

ISH Member Reports from the European Society of Hypertension, June, Milan Meeting: 27th European Congress on Hypertension and Cardiovascular Protection



We are delighted that the following ISH members have contributed reports on stand out sessions that they attended during the June 27th European Congress on Hypertension and Cardiovascular Protection.



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27th European Congress on Hypertension and Cardiovascular Protection in Milan. A place where fashion, grandeur and science come together like The Three Graces.

This was my second ESH meeting and there was a “hot welcome” given by Milan to participants of the ESH Annual Congress (the average temperature was about 81°F in the shade till evening!) ‘Hot’ issues were also discussed during traditionally scheduled morning and plenary sessions, oral and poster reports, meetings with experts, workshops and training courses with a wealth of information given from the fundamental aspects of studying the mechanisms of hypertension to results of large-scale clinical trials.

Pending new ESC/ESH Hypertension Guidelines to be published in 2018, a lot of speakers hit the spots mainly on BP cut-offs, measurement techniques, differences in office, ABPM, HBPM, patient adherence, early single pill combinations, and changes in target organ damage.

A stand-alone symposium was devoted to a rapidly-developing and promising area of healthcare, i.e. the use of information and communication technologies. Professor G. Parati (Milan, Italy) with colleagues from Greece and China presented their reports showing significant increase in patients' adherence and target BP achievement with the joint use of telemedicine programs and home blood pressure monitoring. It emphasizes the essential role of emerging technologies in establishing doctor-patient partnerships and reducing therapeutic inertia, and provides the patient with multiple opportunities to hear critical messages and potentially

reduce the treatment costs. In his lecture, M. Azizi (France) also noted a degree of impact that a telemedicine (provided by mobile SMS) has on support of adherence. As there is an increasing diffusion of smartphones (more than 3.5 billion users to date) and more than half of them have already downloaded at least one mobile health application, it seems to be correct saying that mHealth is a “potential game-changer” (from a recently published paper by G. Parati, S. Omboni, et al.) Nevertheless, this needs more control, because legal aspects and the difficulty of technical implementation remain major barriers to the widespread incorporation of telehealth tools. The first official 2015 FDA Guidance on mobile health applications was encouraging news, along with the final release of the updated ESH official mobile BP telemonitoring application (ESH App). It seems to call for national hypertension societies to take note of innovations and to be proactive in pilot projects along with RCTs.

A terrific debate on topical issues was traditionally presented at the final plenary session. Discussing target BP level issues Professor M. Burnier (Lausanne, Switzerland) advocated intensive treatment with more stringent thresholds. He introduced brilliant clarity in favor of aggressive treatment, providing options for the same risks for MI and CVD death BUT lowering the risks of stroke, and reminded everybody to stand in the patient's shoes.

Professor S. Kjeldsen (Oslo, Norway) was his opponent and parried with an artful answer, convincing the audience that in some cases conventional strategy is more advantageous in preventing MACEs and being crucial in frail elderly patients, people with extremely high baseline BP levels, etc. With great humour he talked about ‘real things’ like excessive diuretic usage or ‘lost to follow-up’ patients. As a decisive, kinky, argument Prof. Kjeldsen cited a comparison of Norwegian and Swiss cheeses. The latter, because of the much larger size of holes, is more likely to be eaten by rodents (like

an error in intensive BP lowering theory), also bigger cheese holes are reflection of gaps in the aggressive treatment hypothesis.

The debates and sessions this year turned out to be not only interesting and useful from a practical point of view, but an excellent example for scientists of how important it is to act sophisticatedly, to be more logical, and to be on reasonable ground even if it differs from the orthodox view.

- Mike Ionov

techniques to measure microcirculatory changes for hypertension management in the future.

The conference also featured a networking event hosted by the International Society of Hypertension in a picturesque terrace near the Duomo (city centre). This fantastic evening presented new investigators with a wonderful opportunity to interact with their mentors and peers from around the world. Another impressive recurring theme throughout the conference was the multitude of teaching workshops throughout the day that allowed attendees to become familiar with the newer concepts pertaining to hypertension and associated cardiovascular diseases.

The conference was well received, with the offered travel awards encouraging new investigators to come from many parts of the world. The next conference is scheduled to be held next year in Barcelona, Spain.

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The European Society of Hypertension Annual Meeting for 2017 was held in June in the vibrant city of Milan, Italy. The conference showcased several intriguing sessions on blood pressure measurement, discussions on upcoming guideline updates and, of most interest to me, novel microcirculatory markers of hypertension and vascular diseases.

Sophie Saxton from Dr. Heagerty's lab presented data indicating that the anti-contractile effect of perivascular adipose tissue from obese mouse mesenteric arteries is lost, compared to healthy counterparts. This was attributed to downregulation or desensitization of beta3-adrenergic receptors in obese mice, which could play a role in the development of hypertension. There were also several interesting presentations on the usefulness of retinal microvascular measurements in the detection and management of hypertension in patients. Of note, Dr. Dabrowska described the relationship between retinal microcirculation and large arteries in patients with essential hypertension. Central pulse pressure was found to be significantly correlated with retinal microperfusion and lumen diameter, and pulse wave velocity with perfusion. Dr. Gallo presented another study showing that retinal wall-to-lumen-ratio (WLR) is increased in masked versus control treated arterial hypertensive patients. Increase in anti-hypertensive therapy decreased retinal WLR concomitantly with improved home blood pressure control. These studies bode well for greater utilization of non-invasive



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In 2016 I defended the doctoral thesis "The role of genetic, hemodynamic and metabolic mechanisms in the development of comorbid pathology – essential hypertension and type 2 diabetes". My main scientific interests are related to comorbid pathology, genetic aspects of hypertension and type 2 diabetes, metabolic syndrome.

Thanks to the accommodation grant from ESH I had the opportunity of taking part in the prestigious 27th European Meeting on Hypertension and Cardiovascular Protection. It was a great honor for me to make an Oral Presentation in Poster Area at this Scientific Meeting.

One of the most important sessions for me was the satellite symposium "Improving management of hypertension: is early use of combinations the solutions?" (Chairpersons: G. Parati, B. Williams).

In his introduction, Prof. B. Williams stressed the importance of the timely prescription of combination treatment, in which drugs affect the various pathogenetic mechanisms underlying the development and

progression of hypertension.

Prof. C. Borghi presented the report "Pitfalls in hypertension management: a case study illustration", in which he summarized different ways to maximize the expected clinical benefit of combination treatment, and outlined strategies for improvement of blood pressure control and reduction of cardiovascular risk.

In the presentation "Optimal management of hypertension: key learning from past years" Prof. J. Brguljan paid special attention to compliance, safety and the effectiveness of fixed-dose combinations of antihypertensive agents.

Prof. K. Narkiewicz presented the report "Better

management means also choosing the right drugs" in which the importance of development of new and additional approaches to cardiovascular diseases management was noted. Prof. Narkiewicz underlined the important role of molecular and clinical synergies of antihypertensive drugs and noted the benefits of prescribing single pill combinations.

In conclusion, Prof. G. Parati summarized that "optimal cardiovascular protection by antihypertensive treatment can best be obtained through early start of effective and well tolerated drug combinations, at adapted doses".

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Even though until recently it was mostly large vessel alterations that were considered as target organ damage, there has been growing interest during the past years regarding the importance and the role of microcirculation in global cardiovascular risk assessment. The retina represents an open and easily accessible window for the in-vivo study of microcirculation in the human body, providing useful information for cardiovascular risk stratification in hypertensive patients or even the prediction of hypertension itself in healthy individuals.

During the 2017 ESH meeting, in the relevant "Microcirculation and Small Vessels" session, Professor Rizzoni presented the achievements in retinal vasculature

assessment techniques over time and discussed their possible role in cardiovascular risk assessment. Traditionally, retinal vessel evaluation is based on fundoscopy. The invention of the non-mydratic cameras, in combination with the development of computerized, automated systems for processing retinal photography, revolutionized the field. It is therefore feasible to easily and rapidly evaluate subtle retinal vascular changes in thousands of participants in large epidemiological studies. The measurement of Central Retinal Artery (CRAE) and Vein (CRVE) Equivalent and their ratio (AVR, Arterio-Venous Ratio), even with their methodological limitations, have been studied thoroughly, predicting independently cardiac events in women and stroke in the general population. Recently, low cost adaptors and accessories have enabled quick, easy and widespread retinal photography with the use of a single smartphone. In the last few years, expensive but innovative techniques such as adaptive optics have become available. Images of retinal vessels of an impressively high resolution can be acquired, enabling the measurement of the wall-to-lumen ratio of the retinal arteries, a promising new index of cardiovascular health in hypertensive patients.

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