Jordan University of Science and Technology

The role of multidrug resistance-1 (MDR1) variants in response to fexofenadine among Jordanians.

Authors: Alzoubi KHKhabour OFAl-Azzam SIMayyas F

Abstract: OBJECTIVE: The MDR1 gene encodes for P-glycoprotein (P-gp), which is an efflux transporter at the cell membrane. The P-gp has wide substrate specificity for multiple medications, including the antiallergic drug fexofenadine. In this study, we investigated the possible association between three common MDR1 gene polymorphisms (G2677T, C3435T, and C1236T), and the anti-allergic effect of fexofenadine among Jordanians. MATERIALS AND METHODS: An assessment of the severity of allergic rhinitis symptoms was performed for all patients (n = 260) pre- and 7 days into fexofenadine. MDR1 polymorphisms were genotyped using polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP). RESULTS: Relative to baseline, fexofenadine treatment was associated with significant reduction in allergic individual and total scores ($p < 0.0001$). Male gender was associated with less mean reduction in total allergic rhinitis symptoms score than in female ($p < 0.05$). In multivariate analysis, male gender was negatively correlated with response to fexofenadine ($p = 0.01$). The MDR1 gene C1236T polymorphism showed significant correlation with changes in total symptoms score from baseline in males ($p < 0.05$) but not in females. No significant correlation between fexofenadine response parameters and G2677T or the C3435T polymorphism was observed. CONCLUSIONS: The MDR1 gene polymorphism C1236T was associated with the anti-allergic effect of fexofenadine among male Jordanians.