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Efficacy of intermediate-acting insulin on type 2 diabetes patients managed in primary care: a retrospective case series study

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Introduction

Intermediate acting insulin therapy (Protaphane HM) was introduced to YauMaTei Family Medicine Center since Oct, 2010 with the aim to intensify the glycaemic control of poorly controlled diabetes patients at community level. Despite being recommended by international and local guidelines, the clinical efficacy of Protaphane HM among diabetic patients managed in Hong Kong primary care remains unclear.

Objectives

This study tried to review the clinical efficacy and the adverse effects of Protaphane HM used in diabetic patients at YauMaTei Family Medicine Center.

Methodology

This was a retrospective case series study. All diabetic patients, who were already on maximum dose of oral hypoglycaemic agents, being put on Protaphane HM therapy at YauMaTei Family Medicine Center during the period 10/2010 to 3/2013 were recruited. All patients' clinical information were retrieved via the Clinical Management System and data were analyzed by SPSS. Student's t-test was used for statistical analysis.

Result

135 patients were recruited and 57% of them were male. The baseline HbA1c before Protaphane HM treatment was 9.31±1.42%. After 3 to 35 months of treatment, the mean HbA1c was decreased to 7.99±1.42%, with an absolute reduction of 1.32% in HbA1c ($p<0.001$). Patients who received Protaphane HM therapy for up to 6 months showed a HbA1c reduction of 0.92±0.61% ($p=0.007$) compared with baseline. Those received therapy for 7-12 months, 13-18 months, 19-24 months and 25-30 months showed HbA1c reductions of 1.13±0.54%($p<0.001$), 1.39±0.59%($p<0.001$), 1.65±0.46%($p<0.001$) and 1.16±0.75%($p=0.006$) respectively. Patients receiving therapy for more than 30 months showed 1.52±1.47% ($p<0.05$) reduction in HbA1c. 15 patients reported hypoglycaemic symptoms during routine follow-ups, but none of them suffered from severe hypoglycaemic attack requiring hospital admission or

cessation of therapy. The mean baseline BW of our patients was 65.28±1.37kg and the mean BW after 3-35 months therapy was 65.87±1.38Kg, which did not show any statistically significant change (0.59±0.65Kg, p=0.076). Only those receiving therapy for 7-12 months showed a statistically significant increase of the mean BW by 0.95±0.87Kg(p=0.034), otherwise the mean BW change of patients receiving therapy for up to 6 months, 13-18 months, 19-24 months, 25-30 months and more than 30 months were all statistically insignificant, they were 0.75±2.03Kg(p=0.426), 0.65±0.89Kg(p=0.148), -0.21±2.43Kg(p=0.862), 0.94±1.29Kg(p=0.131), 0.9±2.9Kg(p=0.477) respectively. The use of Protaphane HM had significantly improved the glycaemic control of diabetic patients managed in the primary care setting. It was generally well tolerated and there was no severe adverse effect reported. These data support the rational use of Protaphane HM at community level to improve the quality of care in poorly controlled diabetic patients and improve their cardiovascular outcomes in the long run.