THE EFFECTS OF RENAL DYSFUNCTION ON PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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ABSTRAK

Latar belakang: Kegagalan buah pinggang kronik telah dikenalpasti sebagai salah satu punca utama yang menyebabkan kematian akibat penyakit jantung. Ia juga telah dikaitkan dengan komplikasi-komplikasi penting yang berlaku selepas pembedahan pintasan koronari jantung. Kajian ini dibuat bertujuan untuk melihat hubungkait antara kegagalan buah pinggang dan komplikasi-komplikasi serta kadar kematian di antara pesakit-pesakit yang menjalani pembedahan pintasan koronari jantung di Hospital Universiti Sains Malaysia.

Kaedah kajian: Sebanyak 215 rekod-rekod pesakit yang telah menjalani pembedahan pintasan koronari jantung antara 1hb Januari 2002 dan 31hb Disember 2005 di Hospital Universiti Sains Malaysia telah dikumpulkan (jangkamasa empat tahun). Pesakit-pesakit tersebut telah dibahagikan kepada 2 kumpulan berdasarkan anggaran fungsi buah pinggang yang dikira mengikut formula Cockcroft-Gault. Anggaran fungsi buah pinggang yang kurang daripada 60 ml/min diklasifikasikan sebagai mempunyai kegagalan buah pinggang. Data – data retrospektif tersebut kemudian dianalisa untuk membandingkan kedua – dua kumpulan berkenaan dari segi demografik, dan khususnya komplikasi – komplikasi yang berkaitan selepas prosedur, termasuk kadar kematian.

Keputusan: Kesemua 215 rekod bagi 215 pesakit telah berjaya dikutip dan dianalisa. Seramai 117 (54.4%) orang pesakit dikenalpasti mengidap penyakit kegagalan buah

pinggang, yang didefinisikan mengikut anggaran fungsi buah pinggang yang tersebut di atas. Pesakit-pesakit di dalam kumpulan ini telah dikenalpasti mempunyai indeks BMI yang berkurangan, adalah lebih tua, dan mempunyai fungsi jantung yang lebih lemah (ejection fraction) berbanding dengan pesakit-pesakit yang mempunyai fungsi buah pinggang yang baik. Mereka juga telah didapati lebih banyak menghidapi penyakit kencing manis dan darah tinggi ($p=0.005$ dan 0.031). Semasa pembedahan, kurang cecair "cardioplegia" dan jangkamasa "aortic cross-clamp" telah digunakan oleh kumpulan pesakit-pesakit ini. Analisa ke atas data-data pasca pembedahan pula menunjukkan bahawa pesakit-pesakit yang menghidap kegagalan buah pinggang kronik mempunyai lebih peluang untuk mendapat kegagalan buah pinggang akut ($p<0.001$) dan penyakit jantung "arrhythmia" ($p=0.047$) selepas pembedahan. Seramai 10 orang pesakit yang telah meninggal dunia di dalam jangkamasa 30 hari selepas pembedahan, dan kadar kematian keseluruhan selepas 3 tahun adalah 15 orang. Walaubagaimanapun, kadar kematian di antara kedua-dua kumpulan tersebut telah didapati tidak berbeza antara satu sama lain.

Kesimpulan: Kajian ini telah menyokong bukti-bukti bahawa kegagalan buah pinggang kronik menjadi factor penting terhadap komplikasi-komplikasi yang berlaku selepas pembedahan pintasan koronari jantung. Bagaimanapun, kaitannya dengan kadar kematian selepas pembedahan tidak dapat dibuktikan, tidak seperti yang telah dibuktikan oleh kajian – kajian berkaitan yang terdahulu.

ABSTRACT

Background: Chronic kidney disease (CKD) has been known to be a potent risk factor for cardiovascular death. It has been implicated in the adverse outcomes seen in patients after their coronary artery bypass grafting (CABG). The aim of this study is to evaluate the relation between renal dysfunction and the morbidity and mortality following CABG.

Methodology: Records of 215 patients who underwent CABG between the 1st of January 2002 and the 31st of December 2005 at the Universiti Sains Malaysia Hospital, Kubang Kerian were collected. These patients were divided into 2 groups, according to their estimated glomerular filtration rate (GFR) using the Cockcroft-Gault formula. Estimated GFR of less than 60 ml/min were grouped into the renal dysfunction, whilst GFR >60ml/min were grouped as non-renal dysfunction. These retrospective data were analysed for its demographic and outcomes after the procedure, including the short and long term mortality rates.

Results: All the 215 records representing 215 patients were successfully collected and analysed. 117 (54.4%) patients had estimated GFR <60 ml/min and labelled as renal dysfunction group. This group of patient had a significantly lower body mass index, poorer pre-operative ejection fraction and was older. There were also more incidences of diabetes mellitus and hypertension within this group (p=0.005 and 0.031). Intra-operative data showed that the renal dysfunction group had shorter

cross-clamp time ($p=0.018$) and used up less cardioplegia ($p=0.004$) during the bypass. Post-operative data analysis showed that the patients with renal dysfunction had more chance of developing acute renal failure ($p<0.001$) and arrhythmia ($p=0.047$). A total 10 patients who died within 30 days and 15 patients died within 3 years of CABG, but there was no significant difference noted between these 2 groups.

Conclusion: This study supported the evidences that pre-operative renal dysfunction, even sub clinical is associated with the adverse outcomes seen post CABG, especially acute renal failure and arrhythmia. The relation between renal dysfunction and post-operative mortalities was however failed to be demonstrated in this study, as compared to many other studies before.