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Rosiglitazone이 cisplatin신독성에 미치는 효과에 관한 연구

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PPAR-γ Agonist, Rosiglitazone, Attenuates Cisplatin Nephrotoxicity by Decreasing Inflammation and Apoptosis

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Introduction : Inflammation and apoptosis are known to play important role in cisplatin nephrotoxicity. Peroxisome proliferator-activated receptor-gamma (PPAR-γ) has been shown to have regulatory effect of cell proliferation, metabolism and anti-inflammatory activity. This study investigates the effect of PPAR-γ agonist, rosiglitazone, in cisplatin-induced acute renal failure in mice and its mechanism.

Methods : The effects of rosiglitazone on renal functional and histologic protection in cisplatin-induced ARF in mice were examined. Inflammatory cell infiltration, apoptosis, tumor necrosis factor-α gene expression, and the activation of tissue caspases were also measured with or without rosiglitazone pretreatment in cisplatin treated mice.

Results : Pretreatment of rosiglitazone significantly attenuated the decrease of renal function after cisplatin treatment (BUN at 72hours after cisplatin treatment 251.3±12.3 vs 39.3±8.5 mg/dL, $p<0.01$). Histologic damage after cisplatin treatment also was attenuated by rosiglitazone. This beneficial effect was accompanied by decrease in TNF-α gene expression level and inflammatory cell infiltration, as well as in caspase 3 activity and apoptosis.

Conclusion : These data provide evidence that rosiglitazone, PPAR-γ agonist, attenuates cisplatin induced renal injury through modulation of inflammation and apoptosis. Pretreatment of rosiglitazone might be suggested to be a useful way of reducing cisplatin nephrotoxicity