**Diabetes in Asia- From epidemiology to precision medicine**

Ronald C.W. Ma

S.H. Ho Professor of Diabetes

Department of Medicine and Therapeutics

The Chinese University of Hong Kong

**Abstract**
Asia is one of the epicentres of the global pandemic of diabetes. Using several cohorts including the Hong Kong Diabetes Register, Hong Kong Diabetes Biobank, the population-based Hong Kong Diabetes Surveillance Database (HKDSD), and the multi-centre Joint Asia Diabetes Evaluation (JADE) program, our group has systematically examined the key determinants, trajectories and outcomes for individuals with or at risk of diabetes in Asia. This has highlighted several emerging trends, including increasing burden of young-onset diabetes, increasing gestational diabetes complicating pregnancy, and also diabetic kidney disease, including increasing normoalbuminuric DKD.

In addition to highlighting the changing landscape and burden from diabetes in Asian populations, these studies have highlighted the increasing challenge arising from the heterogeneity of diabetes, especially among those with young-onset diabetes. Resolving this heterogeneity of diabetes can help facilitate personalized treatment and precision medicine in diabetes. Recent advances have included the use of clinical characteristics to empower subtyping of adult-onset diabetes through different clustering strategies. Recent advances in precision prognostics have also highlighted strategies that can identify high-risk individuals for more intensive treatment. An international consortium initiated by the American Diabetes Association and European Association for the Study of Diabetes (EASD) has reviewed the landscape for precision medicine in diabetes to map our current understanding, as well as outline future directions. The ability to resolve the heterogeneity in diabetes, and thereby provide treatment that is best tailored to the underlying pathophysiology, provides exciting opportunities to realize precision medicine in diabetes towards better patient outcomes.

Acknowledgement: RGC Area of Excellence Scheme (AoE/M-401/24-R).

References

1. Leslie RD, Ma RCW, Franks PW, Nadeau KJ, Pearson ER, Redondo MJ. Understanding diabetes heterogeneity: key steps towards precision medicine in diabetes. Lancet Diabetes Endocrinol. 2023 Nov;11(11):848-860.
2. Tobias D, Merino J et al, Second International Consensus report on gaps and opportunities for the clinical translation of precision diabetes medicine. Nature Medicine 2023; 29: 2438-2457.