

## Paricalcitol Attenuates Gentamicin-induced Kidney Injury by Suppression of Apoptosis

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**Background:** Beneficial effects of paricalcitol in gentamicin (GM)-induced kidney injury were previously reported. It is, however, not yet clear whether paricalcitol attenuates the apoptosis, which mainly contributes to the pathogenesis of GM-induced nephropathy. We investigated the effect of paricalcitol on apoptosis in rat kidneys after GM-induced injury.

**Methods:** Three groups of rats were treated with vehicle, GM (150 mg/kg/day, i.m.) alone, or GM with paricalcitol (0.2 µg/kg/day, s.c.), respectively, for 7 days.

**Results:** Plasma creatinine level was increased in GM treated rats, which was attenuated by paricalcitol co-treatment. TUNEL-positive cells increased in the kidney of GM treated, which was counteracted by paricalcitol co-treatment. Protein expression of Bax and cleaved form of caspase-3 was increased in the cortex/outer stripe of outer medulla from GM treated rats, while Bcl-2 expression decreased. These changes were attenuated by paricalcitol treatment. The phosphorylated JNK (Jun-N-terminal kinase) expression was increase in GM-treated rats, which was inhibited by paricalcitol.

**Conclusion:** Paricalcitol treatment attenuates GM-induced nephropathy by suppressing the induction of apoptotic factors along with inhibition of JNK.

**Key Words:** Apoptosis, GM, Paricalcitol  
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