Topic: Preventive Medicine**Omega-6 Polyunsaturated Fatty Acid Levels and Delirium in Patients With Acute Cardiovascular Disease**

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Background

Delirium frequently occurs in patients admitted to the intensive care unit and is associated with mortality and morbidity. Although several studies reported associations between polyunsaturated fatty acids (PUFAs) and cognitive disorders, the association between PUFAs and delirium in patients with acute cardiovascular disease remains unknown.

Methods and Results

We enrolled 589 consecutive patients (mean age: 70 ± 14 years) admitted to the coronary care unit of Juntendo University Hospital from January 2015 to December 2016. Fasting serum PUFA levels were measured within 24 hours of admission. Delirium was defined

as patients with a delirium score ≥ 4 using the Intensive Care Delirium Screening Checklist. Delirium was present in 54 patients. The levels of dihomo-gamma-linolenic acid (DGLA) was significantly lower in patients with delirium than in those without delirium (DGLA: 23.1 ± 10.3 versus 31.4 ± 12.6 $\mu\text{g/ml}$, $p < 0.0001$), whereas AA and omega-3 PUFAs did not differ between the two groups. In addition, DGLA and AA, but not omega-3 PUFA, were negatively associated with the delirium score (DGLA: $p < 0.0001$; AA: $p = 0.002$).

Conclusion

Low omega-6 PUFA levels on admission were significantly associated with delirium in the coronary care unit, indicating that low omega-6 PUFA levels may identify patients at high risk of developing delirium. ■