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Effect of *Helichrysum plicatum* DC. subsp. *plicatum* ethanol extract on gentamicin-induced nephrotoxicity in rats

Key words: Antioxidants; Extract; Gentamicin; *Helichrysum plicatum* DC. subsp. *plicatum*; Nephrotoxicity; Oxidative stress



- The aim of this study was to evaluate the possible therapeutic or protective effects of *Helichrysum plicatum DC. subsp. plicatum* ethanol extract (HPE) against gentamicin-induced nephrotoxicity. 36 Sprague Dawley male rats weighing between 200–250 g were used as live material They were formed into six groups containing 6 rats each and allowed to adapt to laboratory conditions for 7 days.

- Group I: Control %5 DMSO (ip), Group II: HPE 100mg/kg/day/ip, Group III: HPE 200 mg/kg/day/ip, Group IV: Gentamicin as 80 mg/kg/day/ip, Group V: Gentamicin as 80 mg/kg/day/ip+HPE 100mg/kg/day/ip and Group VI: Gentamicin as 80mg/kg/day/ip+ HPE 200mg/kg/day/ip for 8 days.

- Following treatment, serum, liver and kidney tissues were used to assess blood ure a nitrogen, creatinine, enzymatic and non-enzymatic antioxidants and lipid peroxidation . Gentamicin significantly increased serum BUN (blood urea nitrogen), creatinin and liver and kidney levels of MDA (malondialdehid). It also decreased the activity of CAT (catalase), GPx (glutathione peroxidase) and SOD (superoxide dismutase) activity.
- Treatment with the HPE 100mg/kg reversed gentamicin-induced alterations as evidenced by decreased serum BUN and creatinin, liver and kidney oxidant marker and tubular necrosis as well as by an increase in antioxidant enzymes. It was found that HPE 200 mg/kg significantly increased liver and kidney tissue MDA levels in nephrotoxicity in rats.

- As a result, these findings support the proposition that *Helichrysum plicatum DC. subsp. plicatum ethanol* extracts in 100mg/kg doses demonstrate in the kidney and liver as free radicals and scavenger to prevent the toxic effects of gentamicin both in the biochemical and histopathology parameters.





