Serhan Tuğlular
Chair of the Scientific Committee, European Renal Association (ERA); Division of Nephrology, Marmara University School of Medicine, Istanbul, Türkiye

Citation: EMJ Nephrol. 2026;14[1]:54-58. https://doi.org/10.33590/emjnephrol/K9Z963FK

Advances in genetic testing and our understanding of inherited kidney diseases have substantially improved our ability to identify the underlying causes of CKD

Q1 Could you briefly describe your career path in nephrology and what has shaped your clinical focus most strongly?

I completed my fellowship in Nephrology at Marmara University School of Medicine, Istanbul, Türkiye, in 1999. My primary clinical and academic interests have been kidney transplantation and vasculitis. However, over the years, living and practicing in an earthquake-prone country such as Türkiye strongly shaped my professional focus. Recurrent natural disasters compelled me to devote increasing attention to disaster nephrology, including the management of patients with crush syndrome, disaster organisation and logistics, and the care of patients receiving kidney replacement therapies during emergencies. Educational activities aimed at the prevention and treatment of crush syndrome have also become an important component of my work. These experiences have significantly influenced both my clinical practice and broader perspective on nephrology care.

Q2 What have been the most significant changes you've observed in nephrology practice over the course of your career?

Nephrology has undergone remarkable changes. One of the most significant developments has been the recognition of chronic kidney disease (CKD) as a major global health problem. Earlier in my career, CKD was often under-recognised despite its considerable burden. Today, it is widely acknowledged as an increasing public health challenge associated with substantial cardiovascular risk, morbidity, and healthcare costs.

This is also an encouraging and exciting time for nephrology. For many years, our ability to alter the progression of CKD was limited. We now have far more effective tools to slow disease progression and improve patient outcomes. In addition to renin angiotensin system (RAS) inhibitors, the introduction of therapies such as sodium-glucose cotransporter 2 (SGLT2) inhibitors, non-steroidal mineralocorticoid receptor antagonists, and glucagon-like peptide 1 (GLP-1) agonists, together with more comprehensive and evidence-based approaches to kidney protection, has significantly changed the therapeutic landscape.

Another major area of progress has been genetics. Advances in genetic testing and our understanding of inherited kidney diseases have substantially improved our ability to identify the underlying causes of CKD, allowing more precise diagnoses and, increasingly, more individualised approaches to patient care.

In parallel, nephrology has evolved from a largely supportive specialty to one with increasingly targeted and evidence-based therapies, particularly in areas such as glomerular diseases and vasculitis. Advances in immunosuppressive strategies and transplant medicine have substantially improved patient and graft outcomes, making kidney transplantation safer and

more successful than it was at the beginning of my career.

Another important change has been the growing recognition of acute kidney injury (AKI) as a major and potentially preventable clinical problem, accompanied by advances in critical care nephrology and kidney replacement therapies. Technological improvements in dialysis and more multidisciplinary models of care have further enhanced both survival and quality of life for patients with kidney disease.

From my own perspective, practicing in Türkiye has also highlighted another important evolution in nephrology: the increasing importance of disaster preparedness and disaster nephrology. Natural and human-made disasters, including earthquakes, armed conflicts, climate change, and broader environmental challenges, have become an increasingly important focus of nephrology practice. These events underscore the need for nephrologists not only to provide clinical care but also to contribute to preparedness, organisation, and coordinated responses for vulnerable kidney patients.

More recently, AI and digital technologies have emerged as promising areas in nephrology, with potential applications in risk prediction, diagnostic support, personalised medicine, and the optimisation of clinical decision-making and patient care.

Overall, nephrology today is more technologically advanced, evidence-driven, and collaborative than when I began my career. Importantly, we now have greater opportunities not only to treat kidney disease but also to prevent progression and improve long-term outcomes, while still maintaining the strong patient-centred foundation that defines our specialty. I would strongly encourage young physicians to pursue nephrology, a specialty that is intellectually stimulating, rapidly evolving, and deeply rewarding.

Q3 What do you think are the defining themes of the European Renal Association (ERA) Congress this year, and why are they important now?

I believe the defining theme of ERA this year, 'Open Your Mind, Challenge Your Thinking', is both timely and highly relevant. Nephrology is evolving rapidly, with major advances in therapeutics, genetics, precision medicine, digital health, and AI. In such a dynamic environment, it is essential that we remain open to new ideas, question established paradigms, and continuously reassess how we deliver patient care.

This theme also reflects the importance of interdisciplinary collaboration and global perspectives. The challenges we face today, including the growing burden of CKD, health inequities, environmental threats, and the impact of natural and human-made disasters on kidney care, cannot be addressed through traditional approaches alone.

For me, ERA's theme also carries an educational message. Progress in medicine depends not only on scientific discovery but also on intellectual curiosity, critical thinking, and the willingness to learn from different experiences and healthcare settings. This mindset is particularly important now, as nephrology enters an era with unprecedented diagnostic and therapeutic opportunities.

Q4 What is one of the most interesting findings or studies presented this year that has particularly caught your attention?

What really stood out to me was the full results of the FIND-CKD trial. What makes it so significant is that finerenone, a drug we have come to know well in the diabetic CKD setting through FIDELIO and FIGARO, has now demonstrated meaningful benefit in non-diabetic CKD, which is a population where we have been largely standing still therapeutically for a long time.

The trial is the largest Phase III study ever conducted in this population, with over 1,500 patients across a broad spectrum of underlying kidney diseases, from hypertension-related nephropathy to glomerular disorders, all on background RAS blockade. That heterogeneity strengthens the message, because the benefit appeared consistent across subgroups.

On the efficacy side, finerenone met its primary endpoint by meaningfully slowing the annual rate of eGFR decline compared to placebo. While this difference may seem modest in absolute terms, it translates into clinically relevant kidney function preservation over time. Perhaps equally important was the 23% relative risk reduction in the composite cardiovascular-kidney endpoint, which included hard outcomes like kidney failure, major eGFR decline, heart failure hospitalisation, and cardiovascular death. From a safety perspective, hyperkalaemia occurred more frequently with finerenone, as expected, but serious consequences, such as discontinuation or hospitalisation, were rare. AKI rates were comparable between arms, which is also reassuring.

Taken together, FIND-CKD opens a real conversation about expanding finerenone's role and, more broadly, about how we approach the large proportion of patients with CKD whose disease has nothing to do with diabetes.

Q5 How do you see AI influencing the early detection and diagnosis of AKI in clinical practice?

AKI remains one of the most consequential and yet potentially preventable complications we face in hospital medicine. The challenge has always been that by the time AKI is detectable by conventional criteria, such as a rise in serum creatinine and a drop in urine output, the kidney injury is already established, sometimes significantly so. This is precisely where AI has the potential to change the game.

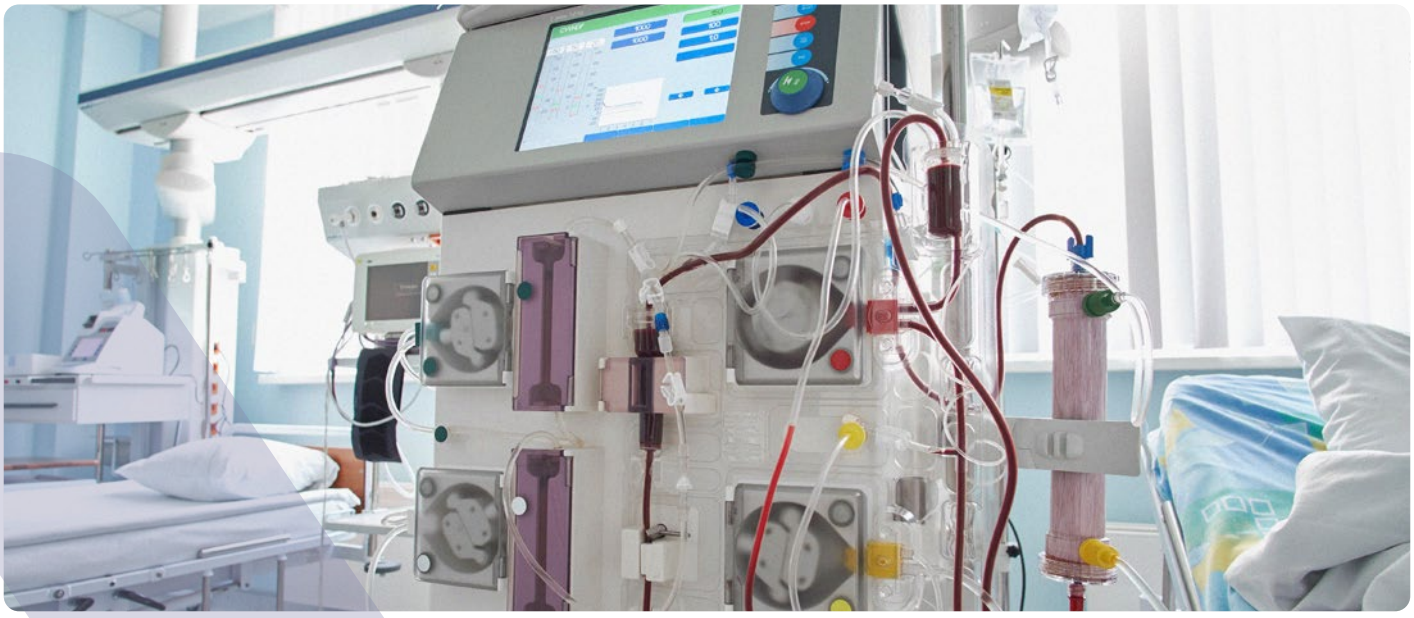
What AI-based systems can do, which clinicians simply cannot at scale, is continuously synthesise large volumes of routine clinical data, like trends in creatinine, fluid balance, medication exposures, vital signs, and comorbidity profiles, as well as identify patterns that precede overt AKI by hours. Several predictive models have now demonstrated the ability to flag at-risk patients well before conventional diagnostic thresholds are crossed, giving us a window for intervention that we previously did not have.

The work coming out of electronic health record-linked systems, including early experience from large NHS trusts, has shown that these alerts can be clinically actionable, which has prompted a review of nephrotoxic medications, optimisation of fluid status, or escalation of monitoring. The key lesson from early implementations is that the algorithm is only as useful as the clinical response it triggers. Alert fatigue is a real risk, and poorly designed systems can increase workload without improving outcomes.

Looking ahead, I think the more sophisticated shift will be away from binary alert systems toward continuous risk stratification tools that integrate biomarkers, genomic data, and real-time physiological parameters to give a dynamic, personalised AKI risk profile. We are also beginning to see AI applied not just to detection but to aetiology, helping differentiate, for instance, pre-renal from intrinsic causes, or identifying specific patterns consistent with drug-induced nephrotoxicity. The honest caveat is that most of the evidence to date comes from retrospective validation studies or single-centre implementations. What we still need, and what I hope the next few years will bring, are prospective, multicentre trials demonstrating that AI-guided AKI management actually improves patient outcomes, not just detection rates. That distinction matters enormously if we are to justify widespread adoption and build genuine clinical trust in these tools.

Q6 Nephrology practice can vary significantly across countries. What do you see as the key drivers of these differences?

This is something I think about quite a lot, because the variation is striking, not just between high- and low-income settings, but within regions we might assume are relatively homogeneous, including across Europe.



The most obvious driver is resource availability. Access to renal replacement therapies, such as dialysis and transplantation, remains profoundly unequal globally. In many parts of sub-Saharan Africa and South Asia, most patients who develop kidney failure simply have no access to any form of long-term dialysis. The tragedy is that AKI, which is highly prevalent in those settings often driven by infectious and obstetric causes, goes untreated not because of a lack of clinical recognition but because the infrastructure does not exist. Meanwhile, in high-income countries, the debate is about optimising modality choice and expanding home therapies. We are, in a sense, having entirely different conversations.

But even among well-resourced healthcare systems, practice variation persists, and here the drivers are more nuanced. Differences in clinical guidelines and their adoption play a role.

Kidney Disease: Improving Global Outcomes (KDIGO) provides a global framework, but national societies and payers often adapt or selectively implement recommendations, sometimes for legitimate reasons, sometimes reflecting inertia. Referral patterns differ considerably too; late referral to nephrology remains a problem in many systems, often rooted in how primary care is structured and how CKD is prioritised in general practice.

Epidemiology itself is a legitimate driver of practice difference that I think deserves more recognition. The predominant causes of CKD are not uniform; diabetic nephropathy dominates in some populations, IgA nephropathy in others, hypertensive disease in others still. Glomerulonephritis patterns vary by geography and ethnicity. A nephrology service calibrated to one disease burden will naturally look different from one shaped by another.

There is also the underappreciated influence of pharmaceutical access and reimbursement. The transformative therapies of the last decade, such as SGLT2 inhibitors and finerenone, are not equally available across countries. Regulatory approval, health technology assessment decisions, and reimbursement policies mean that a patient in one country may have access to evidence-based kidney-protective therapy that a patient elsewhere simply cannot obtain, despite identical clinical need. This creates a growing equity problem that the nephrology community needs to engage with more loudly.

Closely related to this is the striking disparity in access to genetic testing and rare kidney disease diagnostics. Conditions such as autosomal dominant polycystic kidney disease, Alport syndrome, or primary hyperoxaluria are not rare in the consulting room, yet the availability of comprehensive genomic testing, which can transform diagnostic precision, inform prognosis, and increasingly guide therapy, varies enormously across healthcare systems. This means that in many countries, patients go undiagnosed or misdiagnosed for years, missing windows for disease-modifying intervention.

Finally, I would highlight workforce and training structures. The density of nephrologists per population varies enormously, and so does the scope of practice expected of general internists or primary care physicians in managing CKD. In settings with limited specialist numbers, task-shifting and nurse-led models have emerged out of necessity. These measures, in some cases, have proven highly effective, offering lessons that better-resourced systems could learn from rather than dismiss.

The honest conclusion is that while some variation reflects legitimate adaptation to local context and disease patterns, much of it reflects inequity, in funding, in access, and in the political prioritisation of kidney disease. Closing those gaps requires not just clinical innovation but advocacy, and I think that is increasingly part of what it means to be a nephrologist today.

Q7 How does your role within ERA help translate the latest scientific research into updated guidelines and wider European initiatives?

I should be clear that my specific role within ERA is as Scientific Chair, which means my primary responsibility has been coordinating and shaping the scientific programme for the Congress, curating the sessions, selecting the science, and ensuring that what is presented reflects both the cutting edge of research and the questions that matter most to clinicians in practice.

In that sense, the translation I contribute to is perhaps more immediate than the longer journey from evidence to guideline. By bringing together the right studies, the right debates, and the right speakers, including late-breaking trials like FIND-CKD this year, the Congress itself becomes a mechanism for dissemination. When a nephrologist leaves Glasgow having heard results presented and debated by the investigators themselves, that shapes how they think about their practice, often before any guideline update has been written.

There is also something to be said for the role the scientific programme plays in setting the agenda. The topics we choose to highlight, the controversies we choose to ventilate, and the gaps we choose to draw attention to all feed into the wider conversation within the ERA community, including those colleagues who are more directly involved in guideline development and European initiatives. In that way, the scientific programme and the broader work of the organisation are in constant dialogue, even if my contribution sits more at the upstream end of that process.

Q8 What advice would you give to clinicians working in rapidly evolving or resource-limited environments?

This is probably the question I find most humbling, because the honest answer requires acknowledging that much of what we discuss at congresses like ERA, like the new therapies, the precision diagnostics, and the AI-driven tools, is simply not the reality for a large proportion of the world's nephrologists and their patients. Giving advice across that gap requires a degree of humility. That said, I think there are a few things I genuinely believe, having seen practice in different settings.

The first is to master what you have before lamenting what you do not. The fundamentals of nephrology, such as careful clinical assessment, blood pressure control, judicious use of RAS blockade, early identification of reversible causes of AKI, and thoughtful fluid management remain enormously powerful, regardless of setting. The evidence tells us that a substantial proportion of CKD progression and AKI-related mortality is preventable with interventions that do not require expensive technology. In resource-limited environments, rigorous application of the basics probably saves more lives than any single novel therapy.

The second piece of advice is to stay connected to the evidence, even when you cannot immediately apply it. The landscape is changing fast. Developments such as SGLT2 inhibitors, finerenone, and new options in glomerular disease are emerging, and understanding what the evidence shows matters, even if access is currently limited. Advocacy for better access starts with knowing what your patients are missing. Clinicians who are scientifically current are better placed to make the case to health systems, payers, and policymakers for what their patients need.

Third, and perhaps less obvious, is do not underestimate what you can contribute to the global knowledge base. Resource-limited settings often carry disease burdens, such as infectious-related AKI, tropical nephropathies, and genetic diseases that are less commonly recognised in wealthier settings. These diseases are profoundly underrepresented in the literature. Participating in registries, contributing to collaborative research, and documenting what you see is not a luxury reserved for academic centres in high-income countries; it is genuinely valuable and the nephrology community needs it.

Finally, on the human side, protect your clinical curiosity and resist burnout. Rapidly evolving or resource-constrained environments can be exhausting in different ways; one overwhelms you with change, the other with limitation. In both, the clinicians who sustain themselves longest and serve their patients best tend to be those who remain intellectually engaged, who seek out peers and communities (ERA exists precisely for this), and who hold onto the reasons they chose nephrology in the first place.