The incidence rate of end-stage renal disease (ESRD) continues to grow in Korea as well as in other countries. Diabetic kidney disease (DKD) remains the leading cause of ESRD accounting for nearly 71% of the countries participating in the United States Renal Data System (USRDS) annual data report 2018 provided data on the incidence of ESRD with assigned primary cause being diabetes. According to the data from Korean Diabetes Association, 14.4% of adults aged 30 years or older have diabetes and this rate rises to 29.8% in adults aged 65 years or older. One-third of patients with diabetes have albuminuria or decreased renal function. In 2017, 48.9% of new ESRD patients were having DKD as their primary cause of ESRD in Korea. Therefore, diabetes is the key contributor to the global burden of chronic kidney disease (CKD) and ESRD. Over the past decades, approaches to the management of patients with DKD include glycemic control and blood pressure control using renin-angiotensin-aldosterone blockade. However, many of these patients experience progression of renal and cardiovascular disease despite of these approaches, highlighting the unmet need to identify novel therapies. In this talk, I will briefly review current available guidelines for treatment of DKD and evidence from recent trials. As the European Medicines Agency and the US Food and Drug Administration removed the contraindication on the use of metformin in CKD stage 3 patients, the safety concerns and therapeutic potential of renal protection of metformin will also be discussed.