Recent Advances in the Prevention of Hypotension during Hemodialysis

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Intradialytic hypotension (IDH), defined as a nadir systolic blood pressure of less than 90 mmHg on more than 30% of treatments, is associated with high mortality and morbidity. An ultrafiltration rate >10ml/h/kg, and even more so >13ml/h/kg, is highly predictive of cardiovascular and all-cause mortality. Randomized controlled trials of various agents to reduce IDH such as droxidopa and sertraline have been conducted and show promise, but all require further testing before widespread use. Frequent IDH is associated with high interdialytic weight gain (IDWG). Studies on prolonged dialysis, biofeedback devices and cooled dialysate have yielded promising results. Intradialytic relative blood volume monitoring devices have been investigated in preventing IDH but results are mixed. While such exciting new drugs and devices remain on the horizon for IDH, simpler strategies can be employed in the interim. It may be prudent to offer additional ultrafiltration sessions for patients with large IDWGs, given that more frequent dialysis/nocturnal dialysis patients have less episodes myocardial stunning. The current prescriptive method of volume control is often crude and requires a paradigm shift, with a proactive approach, individualized patient risk assessment, and management plan.