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Uptodate Review of Intradialytic Hypotension - Mechanism, Clinical Impacts and Management

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Intradialytic hypotension (IDH) is one of the major complications in hemodialysis patients. IDH occurs in approximately 10-12% in hemodialysis patients. Despite advances in technology of hemodialysis, IDH still remains important clinical impacts. IDH may result in shorter dialysis treatments, missed treatments, or unadjustments in target weight. Furthermore, IDH leads to myocardial infarction, cerebrovascular accident, gut ischemia, loss of residual kidney function, and death. The National Kidney Foundation Kidney Disease Outcomes Quality Initiative (KDOQI) guideline defines IDH as either a (i) a decline in systolic blood pressure (SBP) of ≥ 20 mmHg or (ii) a decline in mean arterial pressure of ≥ 10 mmHg, presence of end organ ischemia, and requirement for intervention to increase blood pressure or improve symptom. Pathophysiologic Mechanisms of IDH are the combination of a decline in blood volume due to ultrafiltration and impaired vascular resistance and venous tone with a reduced cardiac reserve.

The risk factors for IDH were known as patient-related factors (increasing age, longer hemodialysis vintage, hyperphosphatemia, anti-hypertensive medications, lower body mass index, lower albumin, diuretic use), comorbid diseases (diabetes, coronary artery disease, cardiac dysfunction) and hemodialysis-related factors (increased intradialytic weight gain, lower predialysis blood pressure, increased ultrafiltration rate, lower dialysate sodium, lower dialysate calcium, acetate buffer, longer interdialytic interval). Several methods can be applied to reduce its incidence, including reducing intradialytic weight gain, increasing dialysis time and frequency, frequent assessment of dry weight, as well as prescribing cool or isothermic treatments. In addition, the application of new technology like real time measurements of plasma electrolyte concentrations or fluid status will potentially reduce the risk of IDH, in combination with individualized attention for the patient in all aspects of daily clinical practice.