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Advantages of mCRP over pCRP in diagnosis of autoimmune diseases

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Native C-reactive protein (nCRP) which is the pentameric form of CRP in the blood is commonly used to detect the activation of inflammatory response system (IRS) in clinical setting as well as research related to inflammation and psychoneuroimmunology. There are documents reporting the pro-inflammatory nature of monomeric form of CRP (mCRP). However, the diagnostic role of mCRP in the blood was not clear. Therefore, we have developed mCRP ELISA test and investigate the diagnostic role of mCRP in comparison with high sensitive ELISA in patients with different autoimmune diseases (rheumatoid arthritis n=75, Hashimoto's thyroiditis n=20, and systemic lupus erythematosus (SLE) n=10) in comparison with healthy controls. The result indicated that mean serum mCRP level is significantly higher in SLE (0.29 ± 0.05) $\mu\text{g/ml}$ than in rheumatoid arthritis and Hashimoto's thyroiditis. Moreover, in ROC analysis, serum mCRP at the level of 27 $\mu\text{g/l}$ or higher could discriminate SLE from the other two diseases with sensitivity of 70% and specificity of 78%. The high sensitive nCRP is not possible to discriminate between any of these diseases. No difference was found between those patients with autoimmune diseases with and without comorbidity with depression. We would carefully conclude that serum mCRP could be a useful biomarker in inflammatory diseases such as SLE. Further studies with larger number of samples and in different inflammatory related diseases and disorders including psychiatric disorders are necessary.

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