Critical Care Nephrology in the Era of Planetary Health: Aligning Intensive Kidney Care with the Vision of World Kidney Day

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Each year, International Society of Nephrology and International Federation of Kidney Foundations coordinate World Kidney Day to raise global awareness of kidney disease and promote strategies to improve kidney health worldwide. The theme for World Kidney Day 2026 *"Kidney Health for All: Caring for People, Protecting the Planet"* highlights an increasingly urgent reality: kidney health is inseparable from both human well-being and planetary sustainability.

Within this broader landscape, the field of critical care nephrology has emerged as one of the most dynamic and essential interfaces in modern medicine. At the intersection of nephrology, intensive care medicine, and extracorporeal therapies, critical care nephrology addresses some of the most complex and life-threatening conditions encountered in clinical practice, including acute kidney injury (AKI), multiple organ dysfunction, and the need for advanced renal replacement therapies in critically ill patients.

The global burden of kidney disease continues to rise. Kidney disease has never been confined to the kidney. It is a mirror of systemic vulnerability, a convergence point where inflammation, hemodynamic instability, environmental exposure, and social inequity silently intersect. Acute kidney injury affects millions of hospitalized patients each year and remains strongly associated with increased mortality, prolonged hospitalization, and long-term chronic kidney disease. In the modern intensive care unit, AKI is rarely an isolated event; rather, the renal expression of multiple organ failure, unfolding in real time. The management of such patients requires an integrated understanding of organ cross-talk—particularly the complex interactions between the kidney, heart, lung, and immune system.

Over the past two decades, critical care nephrology has evolved from a narrow technical domain focused primarily on dialysis delivery into a multidisciplinary field centered on comprehensive organ support. Innovations in continuous renal replacement therapy (CRRT), hemoadsorption and extracorporeal blood purification, fluid stewardship, and precision hemodynamic monitoring have transformed the role of nephrologists within the ICU. Increasingly, nephrologists participate not only in renal replacement therapy but also in broader decisions regarding fluid management, metabolic control, and extracorporeal organ support strategies.

The theme of *World Kidney Day—caring for people while protecting the planet—also invites reflection on the environmental impact of kidney care itself.* Dialysis therapies, particularly in the ICU setting, are resource-intensive and generate substantial volumes of plastic waste, water consumption, and energy use. As healthcare systems worldwide confront the challenge of climate change and environmental sustainability, nephrology—and critical care nephrology in particular—must assume a leadership role in developing greener models of care. Efforts toward sustainable dialysis technologies, optimized resource utilization, and environmentally responsible manufacturing of medical devices represent an emerging frontier for the specialty (Figure).

Equally important is the principle of equity in

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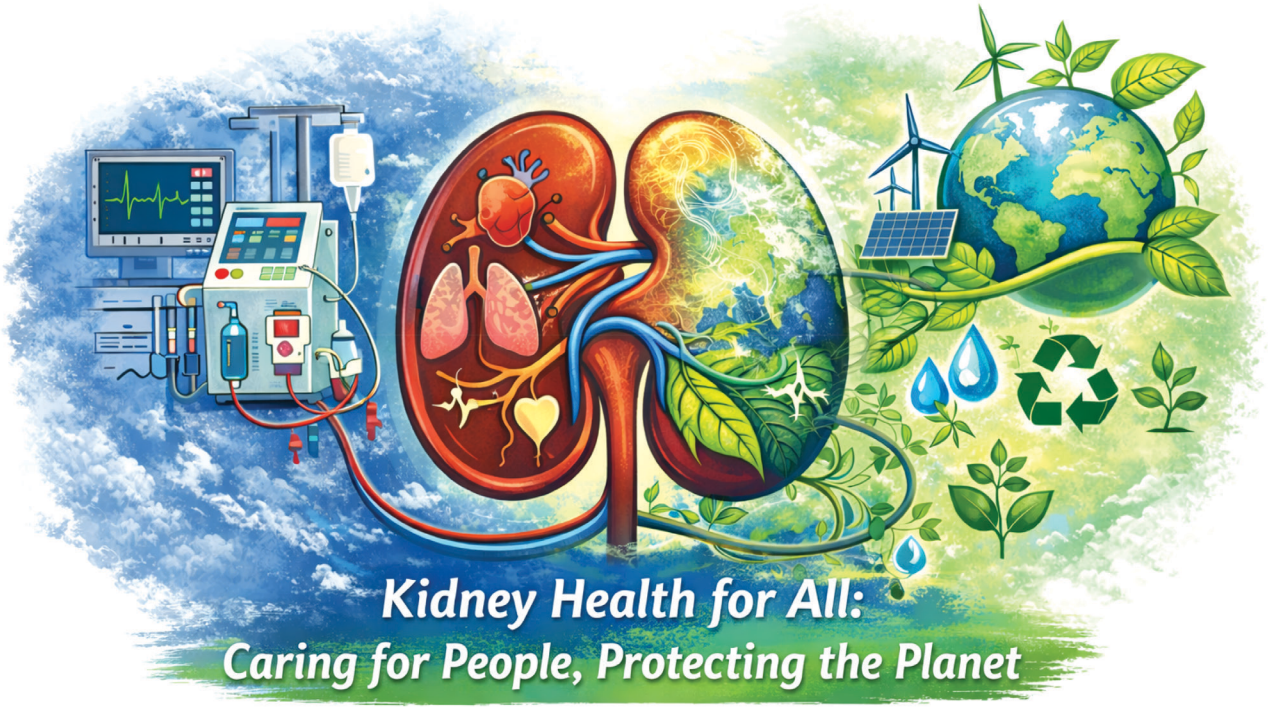

access to life-saving therapies. Advanced renal replacement modalities such as continuous kidney replacement therapy and extracorporeal blood purification remain unavailable in many regions of the world, particularly in low- and middle-income countries. The vision of "Kidney Health for All" cannot be realized unless critical care nephrology expands beyond technologically advanced centers and reaches patients in resource-limited settings. Innovation in simplified technologies, telemedicine, training programs, and global collaborations will be essential to bridge these disparities.

Critical care nephrology also exemplifies the broader transformation of nephrology toward a more integrative and patient-centered discipline. As the boundaries between nephrology, cardiology, critical care, and metabolic medicine continue to blur, the modern nephrologist must be equipped with new competencies—ranging from ultrasonography and hemodynamic assessment to extracorporeal organ support and interdisciplinary collaboration.

This journal, *Research Journal in Critical Care Nephrology*, is dedicated to advancing scholarship at this crucial interface. By fostering research in acute kidney injury, extracorporeal therapies, organ cross-talk, and innovative models of kidney support in critically ill patients, the journal aims to contribute to a deeper understanding of how kidney care can improve outcomes in the most vulnerable populations.

On this occasion of World Kidney Day, we reaffirm the importance of critical care nephrology as a pillar of modern medicine. Protecting kidney health is not only a matter of chronic disease prevention but also of delivering timely, equitable, and sustainable care to patients facing life-threatening illness. As clinicians, scientists, and educators, we must continue to advance both the science and the stewardship of kidney care—caring for people while safeguarding the planet we share.

On Behalf of Editorial Board
Amir Ahmad Nassiri
Editor-in-Chief, RJCCN

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