bosnia and Herzegovina and the region, will outline the most important information and discuss future steps in the development of personalized medicine.

It is also an ideal opportunity for networking and potential future collaboration of mentioned experts. This will open up new opportunities for application for joint research projects, as well as provide students with new ideas in their further professional development.

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Organization Committee

Adlija Čaušević

President of The Association of Biochemisty and Molecular Biologists in Bosnia and Herzegovina

Prof.dr Adlija Čaušević,former dean of The Faculty of Pharmacy, University of Sarajevo,president of The Association of biochemisty and molecular biologists in Bosnia and Herzegovina is first elected professor of Clinical biochemistry at the same Faculty and University. Her professional and scientific work during all phases of her career was devoted to firm establishement of clinical biochemistry as a discipline within te framework of new educational courses(both undergraduate and postgraduate programmes),as well as in development of specialized postgraduate study programmes in the field of Medical biochemistry and General biochemistry.
In different phases of her career she was interested at first in biological effects of microwave irradiation,especially in the process of neurotransmission and serotonin metabolism.Through these studies,she developped her neurochemistry scientific skills, where later on her special interest was Brain tumors.On these projects, she worked at University Mc GILL, Montreal , Canada.
Being aware of the postwar situation in Bosnia and Hertzegovina and lack of funding for the type of projects she was interested in, her research focuss switched to the field of Biomarkers of diabetes, prediabetes and metabolic syndrome. Her current reasearch interests are related to molecular basis of diabetes, prediabetes and metabolic syndrome and identification of novel biomarkers that can be used in diagnostics and monitoring of these common diseases. This type of research is compatible with her research in the field of pharmacogenetics, related to optimal, personalized therapy,where ethical principles established in these disciplines are strictly followed.

Radivoj Jadrić

Secretary of The Association of Biochemisty and Molecular Biologists in Bosnia and Herzegovina

Radivoj Jadrić, M.D., D. Sc., a Specialist in Medical Biochemistry, was born on July 16th, 1966 in Sarajevo, where he graduated from primary and secondary school, and the Faculty of Medicine. During the war in Bosnia and Herzegovina, he was hired as a doctor of Army of Republic of Bosnia and Herzegovina, for what he received the municipal award "Zahvalnica sa zlatnim ljiljanima" from the municipality of Centar, Sarajevo. In the period of 1991 - 2021, he underwent scientific and professional training in the country and abroad, with academic advancement to Full professor. In the period 2007 - 2017 he was Head of Departement of Medical Biochemistry, Faculty of Medicine, University of Sarajevo. Besides engagement in high school and higher education teaching process on all cycles (I, II and III cycle, Universities of Sarajevo, Mostar and Tuzla), he was a member of scientific and professional commissions (Sarajevo, Mostar), and at the level of the Ministries of Health (Sarajevo Canton Ministry of Health, Federal Ministry of Health of FBiH), participating in a number of successfully implemented domestic and international projects, and is a member of scientific and professional associations (Association of Biochemists and Molecular Biologists in Bosnia and Herzegovina - Secretary of the Association; Association of Medical Biochemists in Bosnia and Herzegovina - Vice President of the Association).

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Tamer Bego

FEBS Educational Ambassador for Bosnia and Herzegovina

He received his MSc in Genetics and PhD in Pharmaceutical Sciences and specialised in Medical Biochemistry. He won several fellowships for research stays at the institutions abroad, including Faculty of Pharmacy, University of Ljubljana, Faculty of Pharmacy, University of Belgrade, University Hospital of Charles University in Hradec Kralove and Faculty of Pharmacy, University of Porto.

In addition to studying the molecular mechanisms and influence of candidate genes in the pathophysiology of type 2 diabetes, obesity and the metabolic syndrome, his research is also related to the study of the most important biomarkers for the early detection of these diseases, as well as their association with inflammation and oxidative stress. Also, one part of the research is based on the analysis of genetic variants that are relevant for personalized therapy and medicine. He participated in a part of the project in which he analyzed the influence of microRNAs on the expression of genes involved and the pathophysiology of osteoporosis.

He is a coordinator of a consortium in Erasmus + Capacity Building in the field of Higher Education project named: „Innovating quality assessment tools for pharmacy studies in Bosnia and Herzegovina – IQPharm". He is an active member of associations whose most important goals are the promotion of scientific and professional fields within medical biochemistry and molecular diagnostics as well as biomedical engineering. He is the Vice President of the Society for Medical and Biological Engineering of Bosnia and Herzegovina, and since 2019 he has also held a significant position as FEBS Educational Ambassador for Bosnia and Herzegovina.

Tanja Dujić

Active member of The Association of Biochemisty and Molecular Biologists in Bosnia and Herzegovina

Tanja Dujić is an Associate Professor of Drug Biochemistry at the Faculty of Pharmacy University of Sarajevo. She received her MSc and PhD in Pharmaceutical Sciences and specialised in Clinical Pharmacy. She won several fellowships for research stays at the institutions abroad, including Faculty of Pharmacy, University of Ljubljana, and the School of Medicine, University of Dundee, United Kingdom, where she completed her postdoctoral training. Assoc. Prof. Dujić is the Head of the Department of Biochemistry and Clinical Analysis and the Head of the Research Centre at the Faculty of Pharmacy University of Sarajevo. She has been awarded several prizes for her research, including Danubius Young Scientist Award for the best young scientist in Bosnia and Herzegovina in 2016, and the grant Wellcome Trust Seed Award in Science in 2018. The focus of her research is the role of genetic variations, as well as drug-drug and drug-drug-gene interactions in drug efficacy and safety, particularly in type 2 diabetes.

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Invited speakers

Jerka Dumić

University of Zagreb, Faculty of Pharmacy and Biochemistry, Zagreb, Croatia

Jerka Dumić is Professor of Biochemistry and Immunology at the University of Zagreb Faculty of Pharmacy and Biochemistry. She has received her MSc in Medical Biochemistry in 1992 and PhD in 2000. She was visiting scientist/professor at Johns Hopkins University, Baltimore, MD, USA University of Ljubljana, La Sapienza University, Rome, Charles University, Prague, Ege University Izmir and Izmir University of Economics. Professor Dumić served as a Head of the Department of Biochemistry and Molecular Biology (2012-2017) and the Dean of the Faculty of Pharmacy and Biochemistry University of Zagreb (2014-2016). Her scientific activities, focused on glycoimmunobiology, identification of novel biomarkers of diagnostic/prognostic significance and molecular mechanisms of drug action were reflected in more than 50 scientific publications in peer-reviewed journals. She was a co-ordinator of the CEEPUS Exchange Network (2011-2015). J. Dumić served as a Secretary General (2001-2007) and President (2009-2013, 2019-2021) of the Croatian Society of Biochemistry and Molecular Biology. Since 2017, she serves as a Chair of the FEBS Working Group of Integration and a Member of the FEBS Executive Committee. Jerka Dumić received the National Award for Young Scientist for 2001.

Matthias Schwab

Dr Margarete Fischer-Bosch Institute of Clinical Pharmacology, Stuttgart, Germany

Professor Matthias Schwab studied medicine followed by fellowships in Children's Medicine and Clinical Pharmacology with board certifications for both disciplines. Since 2007 he is Director of the Dept. of Clinical Pharmacology, University Hospital Tuebingen, and the Dr. Margarete Fischer-Bosch- Institute of Clinical Pharmacology, Stuttgart, Germany. He participated in and/or coordinated a number of national/international research networks (e.g., EU-ITN, EU-IMIs, EU-Horizon2020, BMBF). Moreover, he is member of several committees (e.g. Germ. Nat. Academy of Sci. Leopoldina, Germ. Academy of Sci. and Literature, Mainz), and received numerous awards (e.g. Galenus von Pergamon Award, the Robert-Pfleger Research Award). His scientific accomplishments resulted in > 350 peer reviewed publications (HI 88), and he is listed as Clarivate Highly Cited Researcher. He is Editor-in-Chief of Pharmacogenetics & Genomics and Section Editor of Genome Medicine.

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Andrzej Kochański

Mossakowski Medical Research Institute Polish Academy of Sciences, Warsaw, Poland

Professor Andrzej Kochański, M.D. Ph.D. is a specialist in clinical and laboratory genetics, Professor at the Mossakowski Medical Research Institute Polish Academy of Sciences in Warsaw and Head of the Neuromuscular Unit. His research is focused on the molecular basis of neuromuscular disorders. Since 2013, he is an expert of the Team for Bioethics of the Polish Episcopal Conference. Since 2019, he serves as a National consultant for clinical genetics.

Timur Cerić

Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Timur Ceric MD PhD is medical oncologist working in Clinical Centre Sarajevo University. He is Head of Outpatient Unit of Oncology Department. He is also Associate Professor of Oncology at the Medical School Sarajevo. He is currently enrolled in multiple clinical trials and projects on breast, lung and urological cancers. From the very beginning of his scientific work he was engaged in work on precision medicine and did one of the first translational studies in oncology in BH and region on DPYD 2A mutation of Dihydro Pyrimidine Dehydrogenase enzyme that could be involved in toxicity of 5FU. He is also involved in study of circulating tumor cells in breast cancer in patients in Bosnia and Herzegovina and its implications in cancer therapy.

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Marin Jukić

University of Belgrade, Faculty of Pharmacy, Belgrade, Serbia

Dr. Marin Jukić earned his MSc degree in pharmacy at the University of Belgrade-Faculty of Pharmacy, Serbia and his PhD at Ben Gurion University – Faculty of Medicine, Israel. Marin Jukić was a teaching assistant for histology at Ben Gurion University – Faculty of Medicine from October 2011 to October 2014. Marin Jukić was employed as a postdoctoral scientist, teaching assistant, and lecturer at the Medical School at Karolinska Institute, Stockholm, Sweden from November 2014. Marin Jukić is currently employed at the University of Belgrade – Faculty of Pharmacy as an assistant professor and at Karolinska Institute as a senior scientist. His research is focused on brain development, monaminergic neurotransmission, as well as on genetics, epidemiology, clinical properties, and treatment of affective disorders.

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