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Malnutrition, Protein Energy Wasting and Sarcopenia in CKD

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Malnutrition, protein-energy wasting (PEW), and sarcopenia are major nutritional and metabolic disorders commonly observed in patients with chronic kidney disease (CKD). These conditions are interrelated yet distinct entities, each independently associated with poor clinical outcomes such as increased hospitalization, higher fracture risk, cardiovascular events, mortality, and reduced quality of life. Among these, PEW is a unique syndrome specific to CKD, characterized by a simultaneous decline in body protein stores and energy reserves. It is driven by a combination of reduced nutrient intake, chronic inflammation, metabolic acidosis, hormonal disturbances, and catabolic comorbidities. Malnutrition and PEW frequently coexist with sarcopenia, which is defined as a progressive loss of skeletal muscle mass and strength. Despite increasing clinical attention, the diagnosis and management of these conditions remain challenging due to the absence of universally accepted criteria, especially in CKD populations. While several diagnostic tools and consensus statements have been proposed, their application in nephrology practice is often limited by the lack of CKD-specific cutoff values and limited accessibility in clinical settings. Moreover, awareness among healthcare professionals regarding these nutritional syndromes remains suboptimal, and access to nutritional assessment and intervention services is limited in many care environments. In this lecture, we will review the pathophysiology and diagnostic approaches for malnutrition, PEW, and sarcopenia in CKD, discuss their clinical consequences, and explore practical strategies for early identification and management.

Keywords: Chronic kidney disease, malnutrition, protein energy wasting, sarcopenia, outcome