Lecture Code : DS02-S1
Session Name : Dialysis Specialist Physician Course 2
Session Topic : Vascular Access Essentials for Dialysis Specialist Physician
Date & Time, Place : June 22 (Sun) / 10:40-12:40 / Room 3 (GBR 103)

Vessel Preservation in Pre-Dialysis CKD Patients

Do Hyoung Kim
Kangnam Sacred Heart Hospital, Republic of Korea

Vascular access (VA) is the cornerstone of hemodialysis (HD), serving as a critical determinant of dialysis adequacy and patient outcomes. However, VA-related complications are common and can significantly impact morbidity and mortality in HD patients. Effective VA preservation strategies are essential to ensuring long-term dialysis success and reducing catheter dependence. The preferred VA for HD is an arteriovenous fistula (AVF) or an arteriovenous graft (AVG). Despite this, a substantial proportion of incident HD patients initiate dialysis with a temporary or permanent dialysis catheter due to the absence of a pre-established functional VA. Dialysis catheter use is associated with an increased risk of bloodstream infections and higher mortality, underscoring the importance of timely AVF or AVG creation prior to dialysis initiation. Optimal VA maturation requires preserved arterial and venous structures, as well as adequate cardiac function. In patients with chronic kidney disease (CKD), vascular preservation is critical. Unnecessary placement of central venous catheters or peripherally inserted central catheters should be minimized to prevent central vein stenosis. Additionally, venipuncture should be performed in a distal-to-proximal manner to preserve proximal veins for future VA use. During percutaneous cardiac interventions, careful consideration should be given to preserving the radial artery to maintain future VA options. Early education on vascular preservation is paramount in CKD management. Patient counseling should emphasize the importance of vein preservation, while healthcare providers should integrate vessel preservation strategies into the treatment planning for patients with advanced CKD. This review highlights key strategies for preserving peripheral veins, central veins, and arterial access in CKD patients to optimize long-term VA function. Implementing a proactive approach to vascular preservation may reduce catheter dependency, improve VA longevity, and enhance overall dialysis outcomes.

Keywords: Chronic kidney disease, Dialysis catheter, Hemodialysis, Vascular access, Vessel preservation