

Combined bioelectrical impedance and on-line blood volume monitoring on evaluating the dry weight in dialysis patients

ZHANG Jun-xia, XU Jin-sheng, CUI Li-wen, ZHANG Hui-ran, HE lei

Department of Nephrology, the Forth Hospital of Hebei Medical University, Shijiazhuang 050011, China

Received 2010-5-25 **Revised Online Accepted**

Abstract Objective To estimate the dry weight in hemodialysis patients by the combination of bioelectrical impedance analysis and on-line blood volume monitoring. Methods We observed 40 hemodialysis patients who reached the dry body weight by clinical evaluation method, and divided them into dry weight reached group (8 cases) and dry weight not reached group (32 cases) based on the results of bioelectrical impedance analysis. We also observed 240 healthy volunteers as the control group. TBW% (percent of total body water), ECW/TBW% (ratio of extracellular water to total body water) and ICW/TBW% (ratio of intracellular water to total body water) were measured by Maltron BioScan 916 instrument. Changes of blood volume ($\Delta BV\%$) in patients in dry weight not reached group at first and then moved to dry weight reached group were evaluated by using Fresenius 4008s BVM system. Results TBW%, ECW/TBW% and ICW/TBW% were statistically different between the dry weight not reached group and control group ($P < 0.05$), but became statistically indifferent between the patients moved from dry weight not reached group to dry weight reached group and control group ($P > 0.05$). $\Delta BV\%$ had no statistical difference ($P > 0.05$) in the patients before and after moved from dry weight not reached group to dry weight reached group compared respectively to the patients in dry weight reached group. Conclusion Bioelectrical impedance analysis is more accurate than clinical assessment in evaluating the dry weight. $\Delta BV\%$ estimation using bioelectrical impedance analysis combined with on-line blood volume monitoring is a safe and accurate method for dry weight assessment in dialysis patients.

Key words [Bioelectrical impedance](#) [On-line blood volume monitoring](#) [Total body water](#) [Hemodialysis](#)

DOI: 10.3969/j.issn.1671-4091.2010..00

Corresponding author

Authors ZHANG Jun-xia; XU Jin-sheng; CUI Li-wen;
ZHANG Hui-ran; HE lei