HA CONVENTION Hospital Authority Convention 2018

Service Priorities and Programmes

Electronic Presentations

Convention ID: 1165
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Drug Use Evaluation of Sodium-glucose Cotransporter 2 (SGLT2) Inhibitors in United Christian Hospital

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Keywords:
drug use evaluation
SGLT2 inhibitors
diabetes mellitus

Introduction

Sodium-glucose cotransporter 2 (SGLT2) inhibitors are indicated for treatment of type 2 diabetes melllitus. Local experience on use of this class is limited.

Objectives

This study aimed to investigate the utilization pattern of SGLT2 inhibitors in a local public hospital in Hong Kong. Efficacy and safety of SGLT2 inhibitors in the study population were also evaluated.

Methodology

The study was conducted in United Christian Hospital. We retrospectively analyzed data of patients initiating SGLT2 inhibitors from 1 January 2016 to 1 June 2017. Baseline demographics, concomitant diseases or conditions, concurrent drug therapy, documented adverse drug reaction after initiation of SGLT2 inhibitors, laboratory data including glycated hemoglobin (HbA1c), estimated glomerular filtration rate, lipid profile and blood pressure were retrieved from the electronic Patient Record of Hospital Authority. Data were expressed either as mean±standard deviation, or number and percentage where appropriate. Change in laboratory parameters at baseline and subsequent two medical follow ups were compared using two-sided paired t-test, with significance level set at 0.05.

Result

55 patients taking empagliflozin and 43 patients taking dapagliflozin were analyzed. The numbers of anti-diabetic agents taken by our patients were 3.9±1.0 and 3.8±0.8 respectively. The most commonly prescribed anti-diabetic agents were metformin, followed by insulin and thiazolidinedione, in addition to SGLT2 inhibitors. SGLT2 inhibitors significantly reduced body weight (empagliflozin: baseline 82.7±21.1kg, 1st follow up 82.3±21.3kg, 2nd follow-up 76.2±19.1kg; dapagliflozin: baseline 87.2±18.0kg, 1st follow up 82.1±21.6kg, 2nd follow-up 81.2±17.8kg) and HbA1c (empagliflozin: baseline 8.8±1.5%, 1st follow up 8.0±1.5%, 2nd follow-up 7.4±1.2%; dapagliflozin: baseline 8.8±1.3%, 1st follow up 7.8±1.2%, 2nd follow-up 7.8±1.2%), but there was no significant change in blood pressure and lipid profile. Hypoglycemic episodes occurred in 10.3% of patients taking empagliflozin and 23.3% of patients

taking dapagliflozin, of which all cases were taking concurrent insulin or sulphonylureas. Genital and urinary tract infections also occurred. To conclude, SGLT2 inhibitors improved glycemic control and induced weight loss in our study population, but also caused genital and urinary tract infections, as well as hypoglycemia.