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Risk of severe dysglycemia among diabetic patients receiving levofloxacin, ciprofloxacin, or moxifloxacin in taiwan.

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Abstract

Background. Observational studies and fatal case reports raise concern about the safety of severe dysglycemia associated with fluoroquinolone use. The objective of this study was to assess the risk of severe dysglycemia among diabetic patients who received different fluoroquinolones.

Methods. In a population-based inception cohort study of diabetic patients covering the period from January 2006 to November 2007, outpatient new users of levofloxacin, ciprofloxacin, moxifloxacin, cephalosporins, and macrolides orally were identified. Study events were defined as emergency department visits or hospitalization for dysglycemia within 30 days following the initiation of antibiotic therapy. Results were analyzed with adjusted multinomial propensity score.

Results. A total of 78 433 diabetic patients receiving the antibiotics of interest were included in the study. The absolute risk of hyperglycemia per 1000 persons was 6.9 for moxifloxacin and 1.6 for macrolides. In contrast, the risk of hypoglycemia was 10.0 for moxifloxacin and 3.7 for macrolides. The adjusted odds ratios (AORs) and 95% confidence intervals (CIs) of levofloxacin, ciprofloxacin, and moxifloxacin compared with macrolides were 1.75 (1.12-2.73), 1.87 (1.20-2.93), and 2.48 (1.50-4.12), respectively, for hyperglycemia and 1.79 (1.33-2.42), 1.46 (1.07-2.00), and 2.13 (1.44-3.14), respectively, for hypoglycemia. Patients taking moxifloxacin faced a significantly higher risk of hypoglycemia than those receiving ciprofloxacin. A significant increase in the risk of hypoglycemia was also observed among patients receiving moxifloxacin concomitantly with insulin (AOR, 2.28; 95% CI, 1.22-4.24).

Conclusions. Diabetics using oral fluoroquinolones faced greater risk of severe dysglycemia. The risk of hypoglycemia varied according to the type of fluoroquinolone administered, and was most commonly associated with moxifloxacin.

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