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Remodelin attenuates renal interstitial fibrosis via modulation of epithelial-to-mesenchymal transition

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Objectives: Nα-acetyltransferase 10 (Naa10), the catalytic subunit of N-acetyltransferase A, has been reported to be involved in the regulation of telomerase activity, DNA damage response, cytokinesis, microtubule reorganization and histone acetylation. This study was designed to investigate whether the pharmacological inhibition of Naa10 could affect the progression of renal tubulointerstitial fibrosis.

Methods:

Remodelin 1mg/kg, a Naa10 inhibitor, was administered to the mice for 3 or 7 days following unilateral ureteral obstruction (UUO).

Results:

Masson trichrome and Sirius red staining demonstrated that Naa10 inhibition led to a decrease in renal interstitial fibrosis induced by UUO. The α-SMA- or TUNEL-positive cells were apparently decreased in obstructed kidneys at day 7 after UUO. The Naa10 inhibitor attenuated the change in the mRNA levels of α-SMA, fibronectin, vimentin, MMP-2 and TGFβ1 without significant changes in mRNA levels of IL-1β, IL-6, E-cadherin and VE-cadherin and protein expressions of Nox1, Nox2, Nox4, SOD1, HO-1, NQO1 and catalase.

Conclusions:

Out results suggest that Naa10 inhibition would inhibit the progression of renal fibrosis via regulation of epithelial-to-mesenchymal transition-related factors.