【Award Session 2】

Circulating Activin A: A Potential Biomarker for Kidney Fibrosis and Poor Renal Outcomes

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Kidney fibrosis, a hallmark of late-stage CKD and an independent predictor of adverse outcomes, requires invasive biopsy for assessment, underscoring the need for noninvasive biomarkers. While TGF-β is a key profibrotic cytokine, its broad biological roles limit therapeutic success. This study explores activin A, a TGF-β superfamily member, for its role in kidney fibrosis. In 339 patients with biopsy-confirmed kidney diseases, plasma activin A levels were significantly associated with tubulointerstitial fibrosis. RNA sequencing showed a correlation between kidney INHBA expression and plasma activin A, with myofibroblasts identified as primary activin A–positive interstitial cells. During a 22-month follow-up, 113 patients experienced adverse kidney events. Although plasma activin A was initially linked to event risk, the association became insignificant after adjusting for confounders. In vitro, activin A knockdown reduced TGF-β–induced fibroblast activation. In summary, plasma activin A correlates with kidney fibrosis severity and outcomes.