혈액투석 시작 후 체액 조성의 변화: 다주파수 생체전기 임피던스를 이용한 분석

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Serial Change of Body Composition after Hemodialysis Start Assessed by Multifrequency Bioelectrical Impedance Analysis

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Introductions and Aims: Hypertension is seen in the majority of maintenance HD patients. The pathophysiology of hypertension in HD patients is believed to be multifactorial, but the majority of cases are considered to be volume dependent. However, in HD patients the relationship between blood pressure (BP) and extracellular water (ECW) is not linear, but complex, because of the "lag phenomenon" which is an observation that adequate BP control does not immediately occur after ultrafiltration to the "dry weight". We investigated the serial change of body composition including total body water (TBW), ECW, and intracellular water (ICW) after maintenance hemodialysis (HD) start using multi-frequency bioelectrical impedance analysis (MFBIA) to elucidate the mechanism of the lag phenomenon.

Methods: We enrolled 8 patients (male/female 4/4, age 60.4, 11.2 years, DM 3, hypertension 4, GN 1) who started maintenance HD within 3 weeks. MFBIA was performed monthly to the 6th month. MFBIA was performed after each HD session. Predialysis BP and postdialsys body weight were measured.

Results: Predialysis mean arterial pressure (MAP), postdialsys body weight, TBW, ECW, ICW, ECW/TBW ratio, ECW/ICW ratio, body fat mass, fat free mass, and the number of antihypertensive drugs was not significantly changed for 6 months.

Conclusion: We could not observe the lag phenomenon in our maintenance HD patients. Body water composition was not significantly changed after HD start for the 6 months.

Key Words: 혈액투석, 체액조성, 생체전기임피던스
Hemodialysis, Body composition, Bioimpedance

month	0	1	2	3	4	5	6
PreD MAP	101.4±16.4	102.2±11.3	105.1±12.9	95.7±10.6	98.0±8.8	99.3±12.9	98.4±14.0
PostD body weight (kg)	60.8±7.4	60.3±7.3	60.1±7.7	59.8±7.5	60.8±7.0	60.9±7.2	61.0±7.0
TBW (L)	32.2±6.0	32.9±5.5	32.8±5.3	31.7±5.5	32.7±6.1	32.0±5.8	32.0±7.3
ECW (L)	12.9±2.2	12.9±2.1	12.8±2.0	12.2±2.0	12.7±2.3	12.6±2.4	12.1±2.4
ICW (L)	19.3±4.0	20.0±3.5	20.0±3.4	19.4±3.5	20.0±3.9	19.5±3.4	19.9±5.1
ECW/TBW	0.402±0.02	0.392±0.01	0.390±0.01	0.387±0.01	0.388±0.01	0.392±0.03	0.383±0.03
ECW/ICW	0.675±0.07	0.645±0.03	0.639±0.04	0.632±0.03	0.634±0.03	0.643±0.03	0.624±0.07
BFM (kg)	17.4±6.7	15.7±6.6	15.6±6.1	16.8±6.7	16.3±6.4	17.5±6.2	15.9±9.5
FFM (kg)	43.5±8.2	44.6±7.4	44.4±7.3	43.0±7.4	44.3±8.3	43.4±7.7	43.6±10.2
drugs	2.5±1.8	2.8±2.1	2.6±2.1	2.9±2.2	2.9±2.2	3.0±2.3	2.9±2.4