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혈액투석환자에서 생체임피던스방법을 이용한 간편한 건체중예측방법 개발

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Simple Method of Predicting Dry Weight using Bioelectrical Impedance Analysis in Hemodialysis Patients

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Purpose : To develop a simple method of predicting dry weight (DW) using bioelectrical impedance analysis (BIA) in hemodialysis patients

Methods : Segmental multifrequency BIA was performed before and after HD in 73 patients. According to the ECF/TBW ratio of whole body, patients were divided into normohydration (NH) (≤0.35) and overhydration (OH) (>0.35). We previously developed a method of predicting DW, using the linear equation (y=ax+b) between the slope of ultrafiltration amount (UF) and the percentage changes in ECF/TBW of right leg (Nephrology 2009; 14:705-711). In this study, we modified this method by just using the slopes of UF removed versus the percentage changes in ECF/TBW of right leg during HD. In NH patients, using the current DW (cDW) of NH subjects as a reference, we compared the accuracies of DW1 (current devised method), DW2 (previously devised method) and DW3(the normovolemia/hypervolemia slope method). In OH patients, we compared the estimated DW by 3 methods.

Results : There were 28 NH and 45 OH patients. In NH patients, the mean cDW, DW1, DW2, and DW3 values were 60.1±12.4, 59.5±12.4, 60.5±12.4, and 59.2±12.7 kg, respectively. No significant differences existed between cDW and DW1, DW2, and DW3 (0.6±1.2, −0.3±0.6, and 1.0±0.9 kg, respectively). In OH patients, the mean cDW, DW1, DW2, and DW3 values were 57.8±10.2, 56.2±10.1, 56.5±9.3, and 55.3±9.4kg, respectively. No significant differences existed between cDW and DW1, DW2, and DW3 (1.6±1.2, 1.3±4.7, 2.5±1.7 kg, respectively). However, DW1 showed larger variation.

Conclusion : This method showed the similar accuracy with other and seems to be useful in dialysis center.

Key Words : 수분, 생체임피던스, 혈액투석
Body fluid, Bioimpedance, Hemodialysis