

OPENING SESSION

Wednesday (September 15, 2021; 9:00 – 10:30)

Chair:

Prof. STANISLAW OKRASA
President of the Polish Physiological Society
University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

Assoc. Prof. TOMASZ H .WIERZBA
Department of Physiology, Medical University of Gdansk, Poland

DETAILED OPENING SESSION SCHEDULE

Opening ceremony (Wednesday, September 15, 9:00 – 9:45, *virtual stream A*)

Opening lecture (Wednesday, September 15, 9:45 – 10:30; *virtual stream A*)

SYMPATHETIC OVERACTIVITY AND CARDIOVASCULAR DISEASE - THE ISSUE IS MORE COMPLEX THAN WE THOUGHT. TRANSCRIPTOMIC STUDIES FOR MALE INFERTILITY DIAGNOSIS AND THERAPY MONITORING - **Krzysztof Narkiewicz** (Department of Hypertension and Diabetology, Medical University of Gdansk, Poland).

SYMPATHETIC OVERACTIVITY AND CARDIOVASCULAR DISEASE - THE ISSUE IS MORE COMPLEX THAN WE THOUGHT. TRANSCRIPTOMIC STUDIES FOR MALE INFERTILITY DIAGNOSIS AND THERAPY MONITORING

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The sympathetic nervous system plays a central role in cardiovascular regulation in both health and disease. Sympathetic overactivity has been implicated in the pathogenesis of hypertension, coronary artery disease, cardiac arrhythmias and heart failure. Nevertheless, there are several unclear, controversial or unresolved issues prompting further studies in the field. Firstly, despite the mechanistic rationale for the use of beta-blockers in the treatment of hypertension-related tachycardia, their therapeutic impact on patient prognosis in uncomplicated hypertension remains controversial. Secondly, while the “tracking phenomenon” is an important longitudinal characteristic of blood pressure, much less is known about changes in sympathetic nerve activity over time. Thirdly, we should pay more attention to long-term interaction between respiration and sympathetic overactivity. Spontaneous breathing frequency, central sympathetic outflow, and chemoreflex sensitivity exhibit significant interactions in the modulation of neural circulatory control. We need more studies evaluation long-term behavioural interventions directed at altering breathing frequency. Fourthly, microneurography, a gold standard of sympathetic drive assessment, was developed almost 50 years ago. It can be applied only in laboratory conditions. Cardiovascular research is in desperate need of novel broadly applicable tools assessing sympathetic activity also in real life to catch up with the progress in out-of-the office blood pressure and heart rate measurements. Fifthly, MRI-based studies might provide novel insights into relationship between sympathetic overactivity and cardiovascular disease. We have previously shown that compensatory functional reorganization may precede hypertension-related brain damage and cognitive decline. It is unclear how sympathetic overactivity contributes to altered brain mechanisms of higher cognitive processing, and whether these mechanism independently predispose to progression of hypertension or to acceleration in brain aging. Finally, we should better understand the link between sympathetic overactivity, stress and cardiovascular events. This might of particular relevance in the COVID-19 era.