EDITORIAL

The articles published in this issue of the journal Rad – Medical Sciences are contributions by invited speakers at the 6th symposium DEVELOPMENTAL BIOLOGY OF PLATELETS, THROMBOCYTOPENIA AND MYELOPROLIFERATIVE NEOPLASMS, organized by the Department of Clinical and Transplantation Immunology and Molecular Medicine of the Croatian Academy of Sciences and Arts in Rijeka. The meeting was held in Rijeka on 12 March 2015. Co-organizers were the Clinical Hospital Centre in Rijeka, the Medical Faculty of the University of Rijeka, and the Croatian Medical Association – Branch Office Rijeka. The aim of the meeting was to highlight several recent breakthroughs in the field of the thrombopoiesis by promoting the interdisciplinary approach in the range from basic sciences to clinical practice and international collaboration. New approaches in the education of Pathophysiology under the message Education Today for Health Tomorrow were addressed as well.

In order to upgrade the understanding of disease phenomena, Professor Z. Kovac from Zagreb has developed the concept of etiopathogenetic clusters (EPC). The way in which he defined and elaborated this concept is a new and unique approach in the field of basic and clinical medicine, and has already attracted broad international recognition. Etiopathogenetic clusters were defined as a common tendency of heterogeneous pathological pathways to form common crossing points of reactivity. The EPCs integrate multiple inputs and look like natural integrators of human body response. This concept can help preserve the physicians' approach to the whole body as the referent concept and orientation in medicine despite the progressive compartmentalization into narrow fields of interest (specializations, sub-specializations). They may use algorhythms and EPCs as methodological attempts to fuse the visions of and insights into the two major cognitive pillars – clinical medicine and biomedical research – for the integrative physiology of human body diseases/disorders. Thrombocytopenia, bleeding diathesis and hypercoagulability are outlined as individual EPC.

Dr. Sc. A. Begonja Jurak from Rijeka highlighted several new basic mechanisms in megakaryopoiesis and thrombopoiesis. These are series of complex events through the remodelling of megakaryocyte cytoskeleton, the formation of proplatelets,

and the final maturation of platelets. Abnormalities in these processes may lead to clinically recognized disorders. Dr. Sc. D. Baković from Split stressed the importance of the so-called large platelets (platelets with a high mean platelet volume – MPV) as recognized prothrombotic factors. Large platelets have a higher prothrombotic potential and MPV – as the commonly used measure of platelet size, it is a simple and easy method to assess the platelet function accurately.

Clinical aspects of thrombocytopenia were highlighted in all periods of life. Thrombocytopenia is commonly found in pregnancy; it can significantly influence both the mother and the fetus/newborn. Professor A. Duletić-Načinović from Rijeka discussed the diagnosis and management of various causes of thrombocytopenia in pregnancy. Professor J. Roganović from Rijeka presented cases, clinical and therapeutic aspects of the immune childhood thrombocytopenia. This is usually a benign disorder, most common in young children, following a viral infection, and usually with spontaneous recovery. Recent guidelines recommend careful observation as appropriate for paediatric patients with mild bleeding or none, regardless of the platelet count. Professor N. Suvajdžić from Belgrade, Serbia discussed a new concept of Primary immune thrombocytopenia (ITP) in adults, which is an acquired autoimmune disorder characterized by isolated thrombocytopenia in the absence of known causes. Recently (in 2009), the international consensus on terminology, definitions and outcome criteria was reached for ITP. Professor M. Todorović-Tirnanić from Belgrade, Serbia presented the results of twenty-four years of experience with the method of autologous platelet labelling with Indium-111 oxinate and labelled platelets lifespan, production and sequestration site determination. Based on the labelled platelets sequestration site determination, it was possible to predict the efficacy of splenectomy in ITP patients.

In the group of papers focussed on the treatment of thrombocytopenia, Dr. Sc. I. Jukić from Zagreb discussed the clinical relevance of antiplatelet antibodies, and the relevance of the serological methods and recently developed molecular biological methods that have enabled a more accurate determination of platelet antigens, and improved the evaluation of the role of these antigens in many thrombocytopenic syndromes, associations with susceptibility to diseases, and the outcome of allogeneic bone marrow and solid organ transplantation. Professor S. Balen from Rijeka gave an excellent contribution to the understanding of the organization, activities and function of the clinical transfusion centre, and gave a complete view on many debates and controversies regarding the advantage of giving prophylactic compared to therapeutic transfusion, the platelet collection method, and the optimal platelet dose to be transfused. During the meeting, Professor P. Černelč from Ljubljana, Slovenia presented results of new achievements in the therapy of both primary immu-

ne thrombocytopenia and secondary thrombocytopenias related to primary clinical entities, by monoclonal anti CD20 antibody rituximab and drugs that are agonists of thrombopoietic receptor (TPO-RA), stimulating the bone marrow production of megakaryocytes that consequently increase the thrombocyte number in the peripheral blood. Professor D. Pulanić from Zagreb stressed the issue of the chronic form of the reaction of transplanted cells (allogeneic haematopoietic cells) against the host (Graft versus Host Disease – GvHD), which is frequently accompanied by thrombocytopenia and other coagulation disorders; this is usually an unfavourable prognostic sign for successful transplant survival.

Essential thrombocytemia is a state opposite to thrombocytopenia and belongs to myeloproliferative neoplastic disorders. Professor R. Kušec from Zagreb highlighted genetic aspects of the disease, since in the last ten years major breakthroughs were made in the diagnostics of molecular genetic defects responsible for the development of essential thrombocytemia. Professor T. Valković from Rijeka described all the major aspects of essential thrombocytemia, which is a clonal Ph-negative myeloproliferative neoplasm characterized –besides by thrombocytosis – by bone marrow megakaryocytic hyperplasia and a tendency to develop vascular complications as well.

The articles presented in this issue of Rad – Medical Sciences, in addition to the discussions and presentations held during the symposium, encompass the thematic range tackled at the symposium, and relate to the whole cycle of the developmental biology of megakaryocytes, the production of thrombocytes, relatively frequent thrombocytopenias, myeloproliferative neoplasms (essential thrombocytemia), and the treatment of these disorders. I hope the texts will be of value to specialists, experts and medical students.

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