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EDITORIAL

Editorial on the Special Issue of *Andrology* "The clinic and biology of the epididymis"

It is with great pleasure to present in this Special Issue of *Andrology* a series of original and review articles based on talks presented at the "von Behring-Röntgen-Symposium The Epididymis" held in Giessen, Germany, in 2022. As the meeting venue served the historic teaching building of the Medical Faculty of Justus-Liebig University, which has a history dating back more than 400 years and a long tradition in research and clinical services in male reproductive biology and andrology.

This symposium was funded by the Behring-Röntgen Foundation, an organization supporting research in the Medical Faculties of the neighboring Giessen and Marburg universities. The meeting stands in a line of quadrennial symposia since 1990, gathering scientists and clinicians interested in the epididymis.

Leading experts and young investigators from all continents presented their latest research. These were selected by the international Scientific Committee with Christina Maria Avellar (Sao Paulo, Brazil), Thomas Berger (Marburg, Germany), Patricia Cuasnicu (Buenos Aires, Argentina), Joël Drevet (Clermont-Ferrand, France), Barry Hinton (Charlottesville, USA), Andreas Meinhardt and Ralf Middendorff (both Giessen, Germany), Brett Nixon (Newcastle, Australia), Bernard Robaire (Montreal, Canada), and Winnie Shum (Shanghai, China).

The workshop was held from September 4 to 7, 2022 and started with an opening keynote lecture by Masahito Ikawa dealing with "Lumicrine factors in the regulation of spermatogenesis." Afterwards, 14 invited speakers presented their data grouped in four sessions. In the session about "Human epididymis and epididymitis," Adrian Pilatz (Giessen, Germany) gave a comprehensive overview of the clinical characteristics and management of bacterial and viral epididymitis. Ekaterina Kulchavenya (Novosibirsk, Russia) summarized the underestimated impact of male genital tuberculosis. Based on scRNA sequencing, Ann Harris (Cleveland, USA) painted a novel picture of the transcriptional landscape and functional genomics of the different cell types in the human proximal epididymis. In the following session "Immunobiology and immunopathology of the epididymis," Rukmali Wijayarathna (Melbourne, Australia) explained the complex role of activins in epididymal function, notably in immunoregulation. Rachel Guiton (Clermont-Ferrand, France) summarized novel aspects of the immune context of the mammalian epididymis. Here, Maria Augustina Battistone (Boston, USA) went into more detail flagging macrophages and dendritic cells as key players in immune surveillance of the epididymis. Based on experimental mouse epididymitis models, region-specific epididymal responses to inflammatory cues were reported by Erick Silva (Botucatu, Brazil).

In the subsequent session with a focus on "Epididymis and sperm maturation," the archetypical function of the epididymis received full attention. Here, global (phospho)proteomic profiling allowed David Skerrett-Byrne (Newcastle, Australia) to add fascinating new facets to the paradigm of sperm maturation. Michael Golding (College Station, USA) combined pre-conceptional paternal alcohol exposures with epididymal maturation and epigenetic programming of spermatozoa. MALDI imaging mass spectrometry (IMS) was introduced as a new technique by Charles Pineau (Rennes, France) to unveil regionalized mapping of biological functions in the epididymis.

The final session "Physiology and cell biology of the epididymis" was opened by Tsuyoshi Hirashima (Singapore), giving interesting insights in the role of mechanotransduction on tube formation during morphogenesis and in the generation of turbulent flow in the cauda epididymis. Gail Cornwall (Lubbock, USA) established a non-pathological functional amyloid in the epididymal lumen and revealed the role of different CRES amyloids. The important contribution of efferent duct cilia for male reproductive fitness was uncovered by Heymut Omran (Münster, Germany) showing that the cilia protein DNAH5, present in ciliated cells of the efferent ducts (but not in spermatozoa), is necessary for sperm transport through the efferent ducts toward the cauda epididymis. Epididymal injury and morphological sperm anomalies induced by a high fat diet (HFD) model were reported by Rosanna Chianese (Naples, Italy).

Between two sessions with invited speakers, short oral presentations gave especially young investigators ample opportunity to present their data in more detail. In total, 17 presentations had been selected from the submitted abstracts. Moreover, two poster sessions took place, which were lively attended. At the end of the meeting, the "Best oral presentation award" was conferred to Hiba Hasan (Giessen, Germany) for her talk on "Uropathogenic *Escherichia coli* infection leads to the formation of tertiary lymphoid organs in the epididymis." "Best poster awards" were conferred to Alexandre Andrade (Sao Paulo, Brazil) for his poster "Impact of lipopolysaccharide- and

lipoteichoic acid-induced inflammation on the transcript levels of Toll-like receptor pathway-related genes in the mouse epididymis" and to Nadim Hachem (Giessen, Germany) for his poster "The loss of polysialic acid shows an impaired contractile phenotype of smooth muscle cells in the epididymal duct linked with a dilated rete testis."

The congress dinner as well as the social events, namely a relaxing boat tour on the river Lahn followed by a city tour through Giessen or, alternatively, the guided tour "Emil von Behring—Savior of Children" walking through the steep stairs and alleys in the historic center of Marburg helped to create an inspiring and collegial congress atmosphere, and fostered fruitful discussions inside and outside the scientific sessions, many of them leading to new collaborations.

As conference convenors and editors of this special issue, we like to refer you to the articles of this special issue for delving more into the topics.

CONFLICT OF INTEREST STATEMENT

The authors declare they have no conflicts of interest.

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