

Research article

Rosemary and parsley extracts minimize Isoniazid[®]-induced hematological deterioration and enhance the oxygenation potential in adult male albino rats

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Abstract

Isoniazid[®] (INH), being the first line drug used as anti-tuberculosis drugs, is known to be associated with physiological deteriorations including hematological disturbances. The objective of this study was to explore the protective effect of rosemary and parsley aqueous extracts against INH-induced hematological disturbances. Adult rats (120-150g) were randomly divided into six groups (10 rats each): first group administrated with saline and served as control, second group ingested rosemary extract (440mg/kg/day), third group ingested parsley extract (250 mg/kg/day), fourth group received Isoniazid[®] (50mg/kg/day), fifth group received Isoniazid[®] and rosemary extract together, and sixth group received Isoniazid[®] in combination with parsley extract. After eight weeks, the results revealed that administration of either rosemary or parsley extract in combination with Isoniazid[®] ameliorated the Isoniazid[®]-induced hemato-deterioration; this was evidenced by the significant improvement of blood Hb, RBCs, Hct, blood indices, TLC, platelets and oxyhemoglobin (Hb-O₂, functional Hb derivative) levels and met-Hbr activity coupled with a reduction in the level of nonfunctional Hb derivatives (met-Hb, Hb-CO and Hb-S), auto-oxidation rate of oxyhemoglobin and hemolysis of RBCs. In conclusion, both rosemary and parsley extract could play a beneficial role in prevention of Isoniazid[®]-induced hematological disturbances, consequently reducing both physiological and functional anemia. This effect could be through their anti-oxidative and anti-nitrosative voltage.

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