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# PPAR $\alpha$ EXPRESSION IN ACS LYMPHOCYTES AND ITS CORRELATION WITH TNF $\alpha$ AND HS-CRP IN SERUM

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**Objectives** We investigate the level of peroxisome proliferator-activated receptors- $\alpha$  (PPAR $\alpha$ ) in peripheral blood lymphocytes from patients with acute coronary syndrome (ACS) and analyse the correlation among levels of PPAR $\alpha$ , serum matrix tumour necrosis factor  $\alpha$  (TNF $\alpha$ ) and high sensitivity C-reactive protein (hs-CRP). The study is to confirm whether PPAR $\alpha$  is involved in the development process of acute cardiovascular disease or not.

**Methods** Forty seven cases of ACS, between March 2009 and April 2010, were selected. ACS group were combined with 25 cases of unstable angina pectoris (UAP group) and 22 cases of acute myocardial infarction (AMI group). Twenty three healthy people as control group. Lymphocytes PPAR $\alpha$ ; Serum TNF $\alpha$  and hs-CRP in all subjects were measured by ELISA.

**Results** (1) Expression of PPAR  $\alpha$  in peripheral lymphocytes of ACS patients than that of control group,  $22.51 \pm 6.78$  versus  $45.44 \pm 5.20$ ,  $p < 0.01$ ; (2) For all ACS patients, PPAR $\alpha$  expression of AMI group was significantly less than that of UAP group,  $16.27 \pm 3.50$  vs  $28.00 \pm 3.24$ ,  $p < 0.01$ ; (3) The expression of TNF $\alpha$  and hs-CRP in ACS was significantly higher,  $31.36 \pm 8.83$  vs  $11.67 \pm 2.61$  ng/l,  $p < 0.01$ ,  $12.27 \pm 5.90$  vs  $1.67 \pm 0.59$  mg/l,  $p < 0.01$ ; (4) AMI patients with acute coronary syndrome subgroups of serum TNF $\alpha$  and the expression of hs-CRP compared with UAP were significantly lower,  $39.09 \pm 6.28$  vs  $24.56 \pm 3.46$  ng/l,  $p < 0.01$ ,  $17.66 \pm 4.17$  vs  $7.53 \pm 1.22$  mg/l,  $p < 0.01$ ; (5) PPAR $\alpha$  was inversely associated with TNF $\alpha$  ( $r = -0.794$ ,  $p < 0.01$ ) and hs-CRP ( $r = -0.797$ ,  $p < 0.01$ ).

**Conclusion** There exists expression of PPAR $\alpha$  in the peripheral blood lymphocytes both ACS patients and healthy people, but it is lower about the PPAR $\alpha$  expression in ACS patients than that in healthy people; With the aggravation of acute coronary syndrome expression of PPAR $\alpha$  further decline. The expression of TNF $\alpha$  and hs-CRP in ACS patients was significantly increase. Compared with PPAR $\alpha$  the expression of TNF $\alpha$  and hs-CRP, was negatively correlated. PPAR $\alpha$  may be involved in the pathogenesis of acute coronary syndrome and may be related to atherosclerotic plaque instability related.