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Outcome analysis of diabetic patients with or without albuminuria

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Objective: This study retrospectively compared the clinical character and outcome of type 2 diabetic patients with normo- (below 30 mg/L), micro- (30–299 mg/L) and macro- (above 300 mg/L) albuminuria

Research design and methods: 79 type 2 diabetic nephropathic (DN) patients were retrospectively reviewed from 2013/01 to 2016/01. All patients were treated with oral anti-diabetes drugs and/or insulin; either angiotensin receptor blockers (ARB) or angiotensin-converting enzyme inhibitors (ACEI) were given in the albuminuria groups. Clinical data including urine albumin creatinine ratio (UACR), glycosylated hemoglobin (HbA1c), systolic blood pressure (SBP) and estimated glomerular filtration rate (eGFR) were analyzed. Patients were divided into normo-, micro- and macro-albuminuria groups according to their latest amount of spot urine albumin. All data were analyzed with Generalized Estimating Equation (GEE) to evaluate the changes in SBP, HbA1c, UACR and eGFR.

Results: Our study includes 33 (41.8%) normal, 13 (16.5%) micro- and 33 (41.8%) macro-albuminuria patients aged 62.1 ± 10.6 , 57.8 ± 11.9 and 65.6 ± 11.4 year-old, respectively. After adjusting age, sex and duration of diabetes, both albuminuric groups showed statistical significance of higher UACR (micro-: $B = 103.66$, $SE = 40.24$, $p = 0.01$, macro-: $B = 1169$, $SE = 164.5$, $p < 0.0001$) during the 3-year follow-up period. Macro-albuminuria group showed significantly higher level of HbA1c ($B = 1.067$, $SE = 0.48$, $p = 0.027$) and SBP ($B = 11.89$, $SE = 4.25$, $p = 0.005$) when compared to normal albuminuria group. Both normo- ($B = -2.03/\text{year}$, $SE = 0.98$, $p = 0.038$) and macro- ($B = 200.76/\text{year}$, $SE = 86.31$, $p = 0.02$) albuminuria groups showed significant annual UACR increment. Deterioration of renal function was found statistically significance in both normo- ($B = -4.08/\text{year}$, $SE = 0.71$, $P < .0001$) and macro- ($B = 2.8/\text{year}$, $SE = 0.87$, $P = 0.001$) albuminuria groups by reducing annual eGFR without significant difference in their decreasing slope in all 3 groups. Finally, the rate of major adverse cardiac events (MACE) was similar in all 3 groups.

Conclusions: Renin-angiotensin system blockers may protect DN patients from renal function exacerbation by reducing eGFR but not by preventing urinary protein loss in the abnormal albuminuria groups regardless of their degree of severity.

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A study of increasing access to diabetic retinopathy screening and referral if indicated

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Objective: The World Health Organization (WHO) statistics show that the possibility of suffering from blindness among diabetic patients is 10 to 20 times higher than that among people without diabetes. One researcher's study also shows that the prevalence of diabetic retinopathy ranges from 15% to 45%. As such, a simplified ophthalmoscopy, ease of screening and referral will hopefully increase the access to diabetic retinopathy screening and referral if indicated, and more importantly, the knowledge of and prevention against diabetic eye disorders in diabetic patients.

Method: Our Health Care Center has been equipped with ophthalmoscopy instruments for screening. Healthcare education and retinal photography may be performed at the same venue, improving the accessibility to screening in patients. The environmental features are designed to facilitate health promotion, and moreover, referral if indicated to our ophthalmologists is available for further follow-up and treatment.

Result: Through this program, 3,278 patients successfully joined our hospital's Diabetes Shared Care Network. During the period when the program was active (May 25, 2015 to October 23, 2015, for 5 months), 1,772 diabetic patients received screening. Compared with the same period in 2014, the number grew by 616 with a growth rate of 53.3%. Out of the 24 patients receiving ophthalmoscopy and indicated for referral, 14 were successfully referred to Ophthalmology, with a success rate of 58.3%. According to the analysis of the other 10 patients, 30% indicated that they did not feel ill while the 20% reported that they were under follow-up by Ophthalmology.

Conclusion: Education on preventing diabetic eye complications and simple access may substantially improve the screening of diabetic eye disorders. The referral if indicated, however, is paramount. Over 40% of diabetic patients still refuse to be referred to Ophthalmology; the referral rate is only 58.3%. The reason for most cases is that patients do not have eye discomfort. The pre-program ophthalmoscopy focused on the number of screened patients (quantity) rather than further ophthalmology care for patients (quality). In the light of this program, it is hopeful that diabetic patients may be accessible to more comprehensive care for their eyes as a result of increased referral rate in screened patients if indicated, as well as widespread concept of early screening and early treatment among healthcare professionals and patients.

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Correlation of glycemic control and arterial stiffness in patients with type 2 diabetes mellitus

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The PWV has been identified as an independent predictor for cardiovascular related mortality. The uncontrolled T2DM induced hyperglycemic condition and caused depletion of endothelial nitric oxide (NO) which further leading to endothelial dysfunction.

In this study we showed that poor glycemic control in patients with T2DM is associated with abnormal arterial stiffness.

Methods: This is a cross sectional study. We recruited 50 patients with T2DM from out patient clinic. We excluded patient undergo Dialysis treatment, haemoglobin level < 10 gr/dL, and all of the sample were performed baseline data including the blood pressure, HbA1c levels and all patient were measured the arterial stiffness using ba-PWV. We evaluate the relationship of HbA1c levels and the result of ba-PWV test.

Results: The mean of age was $58,98 \pm 12,28$ years, and the mean of HbA1c level: $7,69 \pm 0,98\%$. The mean of PWV: $16,41 \pm 2,43$ m/second. Test results showed the correlation between HbA1c level and PWV and shows strong and significant result ($r = 0,403$; $P < 0,05$).

Conclusion: There was a significant correlation between Glycaemic control and arterial stiffnes in T2DM.

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DESMOND...Does it deliver for Aboriginal and Torres Strait Islander people

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Background: Traditional methods of health promotion and education such as the distribution of materials and didactic program delivery has had limited success in reducing the burden of chronic diseases, especially in rural and remote Aboriginal communities. Evidence behind using a patient empowerment approach is mounting, with many