

Decreased patient survival when ultrafiltration rates rise above 6.8 mL/h/kg threshold.¹

Chazot C, Vo-Van C, Lorriaux C, et al. Even a moderate fluid removal rate during individualized hemodialysis session times is associated with decreased patient survival. *Blood Purification*. 2017;44:89-97.

This retrospective study of 190 patients at the Tassin dialysis unit examined prescribed dialysis therapy times according to clinical complications vs uniform prescriptions while also evaluating the relationship between fluid removal rate (FRR) and patient outcomes.

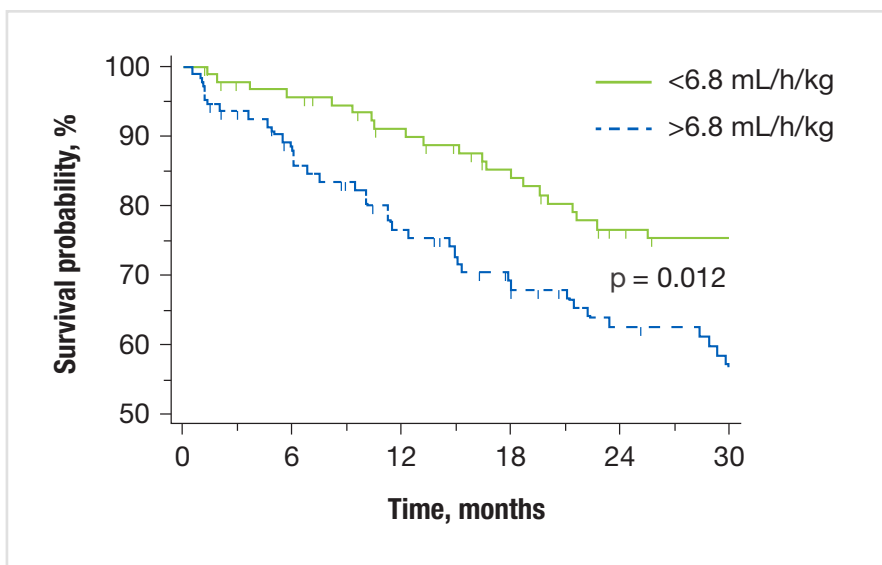
In this study the median FRR was 6.8 mL/h/kg with the majority of patients (88%) below 10 mL/h/kg, a threshold associated with increased mortality in the Dialysis Outcomes and Practice Patterns Study.²

The FRR according to session duration was significantly higher in patients prescribed 4 and 5 hours per session when compared with patients prescribed 6, 7, and 8 hours per session.

Further analysis compared observations in two subgroups of patients, those above and below the median FRR. Patients in the higher FRR subgroup experienced more frequent intradialytic hypotensive episodes, while no difference was found between the subgroups regarding pre- or post-dialysis systolic blood pressure.

Fluid removal rate independently affects patient survival at a lower threshold than previously reported

When reviewing the effect of fluid removal rates and patient outcomes, patients who were above the fluid removal rate median (6.8 mL/h/kg), had a significant increased mortality risk.



This study reported a significant association between mortality and fluid removal rates, with a 91% increased risk of mortality ($p = 0.012$) in patients whose ultrafiltration rates rose above 6.8 mL/h/kg, despite the large percentage (88%) of patients with FRR below 10 mL/h/kg. Results from the cardiovascular-related mortality arm did not reach significance, however, over 40% of the deaths were of cardiovascular origin.

Besides well-established cardiovascular complications in higher fluid removal rates, one explanation for the lower threshold could potentially be the lack of achieving targeted patient dry weight and the exposure to chronic fluid overload. These results highlight the importance for further studies to evaluate the complexities surrounding patient outcomes and fluid removal rates in dialysis patients.

Study Design: This study was a retrospective study that included 190 prevalent dialysis patients receiving hemodialysis or post-dilution online hemodiafiltration therapy thrice weekly in the Tassin dialysis unit, with an average follow-up time of 24.6 months.

Important Information: The reported benefits of home hemodialysis (HHD) may not be experienced by all patients. The NxStage System is a prescription device. All forms of hemodialysis involve some risks.

References: **1.** Chazot C, Vo-Van C, Lorriaux C, et al. Even a moderate fluid removal rate during individualised haemodialysis session times is associated with decreased patient survival. *Blood Purif.* 2017;44:89-97. **2.** Saran R, Bragg-Gresham JL, Levin NW, et al. Longer treatment time and slower ultrafiltration in hemodialysis: associations with reduced mortality in the DOPPS. *Kidney Int.* 2006;69:1222-1228.



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