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The effect of *Terfezia boudieri* methanolic extract (TBE) on total antioxidant level and arylesterase activities in CCl₄ intoxicated Rats

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Abstract

Paraoxonase (PON1) is one of the antioxidant enzymes that protects lipoproteins against oxidative conditions. The aim of this study was to investigate the protective effects of *Terfezia boudieri* on the changes caused by CCl₄ in HDL, total antioxidant levels and arylesterase (ARE) activities. Thirty wistar rats were divided into five groups, each including six rats. Group 1 was assigned as the control group and CCl₄ was not administered to this group. The rats in the other groups (CCl₄, TBE500, TBE1000 and TBE1500) were injected intraperitoneally with CCl₄ (1.5ml/kg, 1:1 in olive oil) on 14th day. Rats in the TBE500, TBE1000 and TBE1500 groups were gavaged each day with 500, 1000, and 1500mg/kg aqueous solutions of TPE, respectively for fourteen consecutive days before CCl₄ intoxication. After the experimental procedures, blood samples were taken from each animal. The effects of TBE and CCl₄ were evaluated by ARE, HDL and total antioxidant measurements in serum samples. Administration of CCl₄ reduced the total antioxidant (TAC), HDL levels and ARE activities in the serum. However, in the rats given a pretreatment with TBE 14 days before the injection of CCl₄, the reduction caused by the CCl₄ in the total antioxidant, HDL levels and ARE activities was prevented at a significant level ($p < 0.05$). We conclude that TBE might have antioxidative effects and may slow the progression of atherogenesis by reducing oxidation of lipoproteins and preserving arylesterase activity.

Key words: Arylesterase, CCl₄, oxidative stress, paraoxonase, *terfezia boudieri*