

Original Paper

Genotoxic and cytotoxic effect of mirtazapine in human peripheral blood lymphocyte: in vitro study

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Abstract

Background and Objective: Mirtazapine is a norepinephrine and serotonergic antidepressant that is used in the therapy of major depressive disorders. This study was carried out to determine the genotoxic and cytotoxic effect of mirtazapine using chromosome aberration and mitotic index tests in human peripheral blood lymphocytes.

Methods: In this descriptive -analytic study genotoxic and cytotoxic effect of mirtazapine at 24 and 48 hours treatment periods on four concentration (10, 25, 40, and 55µg/ml) was performed on peripheral blood lymphocyte of four subjects.

Results: Mirtazapine significantly reduced the mitotic index in the all concentrations but it non-significantly increased the chromosome aberration at 24-hours and 48-hours treatment periods.

Conclusion: Mirtazapine has cytotoxic effect but it has no genotoxic effect on human lymphocyte.

Keywords: Mirtazapine, Cytotoxicity, Genotoxicity, Chromosome Aberration, Mitotic index, Lymphocyte

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