

[gw22-e0074]

THE INFLUENCE OF SYSTEMIC INFLAMMATION AND AUTOIMMUNITY TO SERUM LIPID IN PATIENTS WITH RHEUMATOID ARTHRITIS

Chao Xue *People's Hospital of Peking University, Beijing, China*

10.1136/heartjnl-2011-300867.389

Objective The purpose of this study was to determine whether inflammation state and autoimmune antibodies are associated with increased lipid in those with rheumatoid arthritis (RA).

Methods A total of 402 RA patients were admitted into our hospital during January 2008 to March 2009 and 225 RA patients who met the inclusion criteria were selected to perform a full lipid profile including total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C) and triglyceride (TG). Atherogenic index of plasma (AIP) was calculate by the formula Log (TG/HDL-C) . Erythrocyte sedimentation rate (ESR), C reactive protein (CRP), rheumatoid factor (RF), anti-cyclic citrullinated peptide (anti-CCP), anti-keratin antibody (AKA), anti-perinuclear factor autoantibody (APF), immunoglobulins (Ig), complement (C) as well as uric acid (UA) and disease activity score 28 (DAS28) were also evaluated.

Results (1) In all 225 patients, there were 12.9%, 10.2% and 14.2% patients with elevated TC, LDL-C and TC respectively, patients with reduced HDL-C accounted for 43.6%. That is to say, RA was associated with an abnormal lipoprotein pattern, principally low levels of HDL-C. ESR ($(30-99)$ mm/h vs $(20-71)$ mm/h, $p=0.007$) and CRP ($(6.9-49.0)$ mg/l vs $(5.2-33.8)$ mg/l, $p=0.011$) were higher in patients with abnormal lipid, but age, sex, disease duration, smoking state or history were similar in normal and abnormal lipid groups. (2) Simple correlation analysis showed a statistically significant relationship exists between reduced HDL-C and elevated ESR ($r=-0.387$, $p<0.001$) and CRP ($r=-0.384$, $p<0.001$). Elevated ESR and CRP was also associated with raised LDL-C ($r=0.218$, $p=0.01$ and $r=0.336$, $p<0.001$). AIP correlate with ESR positively ($r=0.199$, $p=0.003$) but seemed have no significant association with CRP. Autoimmune antibodies as anti-CCP had a significant positive association with LDL-C ($r=0.139$, $p=0.042$). However, there were no association was found between RF, AKA, APF and lipid protein. C3 was positively associated with raised TC, LDL-C, TC and AIP ($r=0.209$, $r=0.219$, $r=0.145$, $r=0.143$, all $p<0.05$), C4 also had a significant positive association with TC, LDL-C, TG and AIP ($r=0.169$, $r=0.145$, $r=0.140$, $r=0.155$, all $p<0.05$). (3) Multiple stepwise regression analysis showed that female, systolic blood pressure, C3 were positively while IgG was negatively correlated with TC ($R^2=0.173$). HDL-C was negative correlated with ESR, CRP and uric acid ($R^2=0.202$). LDL-C was positively correlated with CRP and anti-CCP ($R^2=0.160$), TG was positively correlated with uric acid ($R^2=0.086$).

Conclusion This study showed that rheumatoid arthritis is associated with an adverse lipid profile. The inflammation markers and autoimmune antibodies influence serum lipid level in RA patients and enhance the atherogenic effect of the lipid.