

## DIALYSIS

## Convective therapies reduce risk of intradialytic hypotension

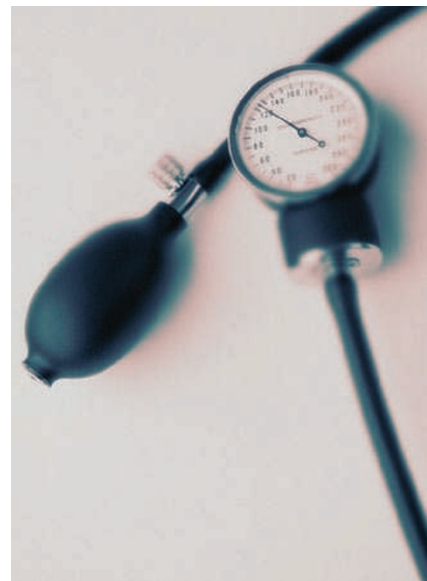
A randomized, controlled trial performed in Italy reports that convective dialysis therapies (online predilution hemofiltration and hemodiafiltration) reduce the incidence of intradialytic symptomatic hypotension (ISH), a common complication in patients on hemodialysis.

A number of studies have suggested that convective therapies, which increase removal of 'middle molecules', improve patient outcomes and reduce the risk of ISH. A previous trial by the same group—the MPO study—showed that high-flux hemodialysis (a convective treatment) was associated with improved survival among high-risk patients with a serum albumin level  $\leq 40$  g/l.

In the study now reported, Francesco Locatelli *et al.* randomly assigned 146 adults who were on thrice-weekly hemodialysis or hemodiafiltration to receive hemodialysis ( $n = 70$ ), online predilution hemofiltration ( $n = 36$ ) or online predilution hemodiafiltration ( $n = 40$ ). Over a median follow-up of 1.5 years, 15 patients died, with no differences between groups. The researchers also reported a nonsignificant trend towards an increased dropout rate among patients in the hemofiltration group, which they say highlights the

difficulties of performing hemofiltration and maintaining patients on this mode of dialysis. Of 28,950 dialysis sessions evaluated, 2,169 sessions (7.5%) were complicated by ISH. Among patients assigned to hemodialysis, the absolute frequency of ISH increased from 7.1% to 7.9% between the run-in period and the evaluation period. By contrast, the absolute frequency of ISH decreased from 9.8% to 8.0% in patients on hemofiltration and from 10.6% to 5.2% in patients on hemodiafiltration. Multivariate logistic regression analyses (adjusted for factors including age, predialysis blood pressure, and diabetes) showed that, compared with hemodialysis, hemofiltration reduced the risk of ISH by 31% (odds ratio 0.69, 95% CI 0.51–0.92;  $P = 0.011$ ) and that hemodiafiltration reduced the risk of ISH by 54% (odds ratio 0.46, 95% CI 0.33–0.63;  $P < 0.001$ ). Mean predialysis systolic blood pressure increased by 4.2 mmHg in patients on hemodiafiltration whereas it decreased by 0.6 mmHg in patients on hemodialysis and by 1.8 mmHg in patients assigned to hemofiltration.

“This paper could have important clinical implications,” states Locatelli, “given that the beneficial effects of convective therapies can be achieved in



everyday clinical practice.” Locatelli does note, however, that hemofiltration might be difficult to apply in clinical practice given the high drop-out rate seen with this modality.

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**Original article** Locatelli, F. *et al.* Hemofiltration and hemodiafiltration reduce intradialytic hypotension in ESRD. *J. Am. Soc. Nephrol.* 21, 1798–1807 (2010)