THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
APSN
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

Submission No. : NUR2-0001
Session Title : Nutrition 2
Session Topic : Sarcopenia and Obesity in Kidney Disease
Date & Time, Place : June 15 (Sat) / 08:30-10:00 / Room 5 (202)

The Sarcopenic Obesity Paradigm in CKD

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There are ~600 million people worldwide affected by obesity. Obesity is an important risk factor for CKD; yet once patients develop CKD, a large proportion suffers from malnutrition (also called protein-energy wasting, PEW). One of the characteristics of PEW is the presence of sarcopenia, defined as the presence of low muscle mass along low muscle strength. Sarcopenic obesity is a condition where low lean body mass (sarcopenia) is accompanied by the presence of increased fact mass, especially visceral fat mass. The prevalence of sarcopenic obesity increases with advancing age. The mechanisms of sarcopenic obesity are complex and include a humoral factors (some of which are age-related) and lifestyle factors. CKD is a condition predisposing to sarcopenic obesity, due to the enhanced presence of several of these mechanisms. The prevalence of sarcopenic obesity increases in those with more severe stages of CKD, and it can be as high as 20% in patients with stage 4 CKD. Sarcopenia and sarcopenic obesity is associated with increased mortality both in patients with CKD and in those with normal kidney function. Interventions targeting sarcopenic obesity should focus primarily on increasing muscle mass, and include various exercise regimens and the administration of anabolic medications (e.g., human growth hormone, anabolic steroids, etc.). These interventions can successfully increase muscle mass, but their impact on clinical outcomes remains unclear. The impact interventions targeting adiposity in patients with advanced CKD and ESRD are controversial and require further studies.

Keywords: CKD, obesity, malnutrition, sarcopenic obesity, mortality