

ABSTRACT

Renin angiotensin-angiotensinogen system (RAAS) blocker is the recommended first line antihypertensive therapy for diabetes patients with elevated blood pressure. To the best of our knowledge, there is no known best angiotensin receptor blocker (ARB) to treat hypertension in type 2 diabetes mellitus (T2DM) patients. This study aims to investigate glycated haemoglobin (HbA1c) as well as total cholesterol (TC) lowering effect associated with the type 2 diabetes mellitus (T2DM) patients who were treated with telmisartan or others ARBs. A total of 78 hypertensive T2DM patients (telmisartan: N=38 patients; other ARBs: N=40 patients) were recruited in this retrospective observational study. This study was carried in the outpatient a tertiary referral hospital in Sungai Petani, Kedah. HbA1c and total cholesterol levels at baseline, after three months and six months of study were studied. The mean age of the patients was 63.76 ± 8.03 years old. Median of duration of diabetes was reported as 9 years with 1 year of interquartile range. The number of respondents for Malay occupied 48.7%, while 32.1% and 19.2% for both Indians and Chinese respectively. 48.7% patients were using telmisartan and the remaining 51.3% were using other ARBs (losartan, irbesartan, and valsartan). The baseline median HbA1c for telmisartan group was 8.6% and 8.4% for other ARBs group. Median baseline for total cholesterol for telmisartan group was 4.2 mmol/L and 4.15mmol/L in other ARBs group. No statistically significant for all baseline demographic data between telmisartan and other ARBs group except ethnicity ($P < 0.05$). Percentage changed in HbA1c after six months of study and baseline in the telmisartan group was decreased by 3.49% and 6.18% in other ARBs group ($P > 0.05$). To explore the probability of patient with HbA1c less than 6.5% in telmisartan with reference to other ARBs at the end of the study, a logistic regression analysis was performed. Result of odd ratio of logistic regression analysis was stated as 1.28 with $p > 0.05$ (95% CI: 0.388-4.223), which is not statistically significant. In the sub-group analysis, 80mg

per day telmisartan group (after three months of study, n=4 patients; after six months of study, n=6 patients) had more patients reaching the target HbA1c value with less than 6.5% than 40mg per day telmisartan group (after three months of study, n=1 patients; after six months of study, n=1 patients). However, the difference is not significant, $p>0.05$. Both telmisartan and other ARBs group had an increase of 2.38% with $p>0.05$ in terms of TC level. Neutral effect was shown with no statistically significant ($p>0.05$) difference between telmisartan and other ARBs in terms of HbA1c and TC lowering effect. The odds ratio for HbA1c below 6.5% in telmisartan treated patients compared to those who received other ARBs was reported to be 1.28 (95% CI: 0.39 to 4.22).