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Medical Biochemists of Serbia*

XIX NATIONAL CONGRESS OF MEDICAL BIOCHEMISTRY AND LABORATORY MEDICINE

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The National Congress of the Society of Medical Biochemists of Serbia (SMBS) is a biannual meeting, organized this year on September 9–13, and it included the 10th EFLM Symposium for Balkan Region (September 11–12). The Congress was organized for the 19th time by the Society of Medical Biochemists of Serbia, Faculty of Pharmacy University of Belgrade, and Center for Medical Biochemistry Clinical Center of Serbia, and under the auspices of the International Federation of Clinical Chemistry (IFCC), European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), and Balkan Clinical Laboratory Federation (BCLF), as well as the Ministry of Education, Science and Technological Development, and Ministry of Health of Republic of Serbia. During the Opening Ceremony dr Bernard Gouget addressed to the participants on behalf of the IFCC, and Professor Grazyna Sypniewska on behalf of Professor Mauro Panthegini, EFLM President. Opening Ceremony was continued with the presentation of the SMBS' Foundation »Magistra Milica Marković«. Milka Golubović, president of the Magistra Milica Fund together with Olga Stefanović granded to the Dr Ivan Sretenović, director of Health Department Barajevo one Hematological Analyzer for Clinician-Biochemical Laboratory and Fund Diploma, as well as thanks certificate to Vicor Company. Branko Pavlović, student of the Pharmaceutical Faculty presented the activities of the Belgrade Pharmacy Student Organization.

Five Congress sessions were held, dedicated to the most recent findings and the application of models of management medical-biochemical laboratories focused on the patient, improving patient outcomes through the use of biomarkers and clinically effective strategy utilization of laboratory tests. Opening lecture announced this program in the best possible way, when professor Zbigniew Gaciong (Department of Internal Medicine, Hypertension and Vascular

Diseases, Medical University of Warsaw, Poland) reviewed the concept of personalized health care and modern laboratory technologies upon it is based. The first session was dealing with genetic and non-genetic risk factors and biomarkers of atherosclerosis. Professor Darko Černe (Department of Clinical Biochemistry, Faculty of Pharmacy, University of Ljubljana, Slovenia) opened the session with his talk about cathepsin S and its association with a more atherogenic LDL subclass profile, suggesting a new mechanism of cathepsin S mediated atherogenesis. The following lectures presented novel aspects of atherosclerosis development and biomarkers, through results of the research group of the Department of Medical Biochemistry of the Faculty of Pharmacy, University of Belgrade. Assistant professor Jelena Vekić talked about significance of low-density and high-density lipoprotein subfractions determination in the assessment of cardiovascular disease risk for the timely prevention of development and adverse outcome of the disease. Results of the study of longitudinal changes in lipid profile parameters, oxidative stress status and markers of inflammation through normal pregnancy, presented by assistant professor Aleksandra Stefanović, indicated that pregnancy is characterized by intense inflammatory process and impaired lipid metabolism. About the clinical significance of gene expression analysis in human blood, through the results of the study that examined the influence of physical activity on SOD isoenzymes' gene expression levels in athletes' lymphocytes, talked assistant professor Ana Ninić. The session was closed with the way of economic evaluation of new biomarkers, the cost-effectiveness analysis, constructed to identify laboratory procedures or diagnostic markers of the greatest health care benefit with the resources available, presented by the associate professor Nataša Bogavac-Stanojević. The congress



Presidents of Organising and Scientific Committee: Z. Šumarac, N. Majkić-Singh, S. Ignjatović



Dr Bernard Gouget addresses the Congress participants on behalf of the IFCC



Professor Grazyna Sypniewska addresses the Congress participants on behalf of the EFLM



Milka Golubović present the Fund Diploma to Olga Stefanović from Vicor Company



Olga Stefanović present the award to dr Ivan Sretenović, director of the Barajevo Health Department



Representatives of the Fund »Magistra Milica Marković« during XIX Congress of Medical Biochemists of Serbia with dr Ivan Sretenović and members from Vicor Company (from left to right: M. Panjković, Z. Šumarac, M. Golubović, I. Sretenović, N. Majkić-Singh, Z. Vujić, V. Mitrović)



Branko Pavlović, chair of TMB section of Belgrade Pharmacy Student Association addresses to the Congress participants



Professor Zbigniew Gaciong presented the Opening Lecture

continued with the second session dedicated to molecular basis and practical considerations of biomarkers of cardiovascular disease. Professor Zorana Vasiljević (Faculty of Medicine, University of Belgrade) overviewed the significance of cardiac markers in cardiovascular disease guidelines and algorithms, emphasizing the indispensable place of cardiac troponin, D-dimer and BNP and proBNP. The review of the evaluation process of new biomarkers from research to routine clinical practice through the example of some new circulating biomarkers of cardiovascular diseases – GDF-15, ST2 and galectin-3, was presented by professor Grazyna Sypniewska (Department of Laboratory Medicine, Collegium Medicum, Nicolaus Copernicus University, Bydgoszcz, Poland). Finally, dr Sanja Stanković (Center for Medical Biochemistry, Clinical Center of Serbia, Belgrade, Serbia) closed the session with the talk about the current challenges and future research in the field of genetics and epigenetics of heart failure. The following session was dedicated to the organization of medical-biochemical laboratories. The current issues in this field were considered first through the lecture about pits and pitfalls of manufacturer declarations, presented by dr Nora Nikola (University Department of Chemistry, Medical School University Hospital Sestre Milosrdnice, Zagreb, Croatia). The problem of prevention occupational bloodborne infections in healthcare workers and post-exposure prophylaxis was discussed in the lecture of dr Zorica Šumarac (Center for Medical Biochemistry, Clinical Center of Serbia, Belgrade, Serbia). Dr Mirjana Djerić (Clinical Center of Vojvodina, Center for Laboratory Medicine, Medical Faculty Novi Sad, Serbia) reminded on the importance of communication between clinicians and the laboratory, and the team work as the basis for success. Finally, dr Velibor Canić from the Serbian Chamber of Biochemists emphasized the importance of the Chamber in organizing laboratory service. The fourth session covered the role of biomarkers in the sepsis diagnosis algorithm. The opening lecturer, professor Matej Podbregar (Clinical Department for Internal Intensive Care Medicine, University Medical Center Ljubljana, and Medical Faculty, University of Ljubljana, Slovenia) presented the basis of clinical approach to sepsis and septic shock. The talk about the role of procalcitonin and APACHE II score in early prediction of severity in acute abdominal conditions followed, presented by professor Nenad Ivančević (Center for Emergency Surgery, Clinical Center of Serbia, and Medical Faculty, University of Belgrade, Serbia). The session was closed with the evaluation of diagnostic and prognostic value of biomarkers in the management of abdominal sepsis, by dr Tatjana Vodnik (Center for Medical Biochemistry, Clinical Center of Serbia, Belgrade, Serbia). The final, fifth session, of the

XIX National SMBS Congress was dedicated to the management of requests for laboratory investigation of thyroid function. Professor Miloš Žarković (School of Medicine, University of Belgrade, and Clinic of Endocrinology, Clinical Center of Serbia, Belgrade, Serbia) opened the session with guidelines and algorithms of thyroid function investigation, with the emphasis on conditions when TSH determination is not enough and circulating thyroid hormones need to be measured. The issues connected with the ways, means and benefits of standardization and harmonization of endocrine assays were elaborated by professor Pierre Carayon (Aix-Marseille University, France), and the talk about the importance of appropriate utilization of thyroid function tests in medical-biochemistry laboratory, concerning the overall test utilization control process, was presented by professor Svetlana Ignjatović (Department of Medical Biochemistry, Faculty of Pharmacy, University of Belgrade, and Center for Medical Biochemistry, Clinical Center of Serbia, Belgrade, Serbia). The session closed dr Neda Milinković (Center for Medical Biochemistry, Clinical Center of Serbia, and Department of Medical Biochemistry, Faculty of Pharmacy, University of Belgrade, Serbia) with the results of her indirect determination of reference values for the parameters of thyroid status.

During the XIX National Congress of SMBS, the special section was dedicated to student's scientific researches in the field of medical biochemistry and pharmaceutical science. The participants were students of medical biochemistry and pharmacy at the Faculty of Pharmacy, University of Belgrade, with their guests, medical biochemistry students from Faculties of Pharmacy from Zagreb and Ljubljana. The program included nine oral presentations of students' projects and eleven poster presentations, which competed for the best poster award – the participation at the upcoming EuroMedLab 2015 in Paris. The authors of the awarded poster are Marijana Jevtić and Tanja Gligorov.

With over 250 participants from Serbia and Balkan and 17 international lecturers, this years Symposium and Congress fulfilled the high expectations set traditionally by the SBSS. This is thank to dedicted work of the Symposium President – professor Nada Majkić-Singh, the President of the SMBS Congress Scientific Committee – professor Svetlana Ignjatović, and the President of the Organizing Committee – dr Zorica Šumarac, President of the SMBS, as well as to all other members of the Organizing Committee. After leaving these two successful events behind us, with many thanks to all the lecturers, we are looking forward to the 11th BCLF Symposium for Balkan Region and the next years' events dedicated to the celebration of the 60th anniversary of the SMBS.



Members of Organizing Committee of the XIX Congress of Medical Biochemists of Serbia with guests



Participants of the XIX Congress of Medical Biochemists of Serbia



The lecturers and participants of the XIX Congress of Medical Biochemists of Serbia



S. Ignjatović, N. Majkić-Singh, Z. Šumarac and B. Pavlović with awarded students M. Jevtić and T. Gligorov

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10th EFLM SYMPOSIUM FOR BALKAN REGION

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The end of summer and first days of autumn are traditional time for Belgrade meetings of medical biochemists of Serbia. This year, September 9–13 were the days of the XIX National Congress of Medical Biochemistry and Laboratory Medicine and of the 10th EFLM Symposium for Balkan Region. The Society of Medical Biochemists of Serbia and the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) together with Center for Medical Biochemistry Clinical Center of Serbia, and Faculty of Pharmacy University of Belgrade organized in Belgrade (September 11–12, 2014) the 10th EFLM Symposium for Balkan Region under the title **»Paediatric Laboratory Medicine: Some Aspects of Obesity, Metabolic Syndrome, Neonatal Screening, Reference Intervals and Critical Values«**. EFLM appointed Belgrade (Serbia) and the Society of Medical Biochemists of Serbia (SMBS) as the organizer of educational symposia for clinical chemists in the Balkan region and as a result of this decision ten symposia have been organized thus far very successfully. The 10th EFLM Symposium for Balkan Region is organized under the auspices of the International Federation of Clinical Chemistry (IFCC), Balkan Clinical Laboratory Federation (BCLF), as well as the Ministry of Education, Science and Technological Development, and Ministry of Health of Republic of Serbia. The Scientific Committee members were Symposium President Nada Majkić-Singh (Serbia), Edgard Delvin (Canada), Elizabeta Topić (Croatia), Grazyna Sypniewska (Poland) and Svetlana Ignjatović (Serbia).

The Symposium lectures were presented through three sections: Pediatric Obesity – Insulin Resistance – Non-alcoholic Fatty Liver Disease (NAFLD); Neonatal Screening for Metabolic Disease (two parts); and Pediatric Reference Intervals and Critical Values. The lecturers were from Canada (2), Italy (2), Macedonia (2), Serbia (5), UK (1), Hungary (1), Slovenia

(1), France (1) and Sweden (1). The papers of the presented lectures were published in *Journal of Medical Biochemistry* 2015; 34: 1–150 (<http://www.degruyter.com/view/j/jomb>). The special thanks the organizers owe to professor Edgard Delvin (Montreal Children's Hospital, McGill University, Montreal, Canada) who helped to design the program of the symposium, and suggested the topics and lecturers.

The first section of the symposium was dedicated to pediatric obesity, insulin resistance and non-alcoholic fatty liver disease (NAFLD). Professor Delvin made the introduction, with the lecture about the prevalence, secular trends and consequences of obesity, where he also mentioned the fundamentals of epidemiology and pathophysiology of NAFLD, and covered the present biomarkers and the development of new ones. Professor Valerio Nobili (Bambino Gesù Children Hospital, Rome, Italy) continued with the epidemiology and natural history of NAFLD, elaborating on the complex interplay between genes and the environment in NAFLD pathogenesis, and the possibility of discovering the potential early predictors and suitable noninvasive diagnostic tools based on the pathogenetic mechanisms and histological patterns. Metabolic setup and risks in obese children was discussed by professor Mirjana Kočova (University Pediatric Clinic, Skopje, Republic of Macedonia). Professor Kočova presented results of several studies in obese children of different ages performed in the Republic of Macedonia, which showed higher leptin and lower adiponectin levels in obese children, who also presented with a more atherogenic lipoprotein profile, associated with increased insulin resistance, emphasizing the need for the onset of therapy preventing cardiovascular complications at a younger age. Professor Vera Zdravković closed the first section with the talk about the importance of early diagnosis of prediabetes, as early complication of childhood obesity, and non-invasive methods to perform it. The



Chairmen of the 10th EFLM Symposium: N. Majkić-Singh and E. Delvin



Members of the Organizing Committee with lecturers on the 10th EFLM Symposium (Belgrade, September 2014)



Symposium lecturers from left to right: N. Majkić-Singh, Z. Šumarac, M. Čvorkov-Dražić (sitting): I. Balogh, E. Delvin, R. Pollitt, A. Burlina (standing)



N. Majkić-Singh with Symposium lecturers: V. Anastasovska, B. Repič, T. Milenković and M. Kocova



Sessions chair: Svetlana Ignjatović and Khasrow Adeli



N. Majkić-Singh with Symposium lecturers: J. Henny, P. Ridefelt, K. Adelli, E. Delvin

second section was dedicated to the neonatal screening for metabolic disorders. The opening lecture by professor Rodney Pollitt (Sheffield Children's Hospital, UK) reviewed different viewpoints and international perspectives on newborn screening, which was an excellent introduction for the issues in standardization in neonatal screening programmes presented by professor Alberto Burlina (University of Padua, Italy). Professor István Balogh (Department of Laboratory Medicine, University of Debrecen, Hungary) talked about the relevance of adding the detection of population-specific mutations to commercial allele specific CFTR gene mutation detection method in order to achieve the required sensitivity of molecular testing in newborn screening. The first part of the section was closed with Serbian experiences in screening in the prevention of Thalassemia syndromes, presented by dr Milica Čvorkov-Dražić (Society of Medical Biochemists of Serbia). The second part continued with the presentation of results of the study of direct molecular diagnosis of CYP21A2 point mutations in Macedonian and Serbian patients with 21-hydroxylase deficiency by professor Violeta Anastasovska (Genetic Laboratory, Department of Endocrinology and Genetics, University Children's Clinic, Skopje, Republic of Macedonia). Professor Barbka Repič Lampert (Unit for Special Laboratory Diagnostics, University Children Hospital, University Medical Center Ljubljana, Slovenia) presented the selective screening for metabolic disorders in a Slovenian pediatric population. The section dedicated to newborn screening was closed by dr Tatjana Milenković (Department of Endocrinology, Mother and Child Health Care Insti-

tute of Serbia »Dr Vukan Čupić«, Belgrade, Serbia), who presented their 30 years experience with the screening program for congenital hypothyroidism in Central Serbia (1983–2014). The Symposium was closed with current issues in paediatric reference intervals and critical values. Professor Joseph Henry (Versailles Saint Quentin University, Villejuif, France) introduced the concepts and complexity in establishing reference values in pediatrics. Afterwards, Professor Khosrow Adeli (Clinical Biochemistry, The Hospital for Sick Children, University of Toronto, Canada) discussed the concept and feasibility of common reference intervals, as well as the CALIPER reference interval database. Finally, the section and the whole symposium was concluded by professor Peter Ridefelt (Department of Medical Sciences, Clinical Chemistry, Uppsala University, Sweden), who presented the results of a population-based Swedish study which obtained pediatric reference intervals, and emphasized the problem of lacking reference intervals for the youngest age group, under six months of age.

The design of the program of this symposium enabled the laboratory professionals in the Balkan region and our country to learn about this very important area of laboratory medicine. The presence of excellent lecturers and professionals in this field gives very high recognition and prestige to this Meeting, which will influence the development of clinical chemistry and laboratory medicine in the Balkan region. We hope that the EFLM Symposium in Belgrade will continue its successful progress like in previous years, striving to focus on the new data in the field of laboratory medicine.