

저나트륨혈증이 간이식 후 예후 및 합병증에 미치는 영향

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Effect of Hyponatremia on Outcomes after Liver Transplantation

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Aims: Hyponatremia is known as a risk factor of reduced survival in patients with liver cirrhosis or end stage liver disease. But, the result on the outcomes after orthotopic liver transplantation (OLT) according to the degree of hyponatremia is controversial. We investigated the effect of hyponatremia on mortality and morbidity after OLT.

Methods: We conducted a retrospective analysis of 517 adult patients who underwent OLT at Seoul National University Hospital between 1 January 2005 and 31 December 2010. Laboratory data including serum sodium were collected from the nearest test before OLT and patients were divided into three groups according to serum sodium values; normal (more than 135 mEq/L), mild hyponatremia (125–134 mEq/L), and severe hyponatremia (<125 mEq/L). In-hospital mortality, duration of admission on ICU and ward, delirium, neurologic complications, acute kidney injury (AKI) and infections were analyzed by ANOVA, Chi-square and logistic regression method.

Results: Out of 517 patients, 206 (39.8%) had normal serum sodium at OLT, mild hyponatremia was present in 235 (45.5%) and severe hyponatremia in 76 (14.7%). Serum sodium had no impact on in-hospital mortality (odds ratio=1.50, p=0.65). Compared with patients of normal serum sodium, patients with severe hyponatremia did not differ in the duration (days) of admission either on ICU (9.3 ± 8.3 vs. 8.0 ± 10.4 , p=0.38) or general ward (28.7 ± 16.7 vs. 25.9 ± 32.0 , p=0.51). Patients with severe hyponatremia had higher rates of delirium (55.3%/29.75%, odds ratio=2.18, p=0.014), neurologic complications (23.7%/7.3%, odds ratio=2.58, p=0.029), AKI (56.6%/35.4%, odds ratio=1.88 p=0.043). But, the rates of infections did not differ significantly (21.1%/11.7%, p=0.14).

Conclusion: Hyponatremia immediately before OLT does not affect on the outcomes of in-hospital mortality or the duration of admission, but is associated with various complications including delirium, neurologic complications and AKI.

Key Words: 간이식, 저나트륨혈증, 급성신부전

Liver transplantation, Hyponatremia, Acute kidney injury