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8 Sex-Based Comparative Prevalence Study of Drug-Prescribing Factors Increasing the Antipsychotic-Associated Risk of QT-Prolongation/ Torsade-de-Pointe in the Inpatients of a Psychiatric Hospital

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Introduction: Sex-related differences have been reported in some adverse effects to drugs. Female sex is an acknowledged risk factor for drug-induced QT-interval prolongation/torsades de pointes (QTP/TdP).

Aim: The aim of the present study was to evaluate the prevalence of some drug prescribing-related pharmacodynamic factors that increase the antipsychotic-associated risk of QTP/TdP in the female vs. male adult inpatient population of a 410-bed teaching psychiatric hospital. The 2 factors evaluated were: 1) orders for antipsychotic-containing drug combinations at increased risk of QTP/TdP; 2) utilization of high-dose antipsychotic therapy.

Methods: A cross-sectional review of all the ongoing drug regimens, repeated on 2 separate days one year apart, was performed by the pharmacy department in the inpatient population of the hospital. The screening/rating tools were the drug product labels and the knowledge bases of the French Agency for Health Products. Hazardous/contraindicated drug combinations or drug combinations requiring precaution for use were considered.

Results: The 563 inpatients (211 women, 352 men) receiving antipsychotic therapy on the study days were included: 55.4% (n=117) of women and 57.4% (n=202) of men (p=0.65) received QT-prolonging antipsychotic therapy. In these patients prevalence of drug combinations at increased risk of QTP/TdP was similar in women (41%) and in men (36%, p=0.38) but patterns were different: QT-prolonging antipsychotic polypharmacy and combinations of QT-prolonging antipsychotics with bradycardia- or hypokalemia-inducing drugs accounted for, respectively, 35.4% and 64.6% of these drug combinations in female patients, vs. 67.1% and 32.9% in male patients (p=0.0006). In female patients, prevalence of orders for bradycardia- or hypokalemia-inducing drugs potentiating the risk of QTP/TdP was similar in women treated with QT-prolonging antipsychotics (26.5%) and in those receiving other antipsychotics (19.1%, p=0.20). There were 13 orders (prevalence 11.1%) for maximal daily doses or overridden maximal daily doses of QT-prolonging antipsychotics in female patients vs. 52 (prevalence 25.7%, p=0.0018) in male patients. In female patients, prevalence of such orders for high-dose antipsychotic therapy was similar in women receiving QT-prolonging antipsychotics (11.1%) and in those receiving other antipsychotics (16%, p=0.30).

Conclusion: The present findings show that antipsychotic-containing drug combinations at increased risk of QTP/TdP and high-dose antipsychotic therapy are frequently ordered in our hospital, irrespective of the patient sex. Educational interventions on the sex-related differential susceptibility to this drug-induced cardiac risk are needed.

Conflicts of interest: None declared.