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Role of Gut Microbiota Dysbiosis in Uremic Toxin Accumulation Among End-Stage Renal Disease Patients

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Uremic toxins derived from gut microbial metabolism contribute to systemic inflammation in end-stage renal disease (ESRD). This cross-sectional study analyzed fecal microbiota composition and serum toxin levels in 100 ESRD patients undergoing dialysis. Significant dysbiosis characterized by reduced beneficial bacteria and overgrowth of toxin-producing species was observed. Correlations between specific microbial taxa and uremic toxin concentrations suggest that targeting the gut microbiome could mitigate toxin burden and inflammation.

Biography

Aisha Khan's work integrates microbiology and nephrology, focusing on gut-kidney axis mechanisms. She is involved in clinical trials exploring microbiome modulation to improve outcomes in kidney disease.