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혈액투석 환자에서 뇌출혈 발생 후 항응고제로서 Nafamostat mesilate 사용이 환자 예후에 미치는 영향

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Superior Outcome of Nafamostat Mesilate as an anticoagualnt in Patients undergoing Maintenance Hemodialysis with Intracerebral Hemorrhage

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Introduction and aims : The incidence of cerebrovascular disease in patients with chronic hemodialysis is higher than other complications. In addition, the mortality rate of patients with chronic hemodialysis who suffer intracerebral hemorrhage is two times higher than that in non- hemodialysis patients. Several factors are associated with hematoma enlargement and prognosis in patients undergoing hemodialysis. Bleeding tendency is more likely to increase in size after symptom onset, the outcome is especially poor in patients with hemodialysis. Recently, Nafamostat is a synthetic serine protease inhibitor, suggested that is safer than anticoagulation with regional heparin.

Methods : We studied retrospective examinatioin of 17 hemodialysis patient with intracerebral heomorrhage between nafamostat and heparin. Anticoagulation was done by heparin (1000 IU bolus and 200 IU per hour, maximally) and nafamostat (35 mg per hour). Comparison of prognosis associated with anticoagulation was done by 2 weeks computed tomography. Groups were divided by resolving (completely or delayed) and expansion (progression or death) groups. We analyses parameters using of independent T- test between resolving group and expansion group, Chi- square test between anticoagulation method and 2 weeks CT outcome.

Results : Eight of 17 patients were anticoagulated by nafamastat and others were done by heparin. There was no statistically significant differences in clinical characteristics and laboratory data between nafomastat and heparin groups. Both groups showed no statistically significant differences in age, sex, PT, PTT, Platelet, Glasgow coma scale on admission, hemodialysis skip period from symptom onset, duration of hemodialysis, admission time from the onset of symptom, blood pressure on admission. CT on the 2 weeks day of admission revealed hematoma enlargement in one of 8 patients in nafamostat group and six of 9 patients in heparin group. The resolving rate of hematoma was statistically significant superior in nafamostat mesilate group than heparin group (resolving rate : 87.5% vs 33.3%, p=0.024).

Conclusions : We suggest that nafamastat mesilate improve the outcome of intracerebral hemorrhage patients, can be used safely as an anticoagulant in hemodialysis patients with intracerebral hemorrhage.

Key Words : 혈액투석, 뇌출혈, 항응고제
Hemodialysis, Intracerebral hemorrhage, Anticoagulant