

# A Systematic Review of Hemodialysis Patient Care with a Focus on Cardiovascular Disease Events and the Atypical Role of Hyper- and/or Hypotension

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## EDITORIAL

Hemodialysis-induced hemodynamic instability is a serious but underappreciated problem. Furthermore, cardiovascular events are the major cause of morbidity and mortality in hemodialysis patients who have high blood pressure. However, there are numerous debates about the function and management of hyper- and/or hypotension during hemodialysis that must be resolved. Chronic Kidney Disease (CKD) causes the kidney function to deteriorate over time. As a result, the patient's Glomerular Filtration Rate (GFR) declines to 60 ml/minute, and the albumin-to-creatinine ratio in his urine rises to >30 mg/g. End-Stage Renal Disease (ESRD) is defined as a total, irreversible, and permanent kidney failure in which the patient's body retains fluid, resulting in the accumulation of toxic wastes. As a result, ESRD patients require appropriate medication to replace and compensate for the work of their failing kidneys. CKD and ESRD are becoming more common over the world. According to the National Kidney Foundation of the United States, 26 million persons in the United States have CKD, which is the precursor to ESRD, and millions more are at risk. It is estimated that more than 700,000 Americans have ESRD. In Malaysia, the increase in ESRD was largely due to the increased incidence of kidney disease accounting for 58% of new patients receiving dialysis. Similarly, CKD is growing rapidly in Pakistan due to an increase in the number of patients with diabetes and high blood pressure, late diagnosis, and a high dose of kidney stones leading to the death of an estimated 20,000 Pakistani people every year. Heart disease is a major cause of death in patients with ESRD. It is estimated that ESRD patients are 5 to 20 more likely to die from cardiovascular causes than most people. It is also a well-established fact that blood

pressure plays a significant role in death and CVD-based mortality in ESRD patients on hemodialysis; however, careful literature reviews of various observational studies often show conflicting and contradictory data regarding the relationship between hypertension (hyper and hypotension) and CVD-based mortality in patients on hemodialysis. Management of patient care in hemodialysis patients is an important but complex task for members of the health care team. In this regard, randomized controlled trials designed to reduce the major outcomes of cardiovascular events; mortality and morbidity of such patients have so far never been shown to be very effective. The area of greatest concern in the management of hemodialysis patients as it is related to the above-mentioned outcomes includes the burden of heart disease, hyper- and/or hypotension control, anemia, inflammation, and abnormalities in mineral metabolism. Sometimes, these issues are further compounded by the contradictory and contradictory data found in visual and randomized controlled trials. The main reason for such controversies may be limited therapies to reduce these points in patients with nutritional hemodialysis. Therefore, in the continuous management of advanced patient care in hemodialysis it is important to perform, in the future, well-controlled randomized controlled trials to meet the goal of improving outcomes. Such evaluations should look at new therapies to better address these factors, consideration of additional conditions that have not been properly evaluated to date, and alternative therapies with new goals. According to the literature, it has now been established that during hemodialysis treatment the changes in hemodynamics serve as a signal of a higher risk of illness and death. The most common clinical complications include the development and management of hypertension or hypotension.

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