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Cardiovascular disease in patients with chronic kidney disease

Patients with chronic kidney disease (CKD) have an increased risk of developing cardiovascular disease with its sequelae of coronary artery disease, heart failure, and sudden cardiac death. Overall, cardiovascular risk in CKD patients is extremely elevated compared with patients who do not have CKD, leading to a significantly enhanced morbidity and mortality once kidney function declines. In fact, the chances of patients with advanced CKD ever reaching the dialysis stage are lower than dying from cardiovascular disease. Ironically, these cardiovascular high-risk patients are often undertreated because of possibly atypical symptoms, concerns about diagnostic work-up involving radiocontrast agents, uncertainty about drugs allowed in advanced CKD, and others. In addition, CKD not only influences the clinical course of cardiovascular disease but also limits the benefit of classic cardiovascular risk-reducing treatments such as lipid-lowering therapy, and, furthermore, the presence of CKD impairs the prognosis of patients after cardiac interventions such as transcatheter aortic valve implantation. Moreover, given the exclusion of patients with advanced CKD from most cardiovascular outcome trials, the database for evidence-based recommendations to treat these patients is limited.

The current issue of *Herz* addresses various aspects of cardiovascular disease in patients with CKD and focuses on this growing high-risk population. The article by Dr. Schunk and colleagues addresses the pathophysiology and epidemiological aspects of heart and kidney disease, while in his overview Dr. Schlieper discusses cardiovascular work-up in advanced CKD. In addition, three articles focus on special aspects of the therapy of patients with advanced CKD including heart failure, coronary artery disease, and cardiac valvular disease, discussing in detail the different treatment options in CKD and offering practical recommendations.

The group of patients with CKD has been underrecognized in the cardiology field for decades but with its increasing incidence, this population deserves more attention. In addition, given recently developed therapeutic approaches such as treatment with SGLT2 inhibitors or finerenone, novel options exist to reduce cardiovascular risk in patients with CKD. Still, the most important aspect in this context is the fact that the current evidence needs to be applied to reduce cardiovascular risk and that CKD patients should be treated based on the results of the most recent cardiovascular outcome trials.

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