

This is a Fresenius Medical Care summary of:

Haemodiafiltration and mortality in end-stage kidney disease patients: a pooled individual participant data analysis from four randomized controlled trials

Peters SAE et al. *The Netherlands, Nephrol Dial Transplant* 2016;31(6):978-984

Introduction

This analysis of individual participant data from four large randomised controlled trials compares the effects of haemodiafiltration (HDF) with haemodialysis (HD) on mortality in end-stage kidney disease (ESKD).

Individual patient data were pooled into one data set to increase the power for subgroup analyses and confounder adjustment.

Objective

To assess the effect of HDF compared with HD on the risk of mortality in adults undergoing chronic HD.

Design

Individual data of 2793 patients were pooled from the CONTRAST, ESHOL, French HDF, and Turkish HDF studies, which were designed to investigate the effects of HDF on mortality endpoints.

To resolve bias, follow-up data on mortality were collected for some patients who had been censored in the original trials because of randomised treatment discontinuation, e.g., due to renal transplantation.

Results

- In ESKD patients HDF significantly reduced the risk of all-cause mortality by 14% and cardiovascular (CV) mortality by 23%.

- The higher the body surface area (BSA)-adjusted convection volume the greater was the chance of survival (see table).
- Patients receiving HDF with more than 23 L / 1.73 m² BSA-adjusted convection volume per session showed the highest mortality risk reduction.

Cause	Online HDF: BSA-adjusted convection volume (L/session)		
	<19	19-23	>23

All-causes

Unadjusted	0.91 (0.74; 1.13)	0.88 (0.72; 1.09)	0.73 (0.59; 0.91)
Adjusted	0.83 (0.66; 1.03)	0.93 (0.75; 1.16)	0.78 (0.62; 0.98)

Cardiovascular

Unadjusted	1.00 (0.71; 1.40)	0.71 (0.50; 1.01)	0.69 (0.48; 0.98)
Adjusted	0.92 (0.65; 1.30)	0.71 (0.49; 1.03)	0.69 (0.47; 1.00)

Hazard ratios and 95% confidence intervals for all-cause and CV mortality by delivered BSA-standardized convection volume in litres per 1.73 m² per treatment with standard HD as a reference (Based on data from Peters et al. *NDT* 2016;31(6):978-984)

Conclusion

This analysis indicates that HDF reduces the risk of mortality compared with conventional HD. The greatest benefit is to those patients receiving higher BSA-adjusted convection volumes. The authors state: "...our analysis based on individual patient data provides the best level of evidence to date for the superiority of online HDF as the treatment of choice for ESKD patients".