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유지 투석환자에서 인지장애와 S100B 단백의 관련성

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The Relation between S100B and Cognitive Impairment in Maintenance Hemodialysis Patients

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Background: Although the prevalence of cognitive impairment increases in hemodialysis patients, the etiology of its development remains unclear. S100B is a calcium binding protein that is derived from glial cells. Increase of serum S100B reflects the glial cells injury. Neuron-specific enolase (NSE) is a specific serum marker for neuronal damage. We planned this study to evaluate that which cells injury would cause cognitive impairment in hemodialysis patients.
Methods: Thirty five patients undergoing maintenance hemodialysis were participated in cross-sectional study. MMSE-K (Mini Mental State Examination Korea) was used to evaluate cognitive impairment. Serum S100B and NSE levels were measured using by peripheral blood obtained prior to mid-week hemodialysis session.
Results: The mean age of patients was 62±12.7 years (range: 22-77 years) and 25 (78%) were males. The mean dialysis duration was 22.0±19.7 month (range: 6-88 month). The mean level of S100B and NSE were 34.3±14.9 pg/mL and 15.1±6.3 ng/mL, respectively. The mean MMSE-K score was 26.0±3.1. The overall prevalence of cognitive impairment (MMSE-K score <23) was 20% (7 patients). The level of S100B and NSE showed no differences between cognitive impairment group (MMSE-K score <23) and normal group (MMSE-K score > or =24). However, the serum S100B levels correlated with dialysis duration. The long duration of dialysis group (>24 months) revealed elevated serum S100B (41±16.87 pg/mL vs 30.8±8.85 pg/mL, p=0.04) compared with short duration of dialysis group (≤24 months).
Conclusion: The levels of S100B and NSE did not have an association with cognitive impairment in maintenance hemodialysis patients. However, the duration of hemodialysis and the level of S100B showed positive correlations. More research will be needed to explain between S100B and the duration of dialysis.

Key Words: S100B, 인지장애, 혈액투석
S100B, Cognitive impairment, Hemodialysis