

# IMPROVING THE OUTLOOK FOR CHRONIC KIDNEY DISEASE

**THE PROGRESSION OF CHRONIC KIDNEY DISEASE** can take patients and doctors by surprise. But if public awareness about the risks of this potential killer changes, the prognosis for patients could too.

**Chronic Kidney Disease (CKD), which affects approximately 844 million people worldwide<sup>1</sup>,** typically progresses silently for years before it is diagnosed. But by then, in many cases, irreversible damage has already occurred.

The risk of CKD increases with age, so as the world's population grows older, it will affect even more people. Identified as the 16th leading cause of death worldwide in 2016, CKD is predicted to become the fifth leading cause of death by 2040<sup>2</sup>.

Tests and treatments for early-stage CKD are relatively cheap and simple, but are not routine. Currently many health systems primarily focus on treating end-stage kidney

disease rather than detecting and treating the early stage of CKD, allocating between 2-3% of their budget to end-stage kidney disease<sup>3</sup>. A collaboration between Japanese researchers and pharmaceutical companies, including AstraZeneca Japan, is seeking to change this by raising awareness of CKD and promoting early diagnosis.

In the broadest sense, CKD is a long-term condition where kidney function gradually declines over time. Once CKD begins, it progresses slowly but relentlessly every year. Early-stage symptoms are hard to detect, but they often co-occur with other non-communicable diseases, such as type 2 diabetes, hypertension and dyslipidemia.

Once symptoms eventually appear at later stages, patients may experience fatigue, nausea, loss of appetite and weight loss. Treatment at this point is costly and can have a profound effect on a patient's quality of life, including their ability to work and participate in daily activities.

## LACK OF DIAGNOSIS

Typically, treatments include management of underlying conditions such as hypertension and diabetes, which can slow the progression of the disease. Patients with end-stage CKD require a kidney transplant or must undergo dialysis, to clean the blood, which is a tremendously time-consuming and expensive treatment. If

untreated, end stage kidney disease is life threatening.

Despite the enormous global burden of CKD on patients, caregivers, economics and the environment, diagnosis of the disease's early stages is remarkably simple.

CKD diagnosis is based on a chronic decline in estimated glomerular filtration rate (eGFR), which is a measure of how well kidneys extract waste from blood. However, in its early stages, CKD cannot be diagnosed by eGFR alone — a urine test is required, says Shoichi Maruyama, a professor at the Department of Nephrology, at Nagoya University, in Japan. This test measures the level of protein in the urine, a high level means kidney damage.

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A urine test is needed to diagnose chronic kidney disease when it is in the early stages.

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"There's nothing difficult or complicated about it," agrees Toshiki Moriyama, a professor in the Department of Nephrology at Osaka University, also in Japan. "If protein is found in urine, it is a marker of disease."

Yet, he says, taking Japan as an example, 90% of stage 3 CKD cases remain undiagnosed<sup>4</sup>. "This is not a matter of science" says Moriyama, "it's a matter of awareness." He points to the fact that even though CKD has a much higher prevalence in Japan's aged population, other diseases of ageing, such as metabolic disease, are far more well known by the general public.

Low rates of urinalysis are a big barrier to early diagnosis. Even in a society such as Japan's, where many people attend annual health check-ups, early-stage CKD regularly goes undiagnosed because despite checks that include measurement of elevated protein levels in the urine, participation rate of the checks itself is not sufficient, says Maruyama.

Even when CKD is suspected, it may not be treated seriously enough because the long-term impact of CKD is not as well understood by patients and healthcare professionals, says Maruyama.

## MISSED OPPORTUNITIES

People may not go to a clinic, says Maruyama, even when they know their serum creatinine levels are a little high, because they do not understand that if CKD is diagnosed early, severe damage can be prevented. By the time patients do go to hospital, he says, a diagnosis of CKD will be registered, but by then many opportunities to slow its progression have been missed.

While pharmaceutical companies have been working on medications designed to slow or stop CKD progression, medication alone will not

change the future of the disease if diagnosis rates remain unchanged.

This is why academics, such as Maruyama and Moriyama, are working in collaboration with AstraZeneca Japan — and why bodies such as The Japan Kidney Association, are engaged in a major campaign to raise awareness and create better name recognition of CKD.

Both Maruyama and Moriyama regularly speak to doctors, nurses, and other healthcare professionals to raise their awareness, encourage regular testing, and explore early treatment if CKD is diagnosed. Likewise, Moriyama often talks to local governments across Japan to make them aware of CKD and its consequences as they plan for healthcare in their regions.

Hirotsugu Tsugumi, the head of cardiovascular, renal and metabolic disease area, Medical, AstraZeneca Japan, based in Osaka, says the company runs commercials in Japan to raise awareness, and hosts a website that posts up to date medical information and trial data and invites comments and questions from medical professionals.

**"THE TIME TO ACT FOR CHRONIC KIDNEY DISEASE IS NOW. THIS WILL IMPROVE OUTCOMES FOR PATIENTS."**

## THE TIME IS NOW

For Maruyama and Moriyama, robust evidence and strong tools are a critical part of successful outreach.

The Kidney Disease: Improving Global Outcomes (KDIGO) heat map, produced by an international group of nephrologists, is a matrix of eGFR and proteinuria levels and is widely used to assess a patient's



1. In chronic kidney disease, kidney function decreases over time.
2. Shoichi Maruyama, a professor of nephrology at Nagoya University, Japan.
3. Toshiki Moriyama, a professor of nephrology at Osaka University, Japan.

CKD stage. KDIGO guidelines also recommend regular testing of eGFR and proteinuria.

In another collaboration with AstraZeneca Japan, the scientists examined the likelihood that a patient would experience a cardiovascular event based only on their position on the KDIGO heat map, which indicates their stage of CKD. The study confirmed that the more advanced CKD was, then more likely a cardiovascular event was, underlying how important healthy kidneys are to heart health.

Raised awareness of CKD, in combination with recommended treatment options, could have a huge impact on the future health of the world's population, even beyond its impact on CKD itself, says the scientists.

"The time to act for CKD is now. By building awareness and access to testing, patients can be diagnosed early and receive the treatment and care they

need to slow the progression of CKD. This will improve outcomes for patients, health systems, caregivers, the economy, and the planet," agrees Tsugumi. ■

The advertiser behind this article is AstraZeneca. To learn more about AstraZeneca's commitment to raising awareness of CKD, visit: [www.astrazeneca.com/media-centre/articles/2023/transforming-kidney-health-burden-ckd.html](http://www.astrazeneca.com/media-centre/articles/2023/transforming-kidney-health-burden-ckd.html)

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