Cisplatin 유발 급성신부전에서 Interleukin-1α 역할에 대한 연구

중앙대학교 의과대학 내과학교실

박윤수 · 한민지 · 신정호 · 남우진 · 김수현 · 오동진 · 유석희

IL-1α Deficient Mice are Protected Against Cisplatin-Induced ARF

Youn-Su Park, Min-Jee Han, Jung-Ho Shin, Woo-Jin Nam, Su-Hyeon Kim, Dong-Jin Oh, Suk-Hee Yu

Chung-Ang University College of Medicine Department of Internal Medicine

Background: For unknown reasons, caspase-1 -/- mice which were protected against cisplatin-induced acute renal failure (ARF) are deficient in Interleukin-1α . Therefore, we questioned whether deficiency of Interleukin-1α might explain the mechanism of protection against cisplatin-induced ARF in caspase-1 -/- mice.

Methods and Materials: Cisplatin (30 mg/kg) was injected intraperitoneally into wild-type C57BL/6 mice in order to produce a cisplatin-induced ARF model. Interleukin-1α was measured in vehicle and cisplatin-treated wild type. And, we performed a study to evaluate the question of whether Interleukin-1α -/- mice possessed significant protection against cisplatin-induced ARF. Additionally, infiltration of CD11b and CD49b positive cells as a marker of macrophages, natural killer and natural killer T cells (pan-NK cells) was investigated in wild type and Interleukin-1α -/- mice.

Results: Compared to vehicle-treated mice, renal Interleukin-1α increased in cisplatin-treated wild type from Day-1. Interleukin-1α -/- mice were protected against cisplatin-induced ARF. No significant differences in infiltration of neutrophils, CD11b and CD49b positive cells were observed between wild type and Interleukin-1α -/- mice.

Conclusion: Interleukin-1α deficient mice are protected against cisplatin-induced ARF. Lack of Interleukin-1α may explain, in part, the protection against cisplatin-induced ARF observed in caspase-1 -/- mice. Investigation of protective mechanisms in Interleukin-1α -/- mice in cisplatin-induced ARF merits further study.

Key Words: 시스플라틴, Interleukin-1α, 급성 신부전
Cisplatin, Interleukin-1α, Acute kidney injury