CELECOXIB ATTENUATES NEPHROTOXIC EFFECTS OF GENTAMYCIN IN MICE

Ahmed Mohammed Abd-Eldayem1, Mohammad Salem Hareedy1, Dalia M. Badary2 and

Abstract:

Objectives: The aim of this study is to evaluate the possible effects of selective cyclooxygenase 2 inhibitor drug (celecoxib) on renal glutathione levels and interleukin 6 (IL6) expressions in a gentamicin-induced nephrotoxicity model in mice.

Methods: 4 groups of adult male mice (5 animals each) received saline, gentamicin (100 mg/kg/day, i.p), celecoxib (30 mg/kg/day, orally) and gentamicin plus celecoxib for 8 days. Results: It was noticed that gentamicin administration to mice led to significant depletion of renal glutathione, this indicates the deficiency of renal antioxidant capacity by gentamicin and widespread tubular damage (loss of microvilli, tubular dilatation and vacuolation) in histopathological examination indicating nephrotoxicity. An overexpression of IL6 was noted in renal tubular epithelium by immunohistochemistry. In animals received celecoxib daily, there were no changes in renal glutathione levels compared to control animals, no histopathological changes in renal tissues and reduced expression of IL6. In animals received celecoxib plus gentamicin there is significantly reversed gentamicin induced nephrotoxicity evidenced by increasing levels of glutathione, reduced IL 6 expression and reduction of the degree of tubular injury by histopathological examination. Conclusion: administration of celecoxib can protect the kidneys from gentamicin related toxicity.

Keywords: celecoxib - gentamicin - nephrotoxicity

Published In:

journal of pharmacy science, 2018, NULL