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Scientists on the Spot: A fraction of wisdom on heart failure

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Dr Mahmoud Abdellatif from the Medical University of Graz (Austria), interviews Prof. Carolyn Lam, a Senior Consultant at the National Heart Centre Singapore (Singapore).

Highlight: In this *OnLife* interview, Professor Carolyn Lam shares her expertise and major scientific findings on the subject of heart failure with preserved ejection fraction.

Summary of interview

To kick off the interview, Professor Carolyn Lam reflected on what she proudly considers her most significant scientific contributions to cardiovascular medicine. In this regard, two achievements stood out. First, she mentioned the Asian Heart Failure Study, which was an investigator-initiated observational study including 11 regions in Asia, thereby producing one of the very first multinational data on Asian patients with heart failure. The study resulted in multiple successful publications, revealing the differences not only between Asian and Western patients but also within different regions in Asia. Second, she highlighted the recent FDA approval of sacubitril/valsartan as the first evidence-based drug for heart failure with preserved ejection fraction (HFpEF) patients who, as the name implies, have preserved, but subnormal, ejection fraction. This approval was based on the results of PARAGON-HF, a clinical trial, for which Prof. Lam was a steering committee member.

On the topic of HFpEF, Prof. Lam discussed that it is a syndrome with multiple causes and, thus, instead of solely relying on ejection fraction to

stratify patients, a more holistic approach considering the diverse aetiologies involved in this syndrome is warranted. Prof. Lam also highlighted the importance of basic science to improve our understanding of the multi-faceted aspects of HFpEF pathogenesis, and how this might help in the development of novel and effective therapies, at least in HFpEF patient populations with homogenous phenotypes. Above all, she stressed the importance of HFpEF prevention and how available drugs, such as sodium-glucose transport protein 2 (SGLT2) inhibitors with proven cardiovascular efficacy against common risk factors for HFpEF, such as diabetes and obesity, might be of clinical value in this respect.

Next, Prof. Lam weighed in regarding whether sex plays a biological role in HFpEF development. First, she highlighted the possible confounding effects of relying on identical ejection fraction cut-offs for both men and women, despite a relatively higher ejection fraction in women due to the smaller heart and body size. That said, she then emphasized that there might still be biological reasoning behind the higher incidence of HFpEF in women than men, which could be related to sex differences in the immune response, as well as ectopic fat accumulation.

Towards the end, Prof. Lam shared her advice with young cardiovascular researchers, where she stressed the need for continuous learning and following one's own scientific passions. She mentioned that only through following one's scientific interests can we be kept driven and eventually achieve success. She also touched on the importance of differentiating between good advice, which one should follow and that which might be distracting from the path to success. As such, young researchers should strike a fine balance between listening—and following their scientific interests.

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Biography: Dr Mahmoud Abdellatif is a post-doctoral research fellow at the Department of Cardiology, Medical University of Graz (Austria) and the Kroemer Lab (Institute Gustave Roussy and Centre de Recherche des Cordeliers, France). In his research, he studies the molecular mechanisms of cardiovascular aging to exploit them in the development of effective interventions that extend lifespan and delay late-life chronic diseases, including heart failure. His contributions to the field include discovering the cardioprotective and longevity-promoting effects of spermidine, as a natural autophagy inducer and caloric restriction mimetic. More recently, he found that the NAD⁺ precursor nicotinamide—yet another caloric restriction mimetic—might be effective against a predominant and intractable form of heart failure in the elderly, known as heart failure with preserved ejection fraction. Mahmoud received various awards for his work including, the Sanofi Aventis Prize (2017), the Guido Tarone award of the ESC Heart Failure Association (2020) and the German Society of Cardiology AG23 Heart and Diabetes research prize (2021). As a board member of the European Society of Cardiology committee for young cardiovascular professionals and the Scientists of Tomorrow nucleus, he is actively involved in supporting and disseminating basic science amongst young scientists and clinicians.



Biography: Dr Lam is a Senior Consultant at NHCS specializing in heart failure and recognized globally for expertise in heart failure with preserved ejection fraction. She is a recipient of the NMRC Senior Investigator Clinician Scientist Award, Programme Lead of A*STaR's Asian neTwork for Translational Research and Cardiovascular Trials (ATTRaCT), Principal Investigator of ASIAN-HF (multinational study across 11 Asian countries), and Steering Committee member of multiple global clinical trials. She has published >200 articles in journals including *NEJM*, *JAMA*, *Lancet*, *Circulation*, and *European Heart Journal*. She serves as Associate Editor for *Circulation* and the *European Journal of Heart Failure*. Dr Lam is heard weekly on the global podcast 'Circulation On The Run' and seen regularly on television as the Resident Doctor of 'Body and Soul' by MediaCorp Singapore.