

# How can we manage the adverse Intradialytic Hypotension?

Ana Lino<sup>1</sup>, Hélder Araujo<sup>1</sup>, Ana Bernardo<sup>1</sup>, Giovanni Sorbo<sup>1</sup>, João Fazendeiro Matos<sup>2</sup>, Maria Teresa Parisotto<sup>3</sup>

<sup>1</sup>Fresenius Medical Care, Dialysis Centre NephroCare, Covilhã – Portugal

<sup>2</sup>Fresenius Medical Care, NephroCare Portugal, Porto – Portugal

<sup>3</sup>Fresenius Medical Care, Nursing Care Coordination, Bad Homburg – Germany

## Introduction

Variations in the **intradialytic blood pressure** are a common and predictable occurrence in End Stage Renal Disease (ESRD) patients. These are caused by various factors, such as a decrease in blood volume due to ultrafiltration, lack of normal compensatory responses, underlying cardiac disease, and electrolyte changes. Intradialytic hypotension (IH) is the most frequent complication in haemodialysis patients and they are associated with increased patient mortality and cardiovascular events.

## Objectives

To implement a **systematic review** of IH in haemodialysis patients and apply a new approach based on the most recent scientific evidence.

## Methods

We prospectively evaluated the occurrence of IH in haemodialysis patients between February and December (2014). **IH was defined as an intradialytic decrease in systolic blood pressure (BP)**, by more than 30 mmHg and/or a level less than 90mmHg, that were not present at the beginning of treatment.

Eligible to enter the study were adult patients, undergoing haemodialysis (HD) treatments three times a week, for a minimum of six months. All treatments with available intradialytic BP were included in the data analysis.

In **January of 2015 we standardised our intervention**, to minimise the occurrence of IH:

- Education of patients to decrease inter-dialytic fluid gain (sodium restriction)
- Optimise dry weight by BCM<sup>®</sup> evaluation
- Increase the time and frequency of HD sessions
- Ultrafiltration profile
- Isothermic dialysis with the blood temperature monitor
- Avoid food intake during dialysis.

## Results

- 102 patients and 35,119 treatment sessions were evaluated
- Age: 72.37±13,5 vs 73.07 ±12.64
- Gender: 62% male and 38% female vs 59% and 41%
- Diabetic patients: 47.9% vs 47.2%
- Age Adjusted Charlson Comorbidity Index score: 8 ±2.78 vs 8±2.56
- Structural cardiac disease / peripheral artery dysfunction: 25 vs 27%
- Haemoglobin (Hg) levels 10-13gr/dl 81.2% vs 84.2%.

## Conclusion

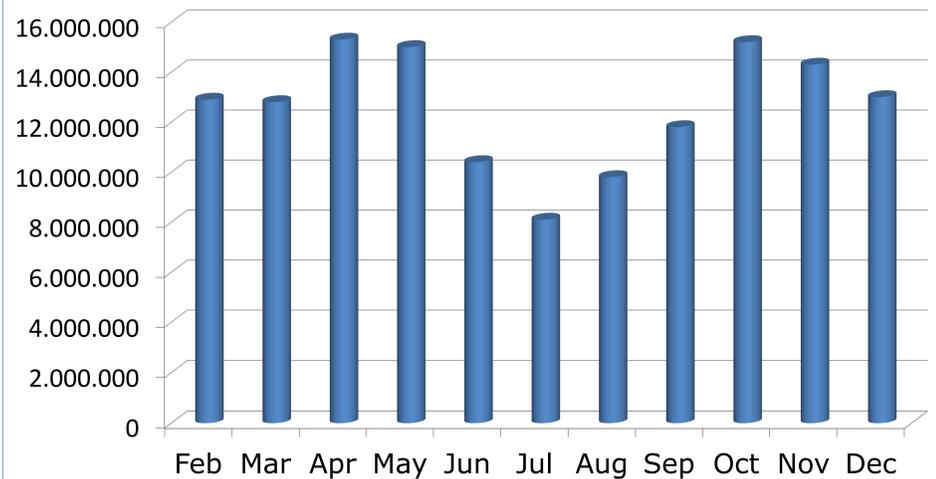
With the implementation of this process we were able to reduce the average number of **episodes of hypotension by 38%** between 2014 and 2015 (8428 episodes to 5225 episodes).

We can say that the correction of patient factors, modulation of HD prescription, and management of dry weight by BCM, **can reduce but not eliminate the occurrence of IH.**

## References

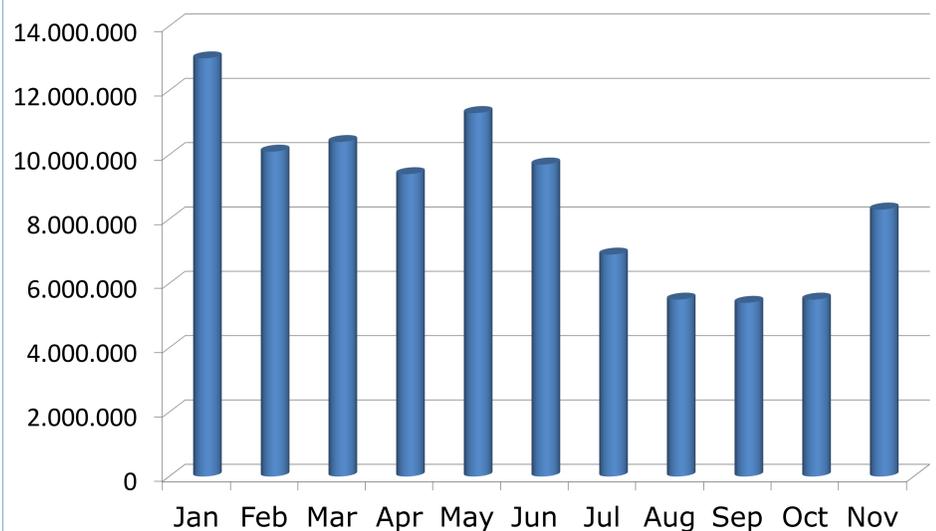
1. Damasiewicz, M. J et al, Intra-dialytic hypotension and blood volume and blood temperature monitoring in Nephrology 16 (2011) 13–18
2. Koremoto, M. Et al, Improvement of Intradialytic Hypotension in Diabetic Hemodialysis Patients Using Vitamin E-Bonded Polysulfone Membrane Dialyzers. Artificial Organs © 2012, International Center for Artificial Organs and Transplantation and Wiley Periodicals, Inc.
3. Chazot, C. Et al, The advantages and challenges of increasing the duration and frequency of maintenance dialysis sessions. Nature Clinical Practice, January 2009 vol. 5 no 1

**Hypotension / 100000 treatment (Feb-Dec 2014)**



**Graphic 1: Number of episodes of Hypotension per 1000 treatments on each month in 2014**

**Hypotension / 100000 treatment (Jan-Nov 2015)**



**Graphic 2: Number of episodes of Hypotension per 1000 treatments on each month in 2015**