The genoprotective effect of Naringin by mifepristone on human blood lymphocyte

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Abstract

Introduction: According to a study conducted by mifepristone, it is a potent anti-progesterone compound that can lead to abortion and abnormalities in the fetus. Therefore, due to the presence of high antioxidant flavonoids, such as Naringin, and the frequency of this compound in the country, we have determined the protective effect of Naringin against cytogenetic damage caused by mifepristone on blood lymphocytes with micronucleus method; a high dose causes abortion and genetic abnormalities.

Methods and Results: With 5-cc heparin syringe, blood samples were collected from 5 healthy and non-smoker volunteers and blood samples were incubated for 1 hour after incubation with 100 µM of toxic dose of mifepristone and various concentrations of Naringin for 24 hours. Then to evaluate the production of micronucleus in binucleated lymphocytes, the slides were prepared and were evaluated by optical microscopy. The mean values were compared using the Spss software and the Anova test (posttest: Tukey). That p <0.05 has been made as meaningful. Incubation of blood samples with mifepristone induces genotoxicity in lymphocytes and the adjacency of cells with Naringin significantly reduces the number of micronucleus (p<0.05). The results of this study have shown a significant role of Naringin as the protective factor against the genotoxicity of mifepristone.

Conclusion: In this study, Naringin was found to be a protective agent against the DNA damage caused by mifepristone, and since Naringin alone has no genetic disorder; it can be used as a protective agent against the toxic effects of mifepristone.

Keywords: Genotoxicity, Mifepristone, Naringin, Human lymphocyte, Micronucleus