

This is a Fresenius Medical Care summary of:

Chronic Fluid Overload and Mortality in ESRD

Zoccali C et al. Italy, *J Am Soc Nephrol* 2017;28(8):2491-2497

Introduction

Achieving optimal fluid overload (FO) in the individual patient receiving haemodialysis is a clinical challenge. However, little is known about the relationship between chronic FO and mortality risk.

Objective

The study investigated the relationship between blood pressure (BP), FO and mortality risk of incident hemodialysis patients at baseline and after 1-year of chronic FO.

Design

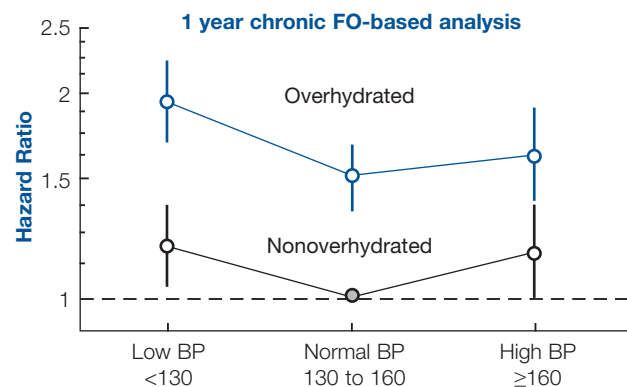
This was an international, observational cohort study in incident patients receiving haemodialysis in centres across the Fresenius Medical Care-NephroCare dialysis network. Patients were measured over time by whole-body bioimpedance spectroscopy using the body composition monitor (BCM) to assess fluid status. Overhydration was considered to be when relative FO (=FO/extracellular volume) was >15% in men and >13% in women. Measurements taken in the first three months of dialysis treatment were considered as baseline data. The mortality risk due to FO at baseline and over the first year of dialysis treatment was evaluated across three systolic BP categories (<130, 130-160, and >160 mmHg). Risk was assessed relative to a reference group (non-overhydrated, BP between 130 and 160 mmHg).

Results

A total of 39,566 incident patients were eligible for baseline FO analysis.

- At baseline, 46% of incident patients were found to be overhydrated

- 1-year chronic exposure to FO increased the risk of death across all BP ranges
- Best survival, at baseline and at 1-year, was found in non-overhydrated patients with normal BP.



Graph from Zoccali C et al. Italy, *J Am Soc Nephrol* 2017; 28(8):2491-2497

The above figure shows the mortality risk for overhydrated and non-overhydrated patients, categorised by pre-dialysis BP, after 1-year cumulative FO. Compared with the reference group, chronic FO leads to an increased risk of death over all BP-categories:

- 51% increased risk with normal BP
- 62% increased risk with high BP
- 94% increased risk in the most severe cases, i.e., patients with low BP.

Conclusion

Chronic exposure to FO is a strong risk factor for death across discrete systolic BP categories, exceeding the mortality risk of low and high pre-dialysis systolic BP.