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시스플라틴 유발 급성신부전 생쥐에서 대식세포의 역할

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The Investigation of Macrophage Infiltration in Cisplatin-induced ARF in Mice

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Background : The potent antineoplastic agent cisplatin is a frequent cause of acute renal failure (ARF). Nephrotoxicity is the major side effect of cisplatin which limits its efficacy as a potent chemotherapeutic agent, and also makes it one of the most widely studied nephrotoxins. Recent findings can prove that there has been growing evidence of the role of inflammatory cells and cytokines in the pathogenesis of cisplatin- induced ARF. The aim of the present study was to investigate the role of macrophages in cisplatin- induced ARF.

Methods : Cisplatin (30 mg/kg) was injected intraperitoneally into wild- type C57BL/6 mice. Time course of macrophage infiltration in cisplatin- induced ARF was investigated by using immunofluorescence for CD 11b in outer medullary region. And we performed a study whether there was a significant difference of macrophages infiltration between wild type and caspase- 1- deficient mice which was protective against cispaltin- induced ARF. Renal function was measured after macrophage depletion using clodronate.

Results : Macrophages infiltration was augmented from day 2 after cisplatin administration and preceded the development of cisplatin- induced ARF. Macrophages infiltration in caspase- 1 - /- mice was significantly lower than wild- type mice in cisplatin- induced ARF. Unexpectedly, there was no significant differences of serum creatinine concentration between vehicle- treated and clodronate- treated cisplatin- induced ARF mice.

Conclusion : Our data demonstrated that macrophages infiltration in outer medullary region preceded the development of cisplatin- induced ARF. However, clodronate treatment was not protective against cisplatin-induced ARF.

Key Words : 시스플라틴, 급성신부전, 염증
Cisplatin, ARF, Inflammation