

Variability of bioimpedance measurements in hemodialysis patients

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Objective,

The Eureka-m guidelines on hypertension in dialysis patients propose the use of bioimpedance measurements for assessing the dry weight of dialysis patients(ref). The manufacturers of these equipments address the variability of measurements by considering an imprecision of 1 kg above and under the estimate of the over- or underhydration. We decided to control this point in a real life study in our dialysis unit

Methods,

Twenty patients have had their bioimpedance measured before four consecutive dialysis sessions using the Fresenius Body Composition Monitor (FMC Bad-Homburg, Germany). The measurement protocol proposed by the manufacturer was strictly followed for all measurements. We studied for each patient the standard deviation of the measurements of over- or underhydration and of estimated dry weight and correlated it with clinical items of our patients

Results,

The median standard deviation of the four measurements was 0,73kg (range : 0,22 – 1,41). The standard deviation was not correlated with patient age, sex, pre-dialysis body weight, presence or absence of diabetes, and use of loop-diuretics.

Conclusion

The Fresenius Body composition monitor allows an easy to perform bioimpedance measurement. The imprecision around the measured value seems in our study higher than that proposed by the manufacturer and remains too high to use solely the bioimpedance measurement to assess the dry weight of our patients.

Reference :

Pantelis A. Sarafidis¹, Alexandre Persu², Rajiv Agarwal³ et al. Hypertension in dialysis patients: a consensus document by the European Renal and Cardiovascular Medicine (EURECA-m) working group of the European Renal Association–European Dialysis and Transplant Association (ERA-EDTA) and the Hypertension and the Kidney working group of the European Society of Hypertension (ESH)*. *Nephrol Dial Transplant* (2017) 32: 620–640