

Studies on protective effect of *Nigella sativa* oil on cisplatin induced nephrotoxicity in rats

Zeba Farooqui

Aligarh Muslim University, India

Cisplatin (CP) is a chemotherapeutic agent which is effective against wide range of malignant tumours. However, its clinical use is limited by its dose dependant nephrotoxicity. Although a number of strategies have been attempted to prevent CP nephrotoxicity, but were not found suitable for clinical practice. *Nigella sativa* (NS) seeds/oil have been shown to reduce the progression of various cardiovascular and renal disorders. In view of this, the protective effect of NS oil (NSO) on CP induced nephrotoxic and other deleterious effects were investigated. Rats were divided into four groups, rats in the groups CP+NSO and NSO were administered NSO (2 ml/kg bwt orally), with or without single dose of CP treatment (6 mg/kg bwt i.p.) respectively. Serum/urine parameters, activities of brush border membrane (BBM) enzymes and various oxidative stress parameters were analyzed in rat kidney tissue homogenates and/or brush border membrane vesicles (BBMV). CP nephrotoxicity was recorded by increased serum creatinine and blood urea nitrogen. CP caused a significant decrease in the activities of alkaline phosphatase (ALP), γ -glutamyl transferase (GGTase), leucine aminopeptidase (LAP) in homogenates and BBMV. In contrast, NSO administration alone enhanced the activities of BBM enzymes in homogenates as well as in BBMV, indicating an overall improvement in renal BBM integrity. CP caused oxidant/antioxidant imbalances as reflected by decrease in the activities of SOD, CAT, GSH-Px, GR and TR. CP treatment to NSO administered rats markedly enhanced resistance to CP-elicited deleterious effects. In conclusion, NSO appear to protect CP induced nephrotoxicity by improving antioxidant defense mechanism.

Biography

Zeba Farooqui is pursuing Ph.D. from Department of Biochemistry, A.M.U, Aligarh. She is presently working on "Protective effect of *Nigella sativa* oil on cisplatin induced nephrotoxicity in rats".

zeba0134@gmail.com