Rinkoo Dalan

Senior Consultant, Endocrinology, TTSH
Associate Professor, Lee Kong Chian School of Medicine, NTU

Research Interests:

- Vascular Complications
- Cardio-Metabolic Risk Factors
- Endocrinology

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Biography

Dr Rinkoo Dalan, an endocrinologist, started her research career after she embarked on a joint DUKE-NUS Tanoto Diabetes Initiative and NHG Clinician scientist scheme awarded study to investigate the impact of vitamin D supplementation on vascular function in diabetes. During the course of this study, she received support from the TTSH center grant scheme which allowed her to expand her research to study vascular function comprehensively in multiple vascular beds. The NMRC Transition Award in 2014, enabled the development of a resource of diabetes patients with extensive vascular phenotyping. She is currently studying therapeutics in recently diagnosed diabetes patients to ascertain the effects on the vascular function through the NMRC, Clinician Scientist Award. The methods used for measurement of vascular function includes in-vivo physiological methods (microvascular and macrovascular function), molecular platforms (lab-on chip blood vessels) through collaboration with NTU, biomarkers of inflammation, oxidative stress, lipidomes, endothelial activation and thrombosis. These are integrated together with clinical cardiometabolic profiles and longitudinal outcomes to build phenomenological models. She has recently completed a master's degree in clinical trials from the University of London, United Kingdom. A co-investigator of the HELIOS study, she has collaborations with multiple academic & clinical institutions in Singapore.

Selected Publications

- Dalan R, Jong M, Choo R, Chew DE, Leow MK. Predictors of cardiovascular complication in patients with diabetes mellitus: a 5-year follow-up study in a multiethnic population of Singapore: CREDENCE II study. *Int J Cardiol*. 2013; 169(4):e67-9. doi: 10.1016/j.ijcard.2013.08.128. PMID: 24063922.
- Dalan R, Earnest A, Leow MK. Ethnic variation in the correlation between fasting glucose concentration and glycated hemoglobin (HbA1c). *Endocr Pract*. 2013; 19(5):812-7. doi: 10.4158/EP12417.OR. PMID: 23757612.
- Dalan R, Liew H, Assam PN, Chan ES, Siddiqui FJ, Tan AW, Chew DE, Boehm BO, Leow MK. A randomized controlled trial evaluating the impact of targeted vitamin D supplementation on endothelial function in type 2 diabetes mellitus: The DIMENSION trial. *Diab Vasc Dis Res*. 2016; 13(3):192-200. doi: 10.1177/1479164115621667. PMID: 26818228; PMCID: PMC4834510.
- Tay HM, Dalan R, Li KHH, Boehm BO, Hou HW. A Novel Microdevice for Rapid Neutrophil Purification and Phenotyping in Type 2 Diabetes Mellitus. *Small*. 2018; 14(6). doi: 10.1002/smll.201702832. PMID: 29168915.
- Bruinstroop E, Dalan R, Cao Y, Bee YM, Chandran K, Cho LW, Soh SB, Teo EK, Toh SA, Leow MKS, Sinha RA, Sadananthan SA, Michael N, Stapleton HM, Leung C, Angus PW, Patel SK, Burrell LM, Lim SC, Sum CF, Velan SS,

Yen PM. Low-Dose Levothyroxine Reduces Intrahepatic Lipid Content in Patients With Type 2 Diabetes Mellitus and NAFLD. *J Clin Endocrinol Metab*. 2018; 103(7):2698-2706. doi: 10.1210/jc.2018-00475. PMID: 29718334.

- Dalan R, Goh S, Bing S, Seneviratna A, Phua CT. Proof-of-Concept Study for an Enhanced Surrogate Marker of Endothelial Function in Diabetes. *Sci Rep*. 2018; 8(1):8649. doi: 10.1038/s41598-018-26931-2. PMID: 29872121; PMCID: PMC5988679.
- Dalan R, Chin H, Hoe J, Chen A, Tan H, Boehm BO, Chua KS. Adipsic Diabetes Insipidus-The Challenging Combination of Polyuria and Adipsia: A Case Report and Review of Literature. *Front Endocrinol (Lausanne)*. 2019; 10:630. doi: 10.3389/fendo.2019.00630. PMID: 31620086; PMCID: PMC6759785.
- Dalan R, Boehm BO. The implications of COVID-19 infection on the endothelium: A metabolic vascular perspective. *Diabetes Metab Res Rev*. 2020; 1:e3402. doi: 10.1002/dmrr.3402. PMID: 32871617.
- Dalan R, Goh LL, Lim CJ, Seneviratna A, Liew H, Seow CJ, Xia L, Chew DEK, Leow MKS, Boehm BO. Impact of Vitamin E supplementation on vascular function in haptoglobin genotype stratified diabetes patients (EVAS Trial): a randomized controlled trial. *Nutr Diabetes*. 2020; 10(1):13. doi: 10.1038/s41387-020-0116-7. PMID: 32341356; PMCID: PMC7186220.
- Bornstein SR, Dalan R R, Hopkins D, Mingrone G, Boehm BO. Endocrine and metabolic link to coronavirus infection. *Nat Rev Endocrinol*. 2020; 16(6):297-298. doi: 10.1038/s41574-020-0353-9. PMID: 32242089; PMCID: PMC7113912.

Notable Research Awards and Grants From Past 5 Years

Name of Awards & Grants	Year Obtained
National Health Innovation Centre (NHIC) I2D (Innovation to Develop) Grant for "Proof-of-concept for an Enhanced Surrogate Marker of Endothelial Function for Macro-Cardiovascular Disease Risks in Patients Diagnosed with Diabetes Mellitus"	2015
NMRC Clinician Scientist Award (CSA) for "Effects of Dapagliflozin and Metformin on Vascular Function in Newly-Diagnosed Treatment-Naïve Type 2 Diabetes – A Randomized Controlled Trial (DMVascular Study)"	2018
NHG-LKCMedicine Clinician Scientist Fellowship (CSF)	2019

Translating Research Into Healthcare

- Pain-free way to test health of blood vessels - Researchers at Nanyang Poly and TTSH developing non-invasive device to measure blood flow. *The Straits Times*. Published 12 January 2019. https://www.ttsh.com.sg/About-TTSH/TTSH-News/Pages/Pain-free-way-to-test-health-of-blood-vessels.aspx