

EVALUATION OF THE CHEMOPREVENTION EFFECTS OF RUTIN TOWARDS THE HEMATOTOXICITY OF THE ANTICANCEROUS DRUG CYTARABINE *IN VIVO* USING BALB C MICE.

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ABSTRACT:

Rutin, a natural flavone derivative, quercetin-3-O-rhamnosylglucoside, is known for its pharmacological properties. In the present study, the chemo preventive effect of rutin towards the hematotoxicity caused by the anticancerous drug cytarabine is studied *in vivo* using Balb C mice. The analysis of the blood numeration formula showed that the administration of a single dose of cytarabine (100 mg/m², subcutaneous injection) caused a significant myelodepression mainly after 24 ($p \leq 0.1$) and 48 ($p \leq 0.05$) hours of cytarabine subcutaneous injection. Thus, the number of the red and white cells decreased in a remarkable way. However, the number of these cells increased after 72 hours which means the degradation and elimination of cytarabine. On the other hand, the administration of a daily amount of rutin (100 mg/kg, intraperitoneal injection) during 4 days before cytarabine subcutaneous injection did not exert any cytotoxic effects on the blood cells. Moreover, the combination rutin/cytarabine protected, as well as, the red and the white cells from the toxicity of cytarabine. The number of these cells is comparable with that of the control group.

KEY WORDS: Flavonoids, rutin, chemotherapy, cytarabine, cancer, chemoprevention