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The Effect of hydroalcoholic extract of *Astragalus membranaceus's* root on the hematological parameters and bone marrow cells after the administration of Mitomycin C in male rats

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Abstract

Mitomycin C (MMC) is an anti-cancer drug; but it has a side-effect which is bone marrow depression. *Astragalus membranaceus* is used in traditional Chinese medicine. This plant has various pharmacological effects, including hematopoietic, angiogenesis and immunostimulant effects. This study evaluated the effects of *Astragalus* root hydroalcoholic extract on the hematological and bone marrow cells after administering MMC. Twenty-eight male Sprague-Dawley rats (250±30 g) were divided into four groups: control (without treatment), Mitomycin group (MMC, 2 mg/kg, i.p.), Astragalus extract (*Astragalus* root extract, 500 mg/kg for 14 days) and treated group (MMC, 2 mg/kg, i.p. and *Astragalus* root extract, 500 mg/kg for 14 days). The hematological parameters (hematocrit, hemoglobin, red blood cell (RBC) count, red cells indices, total white blood cells (WBC), platelets, and differential leukocyte count) and bone marrow cells (erythroid and myeloid series) were measured. After receiving MMC, the hematological parameters and bone marrow cells were reduced. The results showed that hydroalcoholic extract of *Astragalus membranaceus* could increase significantly the hematological parameters including hematocrit, hemoglobin, RBC, WBC, and platelets as well as bone marrow cells. This study showed that *Astragalus* root hydroalcoholic extract positively affected anemia signs.

Key words: *Astragalus membranaceus*, Anemia, Mitomycin C, Bone marrow

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