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Acute Coronary Syndromes

AGE-INAPPROPRIATE T CELL DISTURBANCE IN PATIENTS WITH ACUTE CORONARY SYNDROME

ACC Moderated Poster Contributions
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Session Title: Acute Coronary Syndromes: Biology
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Background: Acute coronary syndrome (ACS), including unstable angina and actue myocardiac infarction, are complications of atherosclerotic vascular disease which are caused by the sudden rupture of atheroma. The stability of plaque is effected by many factors, such as inflammation and immune function. Recently, atherosclerosis is considered to be associated with autoimmune, which may lead to premature immunosenescence and cause some systemic autoimmune diseases, such as rheumatoid arthritis. We undertook this research to determine whether patients with ACS demonstrate immunosenescence and chronic inflammation.

Methods: The percentage of four CD4+ T lymphocyte subses (the naïve T cells, regulatory T cells, memory T cells and effector T cells), the frequency of T cell receptor excision circles (TRECs), and the serum C-reactive protein (CRP) and Helicobactor pylori (HP) IgG are measured in the control group, chest pain group and patients with ACS, as estimates of the immune function and chronic inflammatory status.

Results: Both the chest pain group and patients with ACS show a significant decrease of CD4+CD45RA+CD62L+ naive T cells and a compensatory increase of CD4+CD45RO+ memery T cells, compared with the control group ($P<0.05$); while there is no significant difference between chest pain group and ACS group. The CD4+CD28- effector T cells are also significantly increased in chest pain and ACS group, compared with the control ($P<0.05$); and the frequency of CD4+CD28- T cells in patients with ACS slightly decrease compared with that of people in chest pain group ($P<0.05$). The CD4+CD25+CD62L+ regulatory T cells in the chest pain group and ACS group are decreased, contrast to that of control group ($P<0.05$), the frequencies betwwen chest pain group and ACS group show no significant difference. The frequencies of TRECs among three groups are similar. The serum CRP in chest pain group and ACS group is much higher than that of control ($P<0.05$), and the serum HP IgG in patients with ACS is higher than that of control ($P<0.05$).

Conclusion: Our findings suggest that age-inappropriate CD4+ T cell disturbance may contribute to the ACS occurrence, and chronic inflamation also plays a critial role in this process.