FREE PAPER PRESENTATION

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Secretariat 'Diabetes Asia 2023' Conference
National Diabetes Institute (NADI)
No. 1, Jalan SS 3/50 47300 Petaling Jaya Selangor, MALAYSIA
Tel: +603-7876 1676 / 7876 1677 Fax: +603-7876 1679
Email: enquiry@nadidiabetes.com.my
Website: www.nadidiabetes.com.my / www.nadidac.com.my

Date : **12th October 2023 (Thursday)**
Time : **1400 – 1530**
Venue : **Tun Lanang 1**
Chief : **Professor Dato' Mafauzy Mohamed,** *Universiti Sains Malaysia Hospital*
Head Judge : **Professor Norlaila Mustafa,** *Hospital Canselor Tuanku Muhriz UKM*
Judge : **Professor G.R Letchuman,** *Monash University Malaysia*
: **Dr. Fatimah Zaherah Mohamed Shah,** *Universiti Teknologi Mara*

FREE PAPER NO. 1

PREDICTION OF CORONARY HEART DISEASE BY A CLINICAL RISK SCORE AMONG TYPE 2 DIABETIC PARTICIPANTS IN THE MALAYSIAN COHORT

Khairul Anwar Zarkasi[1,2], Norfazilah Ahmad[3], Noraidatulakma Abdullah[1,4], Nor Azian Abdul Murad[1], and Rahman Jamal[1,*]

[1]UKM Medical Molecular Biology Institute (UMBI), Universiti Kebangsaan Malaysia
[2]Biochemistry Unit, Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia
[3]Department of Community Health, Faculty of Medicine, Universiti Kebangsaan Malaysia
[4]Faculty of Health Sciences, Universiti Kebangsaan Malaysia

Although the Framingham risk score (FRS) is advocated in the primary prevention of cardiovascular disease (CVD) globally, the application of FRS is said to be less accurate among type 2 diabetics (T2D). The research question here is whether a locally developed clinical risk score (CRS) could perform better than the FRS. Hence, this study aimed to construct a CRS to predict CHD death among The Malaysian Cohort (TMC) T2D participants and compare its performance with FRS. In Phase I, participants' characteristics between "T2DM+CHD" (n=224) and "T2DM" (n=625) were assessed. Variables significantly associated with CHD death on multiple logistic regression were included in the CRS. Each participant was then scored using both risk scores. In Phase II, participants without known CHD during recruitment (n=806) were categorised into high-risk and low-risk based on CRS and retrospectively followed up until deceased. The equation for CRS included gender, marital status, education level, smoking habit, fasting glucose, HbA_{1c}, triglyceride, LDL-C, and diabetes duration. In Phase I, higher CRS scores were observed in the "T2DM+CHD" than in "T2DM", while the area under the curve (AUC) confirmed CRS's ability to classify CHD death across ethnicities. On the contrary, these observations were absent for FRS. High-risk CRS (cut-off point=0.2409, AUC=0.705, sensitivity=69.6%, specificity=60.0%) were more likely to have CHD death with odds ratio of 2.87, 5.20, and 4.38 for Malay, Chinese, and Indian, respectively. In Phase II, high-risk CRS consistently developed earlier CHD death than low-risk CRS, which could be observed among Malay (7.49 vs 8.47 years), Chinese (7.77 vs 9.36 years), and Indian (6.99 vs 8.96 years). Meanwhile, high-risk CRS had higher CHD death risk with hazard ratios of 2.01, 3.50, and 2.18 for respective ethnicity. Findings from this study illustrated the potential application of CRS in the personalised management of CHD complications among T2D patients in Malaysia.

Keywords: CHD death; coronary heart disease; type 2 diabetes mellitus; clinical risk score; Framingham risk score; The Malaysian Cohort Project