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Association of anti-emetic efficacy of ondansetron with G2677T polymorphism in a drug transporter gene ABCB1 in Pakistani population

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Objective: To determine the association of ABCB1polymorphism G2677Twith anti-emetic efficacy in patients treated with ondansetron for preventing postoperative nausea and vomiting.

Study Design: A clinical trial.

Place & Duration of Study: Combined Military Hospital, Rawalpindi and Institute of Biomedical and Genetic Engineering, Islamabad, from 2012 to 2013.

Methodology: Four mg ondansetron was administered intravenously 30 minutes before the end of surgery. A total of 246 patients with the complaints of nausea and vomiting and 244 patients without nausea and vomiting were analyzed for G2677T polymorphism using PCR-RFLP method. Results were described as frequency percentages and chi-square test with significance at $p < 0.05$.

Results: The patients with TT genotype had significantly lower incidence of postoperative nausea and vomiting during the first 2 hours ($p < 0.001$) and between 2 - 24 hours after surgery as compared to other genotypes ($p < 0.001$). The patients with GG genotypes had significantly higher incidence of this complaint ($p=0.014$). Conclusion: Polymorphism of ABCB1 has an association with responsiveness for ondansetron. There is a role for genetics in the management of PONV.

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