

Category :**Sepsis: biomarkers**

A27 - Combination of 2b4 and cd28 on t lymphocytes predict poor prognosis in sepsis patients: a prospective observational study

Q Liu¹ ; J Xie² ; Y Yang²

¹zhongda hospital affiliated to southeast university, critical care medicine, nanjing, China, ²zhongda hospital affiliated to southeast university, Nanjing, China

Introduction:

2B4 and CD28 are important co-signal molecules that regulate the T cell function. Regulating 2B4 and CD28 pathway was demonstrated to improve sepsis mortality in animal studies. We aim to determine the effect of them on mortality in patients with sepsis.

Methods:

This was a single center, prospective observational study. Patients with sepsis who admitted to the ICU in Zhongda Hospital affiliated to Southeast University from April 2019 to December 2020 were included in this study. 2B4 and CD28 expression on CD4⁺ and CD8⁺ T cells were test on day 1, 3 and 7 after sepsis diagnosis. The association between 2B4 and CD28 expression and mortality were analyzed.

Results:

A total of 152 septic patients[age, M(IQR) 64 (50-71) year; 105 (69.1%) male] were included in this study. At day 30 after erollement, 39 (25.7%) patient died. Compared with the survivors, the expression of 2B4 on CD4⁺ T cells was significantly higher [9.50 % (4.33-15.44) vs. 6.25% (2.87-12.13) P=0.019] while the expression of CD28 on CD4⁺ T cells was significantly lower [92.67%(84.74-96.11) vs. 95.26% (89.10-97.89), P= 0.031] in the non-survivors. Similarly, the expression of 2B4 on CD8⁺ T cells in the non-survivors was significantly higher [79.17 % (58.56-87.41) vs. 61.68 % (43.50-82.07), P=0.001] in survivors. However, there was no difference of expression of CD28 on CD8⁺ T cells between survivors and non-survivors (P=0.543). Multivariate logistic regression analysis revealed that APACHE II score, 2B4 expression on CD8⁺ T cells and BMI were associated with 30-day mortality in patients with sepsis. Kaplan-Meier survival analysis revealed that higher expression of 2B4 on CD4⁺T cells and CD8⁺T cells and lower expression of CD28 on CD4⁺ T cells were associated with higher mortality.

Conclusion:

2B4 and CD28 expression on T cells were associated with 30-day mortality in ICU patients with sepsis.