Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care
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Peritoneal Dialysis: Plastic Bags and Green Promises

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This talk explores the environmental implications of dialysis within the broader framework of "green nephrology," with a focus on peritoneal dialysis (PD) and its trade-offs. Dialysis contributes a measurable carbon footprint driven by transport, energy use, and—most significantly—consumables, with emissions varying across modalities and generally lower in home-based therapies such as PD compared with in-centre haemodialysis. The presentation highlights that while PD reduces infrastructure needs and patient travel, its reliance on single-use plastic dialysate bags results in substantial water consumption and plastic waste, with both direct and indirect environmental impacts from production and disposal. Key considerations include the global supply chain of dialysis consumables, opportunities for regional manufacturing to reduce transport-related emissions, and the feasibility of recycling strategies. The challenges of recycling medical-grade plastics—balancing carbon reduction against water use and logistical demands—are critically examined, emphasizing that effective recycling requires localized infrastructure and efficient material handling systems. Emerging solutions, including sustainable polymers and innovative reuse of dialysis effluent, are also discussed. Overall, the talk underscores that while PD is relatively more environmentally favorable, meaningful progress in green nephrology will depend on systemic changes spanning production, clinical practice, and waste management.

Keywords: chronic kidney disease, environmental medicine, ecology, health economics