

**MP381 APPLICATIONS OF BIOIMPEDANCE TECHNOLOGY IN DRY WEIGHT MANAGEMENT OF HAEMODIALYSIS PATIENTS**

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**Introduction and Aims:** Excess post dialysis fluid is a cause of interdialytic hypertension. Therefore it is important to achieve the correct dry weight, to avoid under- or over- hydration. A simple and practical bedside tool is needed to assess patient's extracellular water (ECW) so that it can guide the clinician in assessing dry weight. We performed a cross-sectional study to investigate the use of a bioimpedance analyzer (BIA) in the fluid management of haemodialysis patients and its effect on blood pressure.

**Methods:** Single frequency (50kHz) whole body BIA (Maltron BioScan 916 v3 analyser) was performed post dialysis in 175 stable chronic haemodialysis patients. Total body water (TBW), extracellular water (ECW) and intracellular water (ICW) were derived. BIA-determined dry weight was determined by comparison with BIA data from age- and sex-matched normal controls. Excess weight was defined as the percentage difference between clinically- and BIA- determined dry weight. Average mid-week post-dialysis systolic (SBP) and diastolic (DBP) blood pressure, mean arterial pressure (MAP) and number of antihypertensive medications were recorded.

**Results:** The following variables were obtained (mean  $\pm$  sd): age, 53.7  $\pm$  13.2 years; BMI, 23.5  $\pm$  4.7 kg/m<sup>2</sup>; SBP, 143.3  $\pm$  21.8 mmHg; DBP, 75.3  $\pm$  11.1 mmHg; MAP, 98.1  $\pm$  13.0 mmHg; TBW, 32.2  $\pm$  5.6L; ECW, 14.9  $\pm$  3.5L; ICW, 17.3  $\pm$  3.8L and ECW/ICW ratio, 0.9  $\pm$  0.3. Clinically-determined dry weight was significantly higher than BIA-determined dry weight (58.7  $\pm$  12.5kg vs 57.2  $\pm$  13.0kg,  $p < 0.0001$ ). SBP was significantly correlated with ECW ( $r = 0.335$ ,  $p < 0.0001$ ) and ECW/ICW ratio (0.248,  $p < 0.001$ ) but not with TBW and ICW. Patients receiving  $\geq 2$  antihypertensive medications had significantly higher ECW (16.3  $\pm$  3.7L vs 14.3  $\pm$  3.5L,  $p = 0.001$ ), ECW/ICW ratio (1.03  $\pm$  0.41 vs 0.83  $\pm$  0.27,  $p = 0.001$ ) and excess weight (4.0  $\pm$  4.1% vs 2.1  $\pm$  3.4%,  $p = 0.001$ ).

**Conclusions:** In this study we confirmed that higher ECW and excess weight as measured by the BIA were noted in patients with higher post dialysis blood pressure and antihypertensive requirement. BIA is simple and non-invasive, and is less operator-dependent and more objective in assessing fluid status in haemodialysis patients than clinical methods. Further studies on adjustment of dry weight guided by BIA and its effect on blood pressure are needed.