

This is a Fresenius Medical Care summary of:

Why choose high volume online post-dilution hemodiafiltration?

Basile C et al. Italy, J Nephrol 2017;30(2):181-186

Introduction

This review of post-dilution hemodiafiltration (HDF) addresses the following four important questions surrounding the prescription of HDF:

“Why do we need new dialysis treatment options?”

The mortality rate of patients on dialysis remains alarmingly high. US data from 2013 on dialysis patients showed that all-cause mortality is 6.5–7.9-times higher than in matched general population individuals.

European data from 2011 from incident dialysis patients showed a 2-year survival probability of 71.6%, and that UK 5-year survival is lower than for other serious conditions, e.g. acute myocardial infarction or stroke.

“Why do we need convective clearance?”

Increasing urea clearance did not lead to improved survival, thus removing larger molecules and protein-bound molecules by HDF might be the way to decrease mortality in dialysis patients.

Among three of the large randomised controlled trials investigating survival outcomes of HDF versus conventional haemodialysis (HD) published over the last few years, one trial showed a benefit for HDF in the primary outcome. Two trials showed a benefit for HDF in the subgroup and post-hoc analysis, respectively.

Existing meta-analyses differ in what can be seen as modern convective therapy, especially when therapies are considered with convective volumes similar to internal filtration reached in high-flux HD. The one meta-analysis largely fulfilling the EUDIAL working group criteria showed a decreased risk of mortality with HDF. Statistical re-analysis of individual patient data from the four large randomised controlled trials of HDV versus HD (the CONTRAST, ESHOL, French HDF, and Turkish HDF study) was done to increase evidence over the meta-analysis. This data analysis showed a reduced risk for all-cause mortality and cardiovascular mortality with HDF.

“Why should high volume post-dilution HDF be associated with improved survival?”

The definitive answer regarding the underlying mechanism for the benefits of HDF remains unknown. The authors recommend targeting for the maximum possible convective volume, with at least 23 L per session.

“Why choose high volume post-dilution HDF?”

Evidenced based confirmation for the benefits of HDF is still missing. Nevertheless, the majority of data are in favour of HDF and seem to support HDF as the most important technology improvement of the last decade.