



Service Priorities and Programmes Electronic Presentations

Convention ID: 489

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Review of the Clinical Efficacy of New Oral Anti-diabetic Drugs in a Primary Care Diabetes Clinic

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Keywords:

Primary Care

Diabetes

Efficacy

Oral Anti-diabetic Drugs

Review

Introduction

For many years, metformin and sulphonylureas were the only two available effective classes of oral anti-diabetic drugs for treatment of type 2 diabetes in general out-patients clinics (GOPCs). Patients with suboptimal diabetic control while on the 2 drugs would require either initiation of insulin therapy or referral to Medical Specialist Out-patient Clinic. Dipeptidyl-peptidase-4 (DPP-4) inhibitors for indicated type 2 diabetes patients were introduced under Risk Assessment and Management Programme – Diabetes Mellitus (RAMP-DM) in 2013 in a KEC GOPC in order to enhance diabetic care. However, there is little research evidence on the clinical efficacy of DPP-4 inhibitors in lowering HbA1c levels when used in combination with other oral anti-diabetic drugs in primary care in Hong Kong.

Objectives

To review the clinical efficacy of DPP-4 inhibitors in a KEC primary care diabetes clinic.

Methodology

Updated clinical guidelines for the use of anti-diabetic drugs were prepared by senior family physicians of the Department before the introduction of DPP-4 inhibitors. Three DPP-4 inhibitors were introduced. Medical records of all patients being initiated with DPP-4 inhibitors from 1 Oct 2013 to 30 Sep 2015 in the clinic were reviewed. All data were retrieved by Clinical Data Analysis Reporting System (CDARS) and analysed by SPSS version 21.

Result

118 patients (46 male, 72 female) with HbA1c ≥ 7.5 were being initiated with DPP-4 inhibitors during the study period. The mean age was 64.7 years (range 40-83). 73 patients were using linagliptin, 34 patients were using sitagliptin, and 11 patients were

using vildagliptin. There was a significant drop of mean HbA1c of all patients from 8.05% (SD 0.56) to 6.95% (SD 0.56) ($p < 0.001$) at 3 months, to 7.23% (SD 0.70) ($p < 0.001$) at 6 months and to 7.33% (SD 0.72) ($p < 0.001$) at 12 months after initiation of DPP4 inhibitors. The mean HbA1c differences were 1.10% (SD 0.60) (95% CI 0.99%-1.21%) at 3 months, 0.82% (SD 0.74) (95% CI 0.68%-0.956%) at 6 months and 0.72% (SD 0.73) (95% CI 0.58%-0.85%) at 12 months. 52.5%, 34.7% and 35.6% patients achieved HbA1c target of less than 7% at 3 months, 6 months and 12 months respectively. 82.2%, 70.3% and 65.3% patients achieved HbA1c target of less than 7.5% at 3 months, 6 months and 12 months respectively.

Conclusion

The results showed that the DPP4-inhibitors could be successfully used in primary care leading to patients with sustainable clinical improvement and hence reducing the immediate need of insulin initiation and referral to secondary care.