

Risperidone 薬物動態と P-glycoprotein 遺伝子多型が心電図 QT 間隔に与える影響

Effect of risperidone metabolism and P-glycoprotein gene polymorphism on QT interval in patients with schizophrenia

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Objective

Risperidone (RIS) prolongs QTc and may cause fatal arrhythmia. RIS is metabolized by cytochrome P450 (CYP) 2D6, and has a strong affinity for P-glycoprotein (gp) specified by the ATP-binding cassette subfamily B member 1 (ABCB1) genes, which discharge RIS and its metabolite 9-OH-RIS from cardiac tissue.

Methods

To investigate the effect of RIS metabolism and ABCB1 gene polymorphisms on QTc, steady-state plasma RIS levels, 9-OH-RIS levels, and QTc were measured. CYP2D6, ABCB1 C3435T, and G2677T/A genotypes were determined in 66 schizophrenia patients taking RIS.

Results

QTc was significantly longer in patients with ABCB1 3435CT+3435TT than in those with 3435CC ($p = 0.006$). ABCB1 G2677T/A genotypes did not affect QTc. Multiple regression analysis showed that C/T or T/T genotypes of the ABCB1 C3435T genotype, lower weight, and older age prolonged QTc.

Conclusion

The T allele of the ABCB1 C3435T genotype might be useful for predicting QT prolongation in patients taking RIS.