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Erythropoietin ameliorates gentamicin-induced renal toxicity: A biochemical and histopathological study

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Background: Investigations have attempted to modify the outcome of tubular injury by either ameliorating renal tubular damage or promoting tubular regeneration in the case of acute tubular necrosis.

Objectives: We investigated the protective effect of Eprex an erythropoietin analogue on tubular injury induced by gentamicin (GM).

Materials & Methods: Forty male Wistar rats were randomly divided into 4 groups. In group 1, rats were served as a sham group. In group 2, rats were injected intraperitoneally with 100 mg/kg of GM for 10 consecutive days (positive control group) and then were sacrificed. In group 3, rats received GM for 10 days then Eprex 100 U/kg was injected intraperitoneally for the next 10 days and then they were sacrificed at the day 20th. In group 4, rats were injected a combination of GM (80 mg/kg) and Eprex 100 U/kg intraperitoneally for 10 days and then were sacrificed.

Results: The results indicated that, Eprex prevented the increase in serum creatinine (Cr) and blood urea nitrogen (BUN). The effect of Eprex on damage score, showed that co-administration of GM and Eprex (group 3 and 4) reduced the kidney tissue damage compared to positive control group ($P<0.05$). This result indicates that Eprex potentially can reduce or prevent the kidney tissue damage.

Conclusions: Ameliorative effect of Eprex when the drug was given in combination with GM and also when the drug was applied after GM–induced tubular damage, revealed the renoprotective potency of Eprex. Eprex is a promising drug to prevent or attenuate tubular damage induced by GM or other nephrotoxic agents which act through the same mechanisms as gentamicin.

Biography

Fatemeh Ghaed Amini Asadabadi has completed her GP from Shahrekord University and now is Resident of Gyn. and Obs. in Shahid Beheshti University of Medical Science in Tehran/Iran. She has published more than 20 articles in nephrology field.

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