Giulia Belluardo
University of Gugliemo Marconi
Italy

Cognitive impairment, sleep alterations and associated pathological factors in haemodialysis patients

Abstract:

Chronic kidney disease (CKD) is rapidly increasing worldwide and is recognised as an expanding public health concern. Patients with CKD face a significantly higher risk of developing cognitive impairment (CI) and sleep disturbances compared to the general population. Several studies have shown that haemodialysis (HD) patients perform worse than the general population on tests of overall cognition, attention and orientation, concept formation and reasoning, construction and motor performance, executive functions, language, and memory. Additionally, HD patients experience a range of sleep disturbances, such as changes in duration, structure, quality, circadian rhythms, as well as parasomnias and specific sleep disorders. The mechanisms that may contribute to CI and sleep alterations in HD patients are numerous. Some are specific to cognitive impairment, such as diabetes mellitus, atrial fibrillation, dyslipidaemia, hypertension, uraemia, oxidative stress, hyperuricemia, and electrolyte imbalances; others are specific to sleep alteration such as sympathetic-vagal imbalance, lower levels of melatonin and vitamin D, and high levels of parathormone. Additionally, there are common risk factors for both CI and sleep disturbances, including chronic inflammation, cardiovascular and cerebrovascular disease, hypotension, and alterations in cerebral haemodynamics. It has been demonstrated that lower sleep quality and sleep disorders in the general population predict worse cognitive performance, indicating a strong link between sleep health and cognitive functions. Therefore, focusing on both risk factors for HD and sleep disorders appears to be a promising approach for the appropriate clinical management of HD patients. Optimal management of HD patients with IC and sleep disorders should include a multidisciplinary approach capable of defining the characteristics of these conditions, such as prescribing instrumental investigations, conducting detailed cognitive assessments, and implementing sleep therapies. The goal is to equip patients with tools for symptom control and secondary prevention of IC and sleep disorders. From an experimental perspective, pay-

ing attention to risk factors common to IC and sleep disorders in these patients could enhance understanding of the mechanisms underlying IC and sleep disturbances in HD and facilitate the development of new, effective prevention strategies.toprovide

Biography

Giulia Belluardo is a distinguished researcher and academic at the Department of Human Sciences, University of Guglielmo Marconi in Rome, Italy. Her work focuses on advancing knowledge in human sciences through innovative research and interdisciplinary collaboration. Based in Rome, Dr. Belluardo is dedicated to promoting academic excellence and contributing to the global exchange of ideas in her field.