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복막투석 환자에서 부종의 정도에 따른 생제전기저항 분석법과 방사선 흡수계측기의 비교

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박정민, 정요한, 김산옥, 황문주, 강석휘, 조규향, 박종원, 윤 경우, 도준영

Comparison of Bioimpedance Analysis and Dual-energy X-ray Absorptiometry in Peritoneal Dialysis Patients According to Edema

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Background: The change in difference between bioimpedance analysis (BIA) and dual-energy X-ray absorptiometry (DEXA) according to edema is an important issue for peritoneal dialysis (PD) patients.
Methods: We reviewed the medical records to identify all adults who received PD. Patients had undergone two body composition measurements. The aim of this study was to evaluate the change in difference between BIA and DEXA according to edema.
Results: 1109 cases were measured simultaneously by BIA and DEXA. Measurements were divided into four quartiles based on edema index. There were significant correlations and intraclass correlations between the two methods for lean mass (LM), fat mass (FM) and bone mineral content. Simple linear regression analyses using measurements of DEXA for prediction of body compositions by BIA showed that non-standardized-βs of total LM decreased as the grade of edema index increased (from 1.008 to 0.949). Those of total FM were increased as the grade of edema index increased (from 1.034 to 1.162). Bias for total LM changed to negative and negative bias increased as the grade of edema index increased (from 0.406 kg to −2.276 kg). There was a positive bias for total FM in first quartile and increased as the grade of edema index increased (from 0.594 kg to 2.863 kg).
Conclusion: The present study demonstrates that BIA can measure normal hydrated LM in CAPD patients with edema. However, FM is overestimated in PD patients with edema. The difference between the two measurements increases as the grade of edema increases.

Key Words: 신체전기저항분석법, 방사선흡수계측기, 부종
Bioimpedance analysis, Dual-energy X-ray absorptiometry, Edema