

혈액투석 환자에서 외상 발생 현황과 예후 및 위험 인자에 대한 연구

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Incidence, Prognosis and Risk Factors for Traumatic Injury in Chronic Hemodialysis Patients

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Purpose: As the number of hemodialysis (HD) patients with multiple comorbidities continues to increase, more patients are at risk of traumatic injury during peridialytic period. However the incidence, prognosis and risk factors for traumatic injury in chronic HD patients have not been studied well.

Method: 222 chronic HD patients (age 61.8±12.4 years, male 52.3%, diabetes 64.9%) were studied for a mean duration of 208±92 weeks starting from January 2007. Traumatic injury events requiring hospitalization were identified with review of medical records. Potential risk factors for traumatic injury were collected monthly until study end (July 2012), traumatic injury event, death, transplantation or transfer to another HD center.

Results: During the whole follow up periods, 49 traumatic injuries (38 falls, 8 traffic accidents, 3 falling object injuries) occurred (traumatic injury incidence: 5.5/100 person-year). Fifteen (30.6%) traumatic injury events occurred on Monday. Thirty-one patients (63.3%) were complicated by fracture and 9 patients (18.4%) were complicated by intracranial hemorrhage. The overall mortality rate during the follow up period was 34.7% (17/49) in the patients with traumatic injury and 20.8% (36/173) in the patients without traumatic injury. Kaplan-Meier survival curve (fig. 1) showed significant difference in the cumulative mortality rate between two groups (log-rank $p < 0.05$). In multivariate Cox analysis, independent risk factors for traumatic injury were pulse pressure (HR 1.67, 95% CI 1.21-2.30 for 10 mmHg increase; $p < 0.002$), intra-dialytic hypotension (HR 1.60, 95% CI 1.35-1.90 for every one event per 12 HD sessions; $p < 0.001$), low serum albumin (HR 0.34, 95% CI 0.13-0.90 for every 1 g/dL increase; $p < 0.05$) and increased high-sensitivity CRP level (HR 1.12, 95% CI 1.08-1.32 for every 10 mg/dL increase; $p < 0.001$).

Conclusion: Traumatic injury is common in chronic HD patients and associated with high complication rate and mortality. Intra-dialytic hypotension with wide pulse pressure, malnutrition, inflammation and Monday seem to be major risk factors for the traumatic injury. The high risk population delineated by our study appears as a priority target for intervention support (including avoidance of intra-dialytic hypotension, nutritional support, control of inflammation and greater attention to weekend care) to reduce the incidence and complications of traumatic injury in chronic HD patients.

Key Words: 혈액투석, 외상, 사망률
Hemodialysis, Traumatic injury, Mortality

