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Coronary Artery Disease

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Commentary

Coronary heart disease is the most common cause of death in the general population and in patients with ESRD. Both groups are subject to the same cardiovascular risk assessment and treatment approaches. Non-invasive coronary artery imaging has advanced, allowing for earlier diagnosis of subclinical disease. Medical care of coronary artery disease aims to alter the illness's natural course and alleviate angina symptoms. Despite the risks of stroke, myocardial infarction, and chest wound infection, coronary bypass surgery appears to be the preferred option in stable ESRD with multi vessel coronary artery disease. Percutaneous coronary intervention on the target vessel has been linked to the best outcomes in individuals with ESRD and acute coronary syndromes. In the general population of the United States, coronary heart disease is the leading cause of mortality. The incidence and prevalence of heart disease are predicted to rise as a result of the obesity epidemic and the expected worsening of cardiovascular risk factors in the general population. In people with Chronic Kidney Disease (CKD), Coronary Artery Disease (CAD) is the major cause of death: In the United States, half of the 320,000 people with ESRD who require dialysis or kidney transplantation will die from cardiovascular reasons. Patients with milder forms of CKD are more likely to die from CAD than from kidney failure that necessitates dialysis. The following are the results of observational research on CAD and ESRD: Approximately 70% of patients on dialysis had considerable coronary artery calcification, indicating coronary atherosclerosis. Patients with CAD and ESRD have markedly increased mortality over the general population, treatment with disease-modifying therapy that is proved to reduce rates of (MI) or death. (e.g., aspirin, β adrenergic receptor blockers (BB), Angiotensin-Converting Enzyme Inhibitors (ACEI), 3-methylglutaryl CoA reductase inhibitors or statins) patients with ESRD who are selected for revascularization with coronary artery bypass graft (CABG) or percutaneous coronary intervention appear to have less precision and accuracy with non-invasive imaging, and 5 patients with ESRD who are selected for revascularization with Coronary Artery Bypass Graft (CABG) or percutaneous coronary intervention appear to have less precision and accuracy with non-invasive imaging. Patients with ESRD had a 10-fold higher risk of death from Coronary Heart Disease (CHD) per 1000 person-years than those who have five Framingham risk factors projected across time. This is partly due to the observation that patients with ESRD have a cluster of CHD risk factors that most commonly include advanced diabetes; hypertension; low HDL cholesterol: hypertriglyceridemia; and, less commonly, obesity, smoking, and family history of CHD. It's also because of the specific alterations that occur in ESRD, which speed up atherosclerosis, destabilise atherosclerotic plaque, produce myocardial fibrosis, and lead to valvular heart disease. It is beyond the scope of this article to speculate on the wide range of basic mechanisms (e.g., inflammation, oxidative stress, disordered calcium-phosphorous-parathyroid hormone balance). As a result, most individuals with ESRD have substantial coronary artery disease and structural heart disease. In addition, most patients with ESRD have extensive coronary, aortic, and valvular calcification (aortic and mitral), which may influence interventional and medical management Finally, biomarkers of cardiac injury (troponin and creatine kinase myocardial band) are frequently elevated in patients with ESRD in the absence of cardiac symptoms or signs of ischemia. The noncalcium phosphate binder sevelamer and statins are two typical treatments for lowering LDL cholesterol in ESRD patients .Sevelamer operates as a bile-acid sequestrant as well as binding phosphate in the gastrointestinal system, resulting in a predicted reduction in LDL cholesterol.

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