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EDITORIAL

Treatment of Diabetic Nephropathy: Changing Landscapes and New Horizons

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Until the early 19th century, diabetes mellitus (DM) was regarded as a disease of the kidney, in which one of the signs was that of an increase in the volume of urine and wasting. Only after the identification of glucose in blood and urine in the late 18th century was it recognized as a metabolic disorder. It was noted in parallel that patients with DM may show presence of coagulable urine containing albumin as a sign of kidney disease. After the advent of availability of insulin in the early 1920s, which led to increased survival, diabetic nephropathy became more apparent. After a few isolated descriptions that were ignored, the now-famous paper of Paul Kimmelstiel and Clifford Wilson appeared in 1935 detailing nodular renal lesions in just 8 maturity-onset (48 to 68 years old) people with diabetes.[1]

Until the late 1970s there was no specific treatment of diabetic nephropathy, and the median survival time was 5 to 7 years. In early 1980s it was demonstrated that blood pressure reduction imparted beneficial kidney protective effects. Ten years later the superior reno-protective effect of angiotensin converting enzyme inhibitors (ACE-i) in type 1 diabetes was documented. With these advances in therapies, the median survival time from the onset of diabetic nephropathy tripled. In 2001 two large randomized controlled trials with angiotensin II receptor blockades demonstrated similar beneficial effects on a combined renal endpoint including death.[2]

In the recent past, there has been a paradigm shift in our approach and management of diabetic nephropathy. This includes discovery of a multitude of novel therapeutic targets, and a "multi-pronged" approach to achieve a desirable kidney outcome of the patient. This spans beyond addressing the metabolic disorder (measured by glycemic control) or control of blood pressure by blocking the renin-angiotensin system. Along with kidney protection, these studies demonstrate cardiovascular risk reduction as well. Thus, on one hand, reducing risk of cardiovascular events improves survival, and on the other hand that makes preserving kidney function that much more critical. We now have several novel approaches to address both of these patient outcomes. This is an exciting time exemplified by a unique nexus of innovation and discovery, policy, and technology, which will hopefully change both longevity and quality of life of patients with diabetes mellitus.

The current issue of *Advances in Chronic Kidney Disease* is expertly guest edited by Drs Rosas and Cherney.[3] They aptly outline the works of an immensely talented team of contributors that they have assembled to benefit our readers. On behalf of the editorial team and the publishers, I congratulate these contributions, particularly during a difficult year of the pandemic. Most importantly, this knowledge will benefit our readers—and, in turn our patients—and for that we are grateful.

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