

복막투석 복막염에서 프로칼시토닌의 유용성 연구

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The Study of Usefulness of Procalcitonin as a Biomarker for Peritoneal Dialysis Peritonitis

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Purpose: Peritonitis is a typical complication in peritoneal dialysis (PD). The clinical progress varies from subclinical infection to severe sepsis, and often shows recurrent episodes. However, the biomarker other than existing markers such as erythrocyte sedimentation rate, C-reactive protein has not been reported to be useful in the diagnosis and prediction of prognosis. Procalcitonin is a peptide hormone which has been used as a biomarker for the diagnosis of bacterial infection. We aimed to investigate the usefulness of procalcitonin in the patients with PD peritonitis.

Methods: This study included 12 patients with PD peritonitis and 7 patients without PD peritonitis. We investigated the serum and PD effluent level of procalcitonin at the time of initial visit and discharge.

Results: The mean dialysis vintage of PD peritonitis patients was 1832 days, and the mean incidence of total peritonitis during the follow up periods of 291 days was 1.3 times. The mean interval from symptom onset to visit was 13.5 hours, the duration of intraperitoneal antibiotic treatment was 12.5 days. The median level of initial serum procalcitonin was elevated to 232.0 (min, 0.1, max, 8111.3) pg/mL (reference range, <50 pg/mL), while PD effluent procalcitonin level showed no significant differences with the level of the PD patients without peritonitis (27.0 vs. 19.1 pg/mL, $p>0.05$). The serum procalcitonin decreased to 175.5 (min, 0.1, max, 1537.9) pg/mL but not significantly ($p>0.05$), while the PD effluent procalcitonin showed the decreased level of 17.9 pg/mL significantly ($p=0.02$) at the time of discharge with clinical improvement. The initial ratio of serum procalcitonin to PD effluent was 0.1, and the follow up ratio was also 0.1, suggesting procalcitonin was not produced by peritoneal membrane cells locally. Pearson's correlation analysis showed that serum and PD effluent procalcitonin did not have the relationship with existing inflammatory markers such as erythrocyte sedimentation rate, C-reactive protein and white blood cell count. Lastly, procalcitonin could not predict the recurrence and mortality of peritonitis.

Conclusion: Collectively, this study demonstrates that procalcitonin is not useful biomarker in PD peritonitis compared with other existing markers.

Key Words: 복막투석, 복막염, 프로칼시토닌

Peritoneal dialysis, Peritonitis, Procalcitonin