

# YOUNG INVESTIGATORS REPORT FROM THE ASIAN- PACIFIC SOCIETY OF HYPERTENSION MEETING

Enabling regional and global  
engagement through the Asian-Pacific  
Congress of Hypertension

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The High Blood Pressure Research Council of Australia (HBPRCA) hosted the 15<sup>th</sup> Asian-Pacific Congress of Hypertension (APCH) in Brisbane, Australia, on November 24-27<sup>th</sup>, 2019. The congress was organised by Michael Stowasser, Karen Moritz, Bradley Broughton, Louise Burrell, Kate Denton, Francine Marques, Anastasia Mihailidou, Trefor Morgan, Markus Schlaich, James Sharman and Martin Wolley (all from Australia), and was attended by 347 delegates from 29 countries with 165 original oral and poster presentations.

The meeting commenced with four satellite symposia: Aldosterone and Hypertension, Role of the Sympathetic Nervous System in Hypertension and Target Organ Damage, Gut Microbiome and Hypertension, and Central Blood Pressure (BP): What's New? We (FZM, RC) attended the latter two symposia.

During the "Gut Microbiome and Hypertension" symposium, we learned about what the gut microbiome is, culturing microbes previously deemed 'unculturable', and designing robust microbiome studies. Work on hypertension, its complications and risk factors was also presented. The key take home messages were: 1) the gut microbiota is complex and dynamic; 2) recent technological advances make it easy to study the gut microbiota, but data is equally easy to be over-interpreted;<sup>1</sup> 3) the microbiome has a great potential to be used as therapy for human

disease, however, appropriate study design is essential to minimise confounding factors;<sup>1</sup> 4) the gut microbiota and epithelial barrier are altered in cardiovascular disease models (hypertension, stroke, myocardial infarction);<sup>2</sup> 5) the interaction between the gut microbiome and the immune system is likely to be an important driver for cardiovascular disease, where microbial effects are likely indirect and driven by gut metabolites activating immune cells;<sup>3</sup> 6) age and sex are important factors, but they are not always considered in experimental studies;<sup>1</sup> 7) a diet that is relevant to cardiovascular disease such as fibre, fat and salt, are typically associated with changes in the gut microbiome, and some of these affect the immune system that is likely to drive the cardiovascular phenotype and;<sup>3</sup> 8) there is a potential for use of gut metabolites such as short-chain fatty acids to treat cardiovascular disease.<sup>4-6</sup>



Discussions during the “Central BP” symposium ranged from pressure waveforms and waveform models, cuffless BP technology, the importance of measuring central BP in young populations to the BP clinic of the future. The key take home messages from the symposia were: 1) that deeper BP phenotyping is required to truly understand the risks related to elevated BP, and; 2) that cuffless BP technology is likely to be more and more utilized in future.

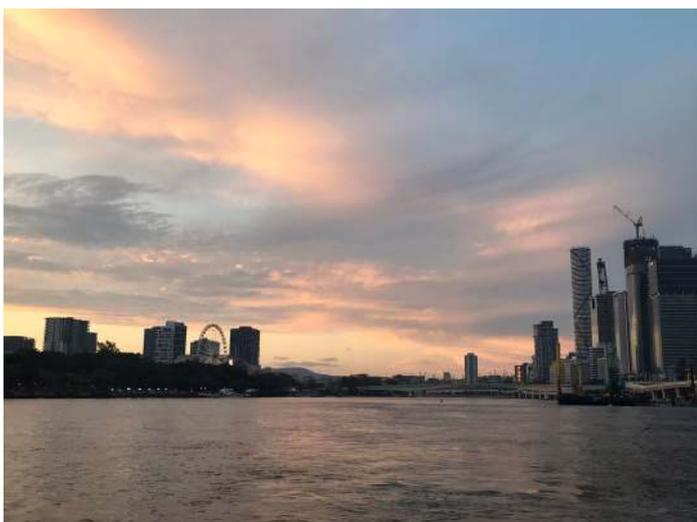
The congress included 17 keynote and 12 plenary speakers from a diverse background covering discovery, public health and clinical cardiovascular disease research. The main meeting commenced with the plenary session on hypertension, heart failure and diabetes, and followed with free communication sessions on hypertension management in diabetes. Recent research on the novel diabetes medications, SGLT2 inhibitors, was presented including their



Anastasia Mihailidou, Alta Schutte & Francine Marques

outstanding contribution to hypertension research, and discussed why the burden of high BP is higher in lower income countries and touched on the social determinants of disease.<sup>9</sup> The HBPRCA Austin Doyle Lecture, in recognition of research excellence outside of the field of hypertension, was delivered by Professor Ingrid Scheffer who presented on the life of a clinician scientist and the work she has done in the genetics of epilepsy as a paediatric neurologist.<sup>10</sup> Professor Grant Drummond delivered the HBPRCA Colin Johnston Lecture, in recognition of excellence in hypertension research by a young but established investigator, on the immune mechanisms of hypertension which included seminal findings on the role of B cells, inflammasomes and interleukin-18 in hypertension.<sup>11</sup> The HBPRCA Judith Whitworth Award, for the highest ranked abstract for which the first named author is a woman, was awarded to Dr Jordyn Thomas, the HBPRCA Jaye Chin-Dusting Award, highest ranked abstract for which the first author is a mid-career scientist, was awarded to Dr Sheila Patel, and the HBPRCA Paul Korner Medal, for an active researcher who has made a significant contribution to high BP research, was awarded to Professor Louise Burrell.

A consistent theme throughout the meeting was lifestyle approaches for the management of hypertension with presentations focused on the polypharmacy failing to control BP, reducing salt intake, nutrition and physical activity. Recent work from China showed that educating children to be health ambassadors is effective in lowering salt intake and the first reference values for submaximal exercise BP were presented by local researchers. Australian data on the lack of research funding for cardiovascular researchers in Australia was also presented. This work, now under peer-review, highlighted that stagnation of funding in



APCH\_Brisbane photo by Anastasia Mihailidou

effects on sympathetic nervous activity. A multi-omics session had talks on the use of gut microbiome analyses for stroke therapy, regulation of the renin gene, and mechanisms associated with type 2 diabetes and cardiac hypertrophy. The APSH Invited Lectureship presentation delivered by Professor Markus Schlaich discussed device based approaches for the treatment of hypertension including an update on renal denervation for lowering BP.<sup>7</sup> The APSH Presidential Lecture was delivered by Professor Michael Stowasser who presented on advances in diagnosis and the genetics of primary aldosteronism.<sup>8</sup> Professor Alta Schutte delivered the HBPRCA RD Wright Lecture, in recognition of

cardiovascular research, combined with a lack of long-term job security, threatens to have profound effects on cardiovascular researcher retention in Australia, particularly for women.

In the junior researchers' corner, a highlight was the more than 10 oral and poster awards from the ISH, the HBPRCA and the Asian-Pacific Society of Hypertension awarded for high quality research presented by PhD students and early career researchers.<sup>12</sup> A joint New Investigator Symposium between the HBPRCA and the ISH included discussions on research impact, how to maintain a work-life balance in academia, and how to make and maintain international collaborations, followed by a networking event with support from senior HBPRCA and ISH members, was extremely successful and well-attended.

A combination of high calibre and innovative invited speakers, excellent original research presented by the attendees and engagement at all career levels made the APCH a successful meeting.



Prof Michael Stowasser and Prof Narsingh Verma

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# MENTORING:

## A powerful tool to improve diversity and inclusion in hypertension

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I am honoured to have been recently appointed as the new chair of the ISH Mentoring and Training Committee (MTC). The MTC is particularly close to my heart as one of its early versions paired me with Professor Gavin Lambert, from Swinburne University, Australia, back in 2012. Gavin's guidance over the years has been fundamental not only for my career progression, but without his support (and the support from my other mentors and sponsors) I would have probably left hypertension research by now. This should not come as a surprise considering we know that women drop out of science around my career stage<sup>1</sup>. Adding to being female, I came from a developing country where research is far from being a national priority and I was diagnosed with cancer 5 years ago, right during the 'make it or break it' PhD to post-doc transition. Individually, all of these are reasons that make people leave science, academia and even medicine<sup>2-4</sup>. Over the years, Gavin has given me critical feedback on fellowship and grant applications, nominated me for awards, prepared me for job interviews, discussed career opportunities and directions, and set me up for collaborations. His friendship, however, was essential during chemotherapy. I was very fortunate to have such a wonderful mentor, and in my new role as chair of the MTC I aim to ensure others are given a similar opportunity.

Mentoring is also important to me because of my personal value of fairness. The same way that I believe every person has the right to age healthily (and, thus, my passion about hypertension research), mentoring improves opportunities leading to better equity and inclusion to all<sup>4,5</sup>. Investing in mentoring should not only equip our junior members to become

better scientists and leaders, but also help ensure that our field has a bright future. While mentoring benefits all, it is particularly important for women<sup>4,6</sup>, who are under-represented in our community.

We are actively working to address some of the barriers junior researchers and women in hypertension face from a mentoring perspective. In partnership with the Women in Hypertension Research Committee, we have developed the New Parent in Hypertension Travel Award to support three ISH members with primary care responsibilities for a child/children to attend the 2020 ISH conference. What is new about this award is that it can be used in anyway the awardee sees fit to support their attendance: these awards could be used to support local child care, a babysitter or to bring someone else with them to look after their children. Similarly, we are also launching a new Developing Countries Travel Award to support the attendance of two ISH members that come from a developing country. The awardees of both travel grants will be appointed ISH mentors, who they will have the opportunity to meet face-to-face at the conference in Glasgow in May 2020. Applications for both awards are open until the 15th of March, and more information can be seen here.

We understand it can be nerve-racking to ask someone to be your mentor (believe me, I have been there!), but that's something the ISH-MTC can help you with. ***If you are looking for an International Society of Hypertension mentor, please fill in this form (it will take you less than 10 min and, believe me, it might change your life).*** Any age, gender and career stage ISH members are welcome