

Results: Acetylcholine efficacy [pEC50(acetylcholine)] for NG, DM, DM+Met and DM+MP were 5.5(0.3), 4.7(0.6), 6.6(0.2) and 5.9(0.4) respectively. Vascular reactivity of DM group was significantly decreased compared to NG group; while DM+Met and DM+MP groups showed significant improvement in endothelium-dependent relaxation compared to DM group. In vitro evaluation showed that MP maximal relaxation [Emax(MP)] and efficacy [pEC50(MP)] were 94(24)% and 3.1(0.5) respectively. pEC50(MP) were significantly reduced after incubation with elevated glucose [2.1(0.2)], L-NAME [2.4(0.2)] and methylene blue [2.3(0.4)], respectively, implying vasodilation by MP is endothelium-dependent involving nitric oxide-cGMP signaling pathway. Emax(MP) was not affected by acute hyperglycemia [65.3(24.4)].

Conclusion: MP possesses vasoprotective effect on aortic endothelium in acute and chronic hyperglycemia. Vasomodulation by MP is mediated through nitric oxide and its downstream transduction mechanism. Future researches on vascular ion channels interaction, cellular and molecular mechanisms of MP are warranted.

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3. The Association Between N-Terminal B-Type Natriuretic Peptide and One Year Clinical Outcome in Patients with Acute Myocardial Infarction: A Multicenter Study

Koh Keng Tat^a, S.S.N. Tan^{b,c}, P.P. Sim^d, L.L. Tiong^{b,c}, M.Y. Ku^{b,c}, I.T. Wong^e, K.Y. Yong^f, K.T. Lau^f, O.B. Chandan^g, S.L. Fong^g, T.L.L. Sia^g, F.E.P. Shu^h, Y.Y. Oon^a, C.S. Khaw^a, K.H. Ho^a, C.T. Tan^a, N.Z. Khiew^a, Y.L. Cham^a, S. Asri^{a,i}, C.Y. Voon^a, M.A. Nor Hanim^a, A.Y.Y. Fong^{a,c}, T.K. Ong^a

^aDepartment of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia

^bDepartment of Pharmacy, Sarawak General Hospital, Kuching, Malaysia

^cClinical Research Centre, Sarawak General Hospital, Kuching, Malaysia

^dDepartment of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Malaysia

^eDepartment of Medicine, Sibul Hospital, Malaysia

^fDepartment of Medicine, Miri Hospital, Malaysia

^gDepartment of Medicine, Bintulu Hospital, Malaysia

^hDepartment of Medicine, Kapit Hospital, Malaysia

ⁱFaculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia

Background: NT-proBNP is a useful biomarker in the management of heart failure. However, there is conflicting evidence for the prognostic value of NT-ProBNP in acute myocardial infarction (AMI).

Objectives:

- (1) To explore the association between NT-proBNP and 1-year cardiac related mortality in AMI patients.
- (2) To explore the association between NT-proBNP and 1-year risk of sudden cardiac death or ventricular arrhythmia, readmission for heart failure, readmission for acute coronary syndrome (ACS) and stroke.

Methods: We conducted a multicenter, prospective observational study recruiting patients presenting with AMI between 1-August-2016 to 31-January-2017, involving 1 cardiology referral center and 4 non-cardiology hospitals. NT-proBNP levels (Alere Triage®, US) were measured within 24 hours of AMI diagnosis. Patients were followed-up for 1 year.

Results: A total of 142 patients were recruited. Mean age was 55.5±10.2 years, 90.8% male and 63% were STEMI. The mean LVEF was 50±14%. The NT-proBNP levels ranged from 20 to 16700 pg/ml, with a median of 703 pg/ml. From the ROC curve, optimal cutoff value for NT-proBNP of 1240 pg/ml was derived. Kaplan-Meier

survival analysis for the 1-year cardiac related mortality was significantly higher for patients with NT-proBNP level of ≥1240 pg/ml (3.1% vs. 18.2%; HR 6.32; 95%CI 1.68, 23.82; p=0.006). The 1-year risk of sudden cardiac death or ventricular arrhythmia was also significantly higher for patients with NT-proBNP level of ≥1240 pg/ml (3.1% vs 13.6%; HR 4.63; 95%CI 1.16, 18.51; p=0.030). Readmission for heart failure was also higher for patients with higher NT-proBNP level (2.0% vs 15.9%; HR 8.42; 95%CI 1.75, 40.56; p=0.008). Readmission for ACS and stroke were not associated with higher NT-proBNP levels (p>0.5). Overall, patients with NT-proBNP level of ≥1240 pg/ml had significantly higher all-cause mortality (4.1% vs 20.5%; HR 5.324; 95%CI 1.64, 17.30; p<0.001).

Conclusion: NT-proBNP is a useful point-of-care risk stratification biomarker in AMI. A NT-proBNP level of ≥1240 pg/ml was associated with significant higher risks of mortality, readmission for heart failure and sudden death or ventricular arrhythmia.

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4. Cardiac Siderosis Severity Assessment Using CMR T2* Sequence Among Transfusion-Dependent Thalassaemia Patients: Experience in Hospital Seberang Jaya

Abu Sufian Ahmad^a, Noor Khairiah A. Karim^a, Rohayu Hami^b, Faraizah Abd Karim^c, Mohamad Nazrulhisham Mad Naser^d, Mazedza Murad^e, Roslina Abd Halim^e

^aRegenerative Medicine Cluster, Advanced Medical and Dental Institute, Universiti Sains Malaysia, Bertam, Kepala Batas, Pulau Pinang, Malaysia

^bLifestyle Science Cluster, Advanced Medical and Dental Institute, Universiti Sains Malaysia, Bertam, Kepala Batas, Pulau Pinang, Malaysia

^cTransfusion Medicine Unit, Pathology Department, Hospital Ampang, Selangor, Malaysia

^dCardiology Department, Hospital Pu/au Pinang, Pu/au Pinang, Malaysia

^eRadiology Department, Hospital Seberang Jaya, Pu/au Pinang, Malaysia

Background: In Malaysia, approximately 40% of Thalassaemia patients were dependent on regular blood transfusion for survival. This treatment had rendered them susceptible to the complication of cardiac siderosis. The prevalence of cardiac siderosis among these patients in Malaysia has not been published despite the ever-increasing demand to monitor it using cardiac magnetic resonance imaging (CMR) T2* sequence.

Objective: The purpose of this study was to determine the prevalence of cardiac siderosis in the northern part of peninsular Malaysia and its association with other parameters that were used to monitor iron overload and its complication: serum ferritin, liver T2* and left ventricular ejection fraction (LVEF).

Methods: A retrospective single centred study was conducted involving 1187 transfusion-dependent Thalassaemia patients who were referred by multiple hospitals in northern region for CMR to assess cardiac and liver iron status between January 2012 and May 2017. All enrolled patients had T2* sequence protocol performed on a 1.5 Tesla Philips Achieva MR unit at Hospital Seberang Jaya which was further analysed using CMR tools software. Demographic and clinical information including relevant investigations pertaining to iron overload assessment were recorded and statistical analysis was performed.

Results: The prevalence of cardiac siderosis was 16.8%; 42.0% was categorised as severe, 24.0% moderate and 34.0% mild. The mean age (±SD) for those with cardiac siderosis was 20.9 (10.2) years with male predominance. Beta thalassaemia major patients constituted most of the cardiac siderosis cases (57.0%). The mean (±SD) serum ferritin, liver T2* and LVEF in these patients was 6249.05