KSN 2016 Abstract Submission

Volume, Acid-Base & Electrolyte

KSN2016ABS-1441

Volume status measured by bioimpedance spectroscopy and the clinical characteristics of patients with idiopathic edema

Youngrok Ham* [1], Won Jung Choi, Hae Ri Kim, Hong Jae Jeon, Dae Eun Choi, Ki Ryang Na, Kang Wook Lee

[1]Renal Division, Department of Internal Medicine, Chungnam National University Hospital, Daejeon, Korea, Republic Of

Background: Idiopathic edema (IE) is a common clinical syndrome, defined as irregular intermittent swelling in the absence of any apparent cause of edema. Designing treatment plans for IE is problematic because of the difficulty in assessing volume status. We aimed to evaluate volume status, measured by bioimpedance spectroscopy (BIS), and investigated clinical parameters associated with volume overload in IE patients.

Methods: IE Patients were defined as those with symptomatic edema and without abnormal renal function or any other apparent cause of edema. Total 124 patients were included. Overhydration (OH) and extracellular water (ECW) were calculated by BIS. Relative hydration status (ΔHS) was defined as OH/ECW. Patients were classified into two groups: an overhydrated (OG, $\Delta HS \geq 7\%$) and a non-overhydrated group (NOG, $\Delta HS < 7\%$). A simple and multiple logistic regression analysis was used to assess the influence of several variables on the presence of an overhydration.

Results: Of the 124 patients, 37 (29.8%) were in the OG. The proportion of males in OG was higher than in the NOG ($p = 0.020$). Patients in the OG showed more frequent pretibial pitting edema (PTPE) ($p < 0.001$), and had lower hemoglobin levels ($p = 0.008$) and lower serum albumin levels ($p < 0.001$). The multivariate analysis showed that the presence of PTPE (OR: 10.62, CI: 1.98-57.1), low serum albumin level (OR: 0.01, CI: 0.00-0.25), and lower FTI (OR: 0.78, CI: 0.63-0.97) were independent risk factors for the presence of volume overload.

Conclusion: Actual volume overload was only observed in one-third of our IE patients. The presence of PTPE, lower FTI, and lower serum albumin level were independently predicted the presence of volume overload in IE patients. BIS measurements may help to assess volume status and body composition in IE patients.

Keywords: bioimpedance, Edema, volume status