

Report to ESO, WSO, EAN, WFN

**By Vida Demarin, Hrvoje Budincevic and Anita Arsovska
(Fellows of the European Stroke Organization)**

30th Dubrovnik Summer Stroke School: Healthy Lifestyle and Prevention of Stroke and Other Brain Impairments, International Course, endorsed by European Stroke Organization (ESO), World Stroke Organization (WSO), European Academy of Neurology (EAN) and World Federation of Neurology (WFN)

The 30th Summer Stroke School: Healthy Lifestyle and Prevention of Stroke and Other Brain Impairments, International Course, took place in the beautiful city of Dubrovnik, Croatia, at the Inter-University Center, from 03th-07th of June 2019. Course Director was Prof. dr. Vida Demarin, FAAN, FAHA, FESO, FEAN, FWSO, Fellow of Croatian Academy of Sciences and Arts, University of Zagreb, Croatia and the Board of Directors consisted of Prof. dr. Roman Haberl, University of Munich, Germany, Prof. dr. Kurt Niederkorn, University of Graz, Austria, Prof. dr. David Russell, University of Oslo, Norway and Assist. prof. dr. Hrvoje Budinčević, Sveti Duh University Hospital, Zagreb. Colleagues from the Dubrovnik General Hospital participated in the Organizing Committee (Dr Andrijana Bogoje Raspopović, Assist prof. dr. Denis Čerimagić, Dr Mira Ivanković and Dr Maro Vodopić) and also served as Course Coordinators (Dr Andrijana Bogoje Raspopović, Dr. Petra Črnac Žuna and Petra Dalić). The Summer Stroke School was organized by the International Institute for Brain Health, Central and Eastern European Stroke Society, Croatian Stroke Society, School of Medicine, University Of Zagreb, Inter University Centre Dubrovnik, WFN Applied Research Group on the Organisation and Delivery of Care and the Society for Neuropsychiatry and co-organized by the Department of Medical Sciences – Croatian Academy of Sciences and Arts.

The scientific programme was exciting and encompassed many aspects of stroke and related disorders (starting from prevention, acute diagnosis, treatment and rehabilitation) delivered by international faculty from Albania, Austria, Croatia, Germany, Israel, N. Macedonia, Serbia and Slovenia. Traditionally, the school was attended by numerous participants (residents and young specialists in Neurology) from Albania, Austria, Bosnia and Herzegovina, Croatia, North Macedonia, Serbia and the Netherlands.

The first day (3rd of June), in the morning session, Prof. Vida Demarin (Croatia), opened the meeting, presenting Images and Memories of our first 30 years of the Summer Stroke School on the occasion of its 30th Anniversary. It was really fascinating to see all the renown lecturers who took part in the Summer Stroke School during the 3 decades period, and to see how the school developed and growth over the years. Prof. Roman Haberl (Germany), long-term friend and supporter of the Summer School, continued in this manner, presenting “Thirty Years of Stroke in Thirty Years of IUC Summer Stroke School” talking about the most important stroke studies chronologically during the past 30 years. Then, Prof. Anita Arsovska (N. Macedonia) talked about “Risk Factors for Stroke in Women”, presenting risk factors that are specific for females (hormone levels, hormone therapy, eclampsia, period of pregnancy and puerperium, migraine with aura) and also compared the presence and adherence to therapy regarding the traditional vascular risk factors (hypertension, hyperlipidemia, diabetes mellitus, atrial fibrillation and cognitive impairment). Afterwards,

Prof. David Russell (Norway), founder of the European Society for Neurosonology and Cerebral Haemodynamics (ESNCH) delivered two important lectures, about the “Cerebrovascular ultrasound” and the “Unstable Carotid Artery Plaque”. The session was concluded with the talk of Ass. Prof. Hrvoje Budincevic- Ultrasound in Intensive Care Unit. After the lunch break, the Summer Stroke School continued with the Workshop - Cerebrovascular Ultrasound, with hands-on training provided by Doppler experts (Prof. David Russel, Ass. Prof. Hrvoje Budincevic and Dr. Maro Vodopic).

The second day (4th of June) started with the topic “ There is no Health without Brain Health - Lifestyle and Optimal Brain Health” delivered by Prof. Vida Demarin (Croatia), explaining the audience how we can optimize our brain functions, based on the conclusions from the newest studies related to brain health. Afterwards, Dr. Sandra Morovic (Croatia) talked about the importance and the activities of “HISPA”, which is an association of Hypertension, Infarction, and Stroke Prevention, while Prof. Jera Kruja (Albania) explained the best diagnostic and therapeutic approach in patients with “Seizures after stroke”. Then, Dr. Dennis Dietrich (Germany) talked about “Sense and Purpose of the Stroke Unit”, giving a great overview of the necessity of a stroke unit. “The Voice of the Stroke Survivor Represented Through Stroke Alliance for Europe” was delivered by Prof. Anita Arsovska (N.Macedonia), SAFE Board Member, putting an emphasis of the European Stroke Action Plan 2018-2030 and the most important overarching targets that need to be fulfilled by 2030 (1. Reduce the absolute number of strokes in Europe by 10%; 2. Treat 90% or more of all patients with stroke in Europe in a stroke unit as the first level of care; 3. Have national plans for stroke encompassing the entire chain of care from primary prevention through to life after stroke; 4. Fully implement national strategies for multi-sector public health interventions, promoting and facilitating a healthy lifestyle, and reducing environmental (including air pollution), socio-economical and educational factors that increase the risk of stroke). Also, the activities of SAFE on political level were presented, like the events in the European Parliament and the European Commission of the Regions in Brussels) as well as the importance of collaboration with other societies and initiatives (such as ESO, Angels Initiative etc). The morning session was concluded with the lecture of Ass. Prof. Hrvoje Budincevic, entitled “ ESO-EAST, IRENE and RES-Q registry”. Dr. Budincevic explained the importance of data registries, for example, the RES-Q data base has currently more than 99.000 patients entered, providing us an opportunity to measure our performance and take adequate steps for improvement. The afternoon session was again dedicated to the practical aspect of the ultrasound examination (extracranial and transcranial color duplex sonography) by the Workshop led by Prof. David Russel, Ass. Prof. Hrvoje Budincevic and Dr. Maro Vodopic.

Wednesday, 5th of June started with our charming Professor Natan Bornstein (Israel), Vice-President of the World Stroke Organization, who talked about “Carotid Artery Disease” and presented the latest results from the clinical trials and at the same time, actively interacting with the participants who enjoyed very much his presentation. Afterwards, we heard “How to increase the rate of rt-PA use in stroke ?” by Dr. Dennis Dietrich (Germany) followed by “Education and Training in the TeleStroke Network” presented by Prof. Bojana Zvan (Slovenia), founder of the national Tele-Stroke (TeleKap) network in Slovenia. Prof. Zvan presented her rich experience since she created Tele-Stroke in her country, showing the great benefit that has been added to the acute stroke patients in Slovenia. Dr. Frank Kraus

(Germany) followed with the exciting presentation of the “First Results on TEMPiS Flying Interventional Team Trial” and Dr. Ilir Alimehmeti (Albania) proceeded with his talk on “Designing Telestroke in Albania: Blueprints and Recommendations”. Prof. Vida Demarin concluded this session with ‘Art and Brain - Mutual Relationship Translating to Clinical Practice’, giving new and interesting insight into the connections between our brain and all forms of art. During the afternoon session again participants had the privilege for a hands-on training during the Workshop on Cerebrovascular Ultrasound.

The fourth day of the Summer Stroke School begun with Prof. Kurt Niederkorn (Austria), and his lecture on the “Development of Stroke Medicine”, with detailed summary of the progression of the stroke diagnostic and therapeutic management over the years. Prof. Niederkorn’s second lecture was on “Mechanical Thrombectomy in Acute Stroke – Update”, describing the latest studies and results in this field. Dr. Frank Kraus (Germany) gave an “Overview on the International Stroke Conference 2019” and pointed out the highlights of this meeting. Zeljko Zivanovic (Serbia) delivered the lecture on “Intravenous Thrombolysis in Embolic Stroke of Underdetermined Source” and Prof. Natan Bornstein talked about “Secondary Stroke Prevention- Antiplatelets Update” where again participants had an opportunity to broaden their knowledge and solve their dilemmas regarding the choice of an antiplatelet therapy in different clinical scenarios. Ass.Prof. Hrvoje Budincevic finished the morning session with the interesting lecture on “Oral Anticoagulant Therapy in Secondary Stroke Prevention” providing advice regarding the use of different oral anticoagulants. The afternoon session started with Dr. Marga Kocmur who talked about “Anxiety and Depression in Poststroke Patients: Diagnosis and Treatment” and then continued with selected participants’ short Communications: Irena Djorceva talked about “Medication Interactions and Stroke”, Dmtar Vlahovic presented a case report on “Basilar Artery Occlusion and Unknown-onset Stroke, a Tied Hands Situation or not?” and another case report on “Reperfusion Therapy in Acute Ischemic Stroke with Tandem Lesion” was presented by Goran Knezovic.

Friday 7th of June, the fifth day of the Stroke Summer School started with the morning session with presenters from Croatia. Again participants had the pleasure to listen to lectures regarding stroke and other brain diseases. Dr. Nikola Baric talked about the “Increase in Iron Intracerebral Concentration in Patients Suffering from Alzheimer’s Disease (AD) Follows the Rise of Amyloid Beta (A beta)”, Denis Cerimagic talked about “Fabry Disease: A Rare Cause of Ischemic Stroke, Dragutin Kadojic delivered a lecture on the “Phenomenon of Hyperostosis Frontalis Interna (Morgagni-Stewart-Morel Syndrome – State of the Art Knowledge”. Andrijana Bogoje Raspopovic presented a case report on “Coexistence of Multiple Sclerosis and Huntington’s Disease” and Marinko Dikanovic talked about “Cocain Use and Stroke”.

The Summer Stroke School finished with the final exam and the closing remarks of Prof. Vida Demarin, who concluded that this meeting was very successful, combining education and learning with relaxation and enjoyment in a friendly atmosphere, already announcing the next Stroke Summer School that will take place next year from the 8th-12th of June 2020.

Our local host, Dr. Andrijana Bogoje Raspopovic, as always, successfully organized the social programme every evening, where we continued our networking in a relaxing atmosphere.

The Welcome Party took place at Banje beach, the most attractive beach in Dubrovnik, providing a beautiful view of Dubrovnik city walls. The second evening, the highlight was the promotion of the book on the occasion of the 30th Anniversary of the Summer Stroke School, edited by Prof. Vida Demarin and published by the Croatian Academy of Sciences and Arts, Department of Medical Sciences. Prof. David Russel, Prof. Natan Bornstein and Ass. Hrvoje Budincevic were promoters at this event, talking about the content of the book and its significant contribution to the scientific world of Neurology. The following authors contributed to the content of this book: Vida Demarin (Foreword and Benefit of Mediterranean Lifestyle on Brain Health), Denis Cerimagic (Welcome word), Peter Sandercock (Welcome word), Roman Haberl (Thirty Years of Stroke in Thirty years of IUC), Serefnur Ozturk (Stroke Burden and Increasing Risk Factors), Dennis Dietrich (Sense and Purpose of Stroke Unit), Christine Tiu (Cervical and Intracranial Artery Dissections-Diagnosis and Treatment), Anita Arsovska (Cerebral Venous Sinus Thrombosis and Stroke Alliance for Europe (SAFE)-the Stroke Patient voice in Europe), Hrvoje Budincevic, Petra Crnac Zuna, Laszlo Csiba (Antithrombotic Therapy After Intracerebral Hemorrhage: a Challenging Decision), Milija Mijajlovic, Mihajlo Mirkovic, Natan Bornstein (Treatment Strategies for Asymptomatic Carotid Stenosis), Frank Kraus (Brief History of Endovascular Therapy in Acute Ischemic Stroke and the Challenge to Provide EVT for Patient in Remote Areas), Bojana Zvan, Marjan Zaletel, Enhancement of Intravenous thrombolysis by Nationwide Telestroke in Slovenia (a model of care – a Model of Care for Middle and low Income countries), Tatjana Rundek (Neurosonology Fundamentals for Clinical Use), David Russel (The Detection of Cerebral Microemboli Using Transcranial Doppler), Dragutin Kadojic (How to Improve Stroke Awareness: a Slavonian Experience), Vladimira Vuletic (Modern Treatment of Advance Parkinson's Disease), Marinko Dikanovic (Vascular Parkinsonism), Andrijana Bogoje Raspopovic (Coexistence of Multiple Sclerosis and Huntington's disease) and Sandra Morovic (Migraine- a Secondary Headache Caused by Upper Crossed Syndrome). On the third night we had a pleasure to listen to the beautiful concert that was performed by Anita Arsovska (piano) and her daughter Marija Arsovska (violin), who played the masterpieces of Chopin, Mozart, Sarasate and Vivaldi, while the fourth night we went sailing into the 16th century with the traditional "Karaka" ship.

The 30th Summer Stroke School was accredited by 4 ECTS points and provided an excellent and enjoyable platform to hear great lectures, interact with faculty, share experience and meet colleagues from different countries. The Organizing Committee is already planning the next summer school, so mark your calendars and plan your trip to Dubrovnik next year!



Picture 1. Prof. Vida Demarin with faculty and participants of the 30th Summer Stroke School in Dubrovnik, 2019



Picture 2. Ass. Prof. Hrvoje Budincevic and Prof. Vida Demarin, lecturing at the 30th Summer Stroke School in Dubrovnik, 2019



Picture 3. 30th Anniversary of the Summer Stroke School in Dubrovnik, 2019



Picture 4. Welcome reception at the 30th Summer Stroke School in Dubrovnik, 2019, Prof. Vida Demarin (Croatia) and Prof. Natan Bornstein (Israel)



Picture 5. Welcome reception at the 30th Summer Stroke School in Dubrovnik, 2019
Prof. Vida Demarin (Croatia) and Prof. Natan Bornstein (Israel)



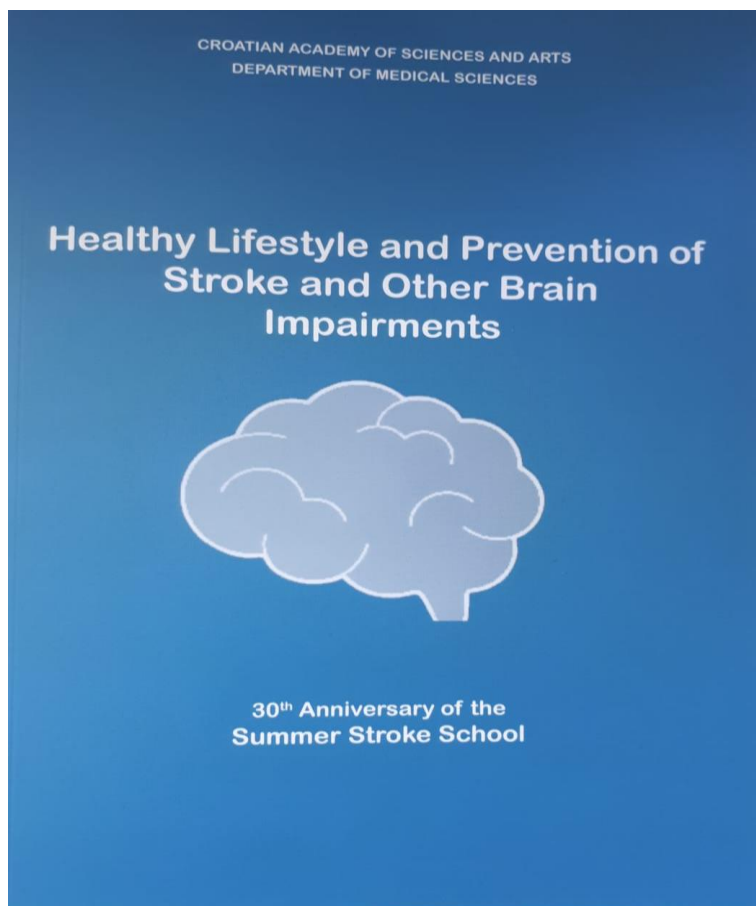
Picture 6. Welcome reception at the 30th Anniversary Summer Stroke School, Dubrovnik
Prof. Bojana Zvan (Slovenia), Prof. Vida Demarin (Croatia), Prof. Natan Bornstein (Israel)



Picture 7. Welcome reception at the 30th Anniversary Summer Stroke School, Dubrovnik
Dr. Sandra Morovic (Croatia) and Ass. Prof. Hrvoje Budincevic (Croatia)



Picture 7. Ultrasound workshop at the 30th Summer Stroke School in Dubrovnik, 2019



Picture 8. Book on the occasion of the 30th Anniversary of the Summer Stroke School



Picture 9. Participants of the 30th Summer Stroke School in Dubrovnik



Picture 10. Promotion of the book on the occasion of the 30th Anniversary of the Summer Stroke School



Picture 12. Marija Arsovska (violin)



Picture 13. Anita Arsovska (piano)