

## 숙성 흑마늘이 콜리스틴 유도 급성 신손상 쥐 모델에서 신손상을 줄인다

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### Aged Black Garlic Attenuates Colistin-induced Kidney Injury in Mice Model

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**Introduction:** Colistin is a complex polypeptide antibiotic composed mainly of colistin A and B. It was abandoned from clinical use in the 1970s because of significant renal and, to a lesser extent, neurological toxicity. But, colistin is still currently used criteria tend to overestimate the incidence of kidney injury. We examined the protective effects of the aged black garlic on colistin-induced kidney injury, focusing on the renal function, tissue damage, and inflammatory issues.

**Methods:** Mice were randomly divided into four different groups. The first group was injected intraperitoneally with PBS; the second group of mice was injected intragastrically with 1% of garlic; the third group was injected intraperitoneally with colistin (10 ml/kg) for 7 days; the fourth group was injected with garlic 24 hr prior to and just before colistin injection. Mice were sacrificed 7 days after colistin injection.

**Results:** Colistin injection increased serum creatinine and blood urea nitrogen 7 days after injection. Garlic injections administered 24 h prior to and just before colistin injection prevented the deterioration of renal function by decreasing serum creatinine and BUN and also tubular damages 7 days after colistin injection. Garlic injection decreased apoptotic death of the tubular epithelial cells by decreasing the number of TUNEL-positive cells and renal fibrosis as reflected by Masson's trichrome staining. Renal macrophages represented by CD68 cells were significantly decreased by pretreatment of garlic in the renal interstitial areas. Levels of NF- $\kappa$ B, iNOS, and TGF beta 1 were also decreased in the damaged tubular epithelial cells by garlic injection compared to colistin only group.

**Conclusion:** These results support the hypothesis that administration of the aged black garlic is effective in prevention of renal dysfunction and tissue injury by abrogating apoptosis and attenuating inflammation in colistin-induced AKI mice model.

**Key Words:** 콜리스틴, 급성신손상, 염증

Colistin, Acute kidney injury, Inflammation