A182 - The relationship between serum zinc level and sepsis-induced coagulopathy

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Introduction:
Recently, it was clarified that zinc plays a pivotal role of inflammation and its deficiency resulted in deterioration of severe organ dysfunction including coagulopathy in patients with sepsis. The purpose of present study is to clarify the relationship between serum zinc level and organ dysfunction especially sepsis-induced coagulopathy.

Methods:
The present study was conducted a single-center retrospective observational study from June 2016 to September 2017. Blood samples were collected on ICU admission.

Results:
128 patients were enrolled. Of the 108 patients, 100 patients were sepsis and 8 patients were non-sepsis. The serum zinc levels were significantly lower in the sepsis group than in the non-sepsis group (33.5±19.2 vs 66.5±14.2μg/dL, p<0.01). Next, we divided sepsis group into two groups using SOFA score (SOFA≥8 and SOFA<8). Zinc level was significantly lower in group of SOFA>8 group than in group of SOFA <8. However, there were no significant between two groups such as calcium, phosphorus and magnesium. We analyzed the relationships between zinc and each factor of SOFA score. There was the most significant correlation between zinc level and Coagulation (r=-0.49, p<0.001). We performed ROC analysis to predict of DIC. The area under the curve of serum zinc level was 0.700, and cut off value of zinc was 25μg/dL (sensitivity 0.629 and specificity 0.783, p<0.001). Using this zinc cutoff value, the sepsis group was divided into two groups. The 28-day mortality rate of zinc<25μg/dL group was significantly higher than that of zinc>25 μg/dL group.

Conclusion:
Our result suspected that zinc levels are closely related to sepsis induced coagulopathy.