**Ameliorative role of turmeric curcumin as a natural antioxidant on phenol-mediated renal toxicity in rats**

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**‌ Statement of Problem:** The increasing role of phenol in many industries and its broad range of medicinal applications increase its potential toxic impacts. Also, its detrimental effect on the rat kidney has been investigated in a number of studies. On the other hand, curcumin is active ingredient of *C. longa* and has protective effects against a wide range of toxic agents.

**Research Purpose:** This study was conducted to examine the probable ameliorative impact of curcumin in attenuating phenol toxicity in rat kidney.

**Research Method:** Thirty-two animals were divided into four groups; control groups, curcumin group orally received curcumin 200 mg/kg bw, phenol group orally gavaged 180 mg/kg bw phenol and combined group orally gavaged curcumin and phenol. Treatment was given for 2 weeks. Blood samples were taken for biochemical analysis. Renal tissue samples were also collected to histopathological examinations.

**Results and Conclusion:** Administration of phenol revealed elevation in serum creatinine and blood urea nitrogen levels, elevated renal injury as well as malondialdehyde levels and decreased superoxide dismutase activity. Combination use of curcumin and phenol improved most of the side effects in rats treated with phenol regarding oxidative stress and histological parameters in kidney. This study shows that curcumin treatment ameliorates the toxicity in the kidney of phenol-treated rats through its antioxidant properties.

**Keywords:** Curcumin, Phenol, Renal toxicity, Histology, Rat.

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