



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

KSN SEOUL, KOREA
2026

The 46th Annual Meeting of the Korean Society of Nephrology



Jun 11 (Thu) – 14 (Sun), 2026

COEX, Seoul, Korea

Abstract Type : Poster exhibition

Abstract Submission No.: A-0114

Abstract Topic : Acute Kidney Injury

Manuscript The Effect of Nafamostat Mesilate on Regulatory T-cell Populations in Patients with Acute Kidney Injury Receiving Continuous Renal Replacement Therapy.

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Objectives : AKI triggers uremic toxin accumulation, impairing regulatory T (Treg) cells and promoting the AKI-to-CKD transition. Nafamostat mesilate (NM) is known for its antiinflammatory properties and potential to preserve Treg function. This study investigated the effects of NM on Treg protection and immune regulation.

Methods : This prospective observational study included AKI patients requiring CRRT at Kosin University Gospel Hospital (Jan–Oct 2021). Blood samples were collected within one day of starting NM as an anticoagulant and again 2–3 days later to analyze changes in the T-cell population

Results : NM administration significantly increased the counts of CD3(+)/CD28(+), CD3(+), and CD28(+) lymphocytes. This immune-activating effect was more pronounced as AKI severity increased. However, no significant changes were observed in CD127(-)/FoxP3(+) Treg populations between the pre- and post-administration periods.

Conclusions : NM functions as an immune modulator that restores suppressed immune states in CRRT patients beyond its anti-inflammatory role. The activation of T-cell pathways serves as a key mechanism for immune recovery, particularly in severely ill patients. These findings suggest that NM provides a therapeutic rationale for improving both renal function and immune normalization