It has been well known for many years that cardiovascular disease disproportionately affects patients with chronic kidney disease (CKD) and kidney failure, both through acceleration of atherogenesis as a consequence of reduced kidney function and through the various comorbidities with which our patients are frequently afflicted. Despite growing mechanistic insights into kidney–heart interactions, atherogenesis, cardiac hypertrophy, valvular heart disease, and other phenomena and into new therapies that are available, patients with kidney disease continue to experience an excessive burden of cardiovascular disease and events.

Cardiovascular disease, particularly coronary artery disease, is more often a condition of the older individual, but several recent reports have painfully reminded us that cardiovascular disease and its devastating consequences in the patient with kidney disease starts early, with increases in cardiovascular mortality beginning in childhood and continuing through young adulthood (1, 2). Of note, this increased mortality is found not only in young adults in whom kidney disease developed in childhood but also in those in whom it developed later, during the young adult years; this emphasizes that cardiovascular disease may develop rapidly in the setting of kidney disease. An additional sobering thought is that whereas normalization or near-normalization of kidney function with transplantation has innumerable salutary effects, the cardiovascular disease burden experienced by the patient continues after transplantation, and ongoing vigilance and aggressive management are essential.

Fortunately, as our mechanistic understanding of these relationships has grown, we have learned over the years that our patients can also benefit from many of the therapies that are provided to patients without kidney disease. Statin drugs, for example, constitute one such therapy, but as we are reminded in an article in this issue, the benefits of statins are less with more advanced kidney disease, and questions remain as to why this is so. Coronary artery bypass grafting and percutaneous coronary interventions, including stent deployment, are used successfully on a regular basis in patients with CKD and kidney failure.

In this issue, we highlight several of the more recent cardiovascular interventions and their impact in patients with kidney disease. Although it is not unexpected that such therapies may be more challenging to implement in the patient with kidney disease, there are data that such therapies, in addition to prolonging survival, may in some cases lead to improvements in kidney function, with the potential to forestall the development of kidney failure. Both transcatheter aortic valve replacement (TAVR) and mitral valve clipping (MitraClip) have been used in patients with kidney disease and are two such recent procedural examples.

In addition to procedural interventions such as TAVR and MitraClip, as noted in this issue, newer medical therapies also hold promise for patients with kidney disease. One such example is represented by the proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors. As a consequence of inhibition of PCSK9, LDL receptor numbers on the hepatocyte surface increase, promoting LDL uptake and subsequently suppression of LDL synthesis. Although data at this time are limited, especially in patients with more advanced kidney disease, this new class of agents merits further study and hopefully may find a place among the therapeutic medical options for reducing the morbidity and mortality related to cardiovascular disease.

All nephrologists are well aware of the high incidence of cardiovascular disease in the kidney disease population. Ongoing research is urgently needed to further our understanding and pursue new therapies to help us better manage and hopefully prevent this vexing problem.