Study of drug induced hypoglycaemia in Hospital Authority (HA) hospitals in Hong Kong
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Introduction
Drug induced hypoglycaemia remains the most important and major side effect in diabetic patients receiving anti-diabetic medications and it is relatively common among patients with advanced age and renal dysfunction.

Objectives
To examine the relation of drug-induced hypoglycaemia caused by different anti-diabetic medications either as monotherapy or combination therapies with two anti-diabetic medications in patients with or without renal dysfunction, risk factors and incidence of recurrent hypoglycaemia were also evaluated.

Methodology
A retrospective study with diabetic patients on anti-diabetic medications admitted for drug-induced hypoglycaemia from 1/9/2011 through 29/2/2012 within HA hospitals in Hong Kong. The Clinical Data Analysis and Reporting Systems (CDARS) was used to retrieve data on patient case notes with diagnosis of drug-induced hypoglycaemia and diabetes as key words for setting up criteria for data collection. Patient data was collected from electronic patient record (ePR) and analyzed between the study period of 1/9/2011 and 31/3/2013 as we want to capture the incidence of recurrent drug-induced hypoglycaemia for up to 13 months beyond the data collection period.

Result
Results: According to total number of monotherapy of each anti-diabetic medication prescribed throughout HA hospitals in Hong Kong within the study period, patients...
experienced similar hypoglycaemia with sulphonylureas (21.8%) versus insulin (19.1%). Gliclazide and glipizide both showed similar incidence of 0.46% and 0.41% respectively, while glimepiride and modified release gliclazide had the lowest incidence of 1.1% and 0.2% among all sulphonylureas. Metformin was being prescribed the most among all other anti-diabetic agents but the incidence was almost negligible (0.009%) as monotherapy. Insulins such as Protaphane and Mixtard 70/30 had almost the same incidence, 1.44% and 1.32%, while Lantus had the lowest incidence of 0.19%. In combination therapy of two anti-diabetic medications, most patients experienced hypoglycaemia with gliclazide plus metformin (63.9%), Protaphane plus gliclazide (7.3%) and Protaphane plus metformin (8%). In patients with SCr ≥ 111 µmol/L, most were prescribed with gliclazide (38.7%) while glibenclamide (1.6%) was prescribed the least which was consistent with the fact that gliclazide is preferred over glibenclamide due to the lack of active metabolites. Most patients experienced hypoglycaemia with loss of meals or due to decrease in oral intake (48.9%), newly added drugs within 1 month of the hypoglycaemic episode (21.1%) and concurrent infection (13.5%). We have also found that one-fourth of patients experienced recurrent hypoglycaemia within the study period. Discussion: Drug induced hypoglycaemia places a heavy burden on healthcare expenses, and therefore, recognition of hypoglycemia risk factors, selection of appropriate regimens and educational programs for patients with diabetes are major focuses in order to minimize risk of hypoglycaemia and prevent long-term complications.