

Abstract

Impact of drugs on hypoglycaemia in hospitalized patients

Background: Hospital admission rates for hypoglycaemia now exceed those for hyperglycaemias among older adults. A growing number of reports associating hypoglycaemia with non-antidiabetic drugs have been published. Clinical pharmacists are often faced to hypoglycaemia in patients with multiple medications.

Aim: To investigate the potential relationship between prescribed drugs and hypoglycaemia episodes during hospitalization.

Methods: Point-of-care blood glucose values and prescribed drugs were analysed in patients admitted to a regional hospital. Hypoglycaemia cases were defined as patients with at least one hypoglycaemic event (random glucose value ≤ 3.9 mmol/L), and normoglycaemic cases as those with random glucose concentrations during hospitalization within the range of 4.5 to 5.8 mmol/L. Analysis were carried out using multivariate logistic regressions and Cox proportional hazard models.

Findings: A total of 373 patients (53% males; median age=74 years) were included in the analysis and of these, 64 (17%) had at least one hypoglycaemic event. Patients who experienced a hypoglycaemic event had a longer duration of hospitalization (median=10 vs 7 days, $p < 0.01$) and a higher rate of antidiabetic drugs prescription (83% vs 37%, $p < 0.01$). The number of non-antidiabetic drugs use was associated with an increased risk of hypoglycaemia during hospitalization (hazard ratio=2.3, $IC_{95}=1.4-4$, $p < 0.01$). After adjusting by confounders, heparin and pantoprazole were found associated with hypoglycaemia.

Interpretation: The relationship between hypoglycaemia and polypharmacy supports the demand to limit polypharmacy as much as possible, especially in elderly patients. This result underlines the potential involvement of clinical pharmacists with the aim to reduce the risk of hypoglycaemia during hospitalization.