Letter
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Acute Phase Response

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Dear editor,

We have read the article titled "The Role of C-RP / Albumin Ratio in The Diagnosis of Stroke and an Overview of the Factors Affecting Hemispheres" prepared by Tataroğlu and Güven with great interest[1]. We thank the authors and the editorial board for their courage in publishing this negative article that is informative and successful manuscript. As mentioned in an article published in nature, highlighting negative results will improve science[2]. We also would like to mention a few important points about systemic effects of inflammation and acute phase reactants.

Even if the inflammation is local, it can cause cytokine-induced systemic reactions called acute phase response. Systemic effects of acute inflammation in infections and ischemic events have been experienced and reported[1,3]. These systemic effects are mediated by the cytokines that were stimulated bacterial products such as lipopolysaccharides, viral double-stranded RNA and degradation products[4]. Interleukin-1, interleukin-6 and tumor necrosis factor-1 are important mediators of the acute phase reaction4. In particular, type 1 interferons make important contributions to these reactions[4].

Acute phase proteins are mostly synthesized in the liver and are plasma proteins that can increase hundreds of times the plasma concentration in response to inflammatory stimulus3. The most well-known of these proteins are C-reactive protein (CRP), fibrinogen and serum amyloid a protein (SAA)[5]. These proteins are synthesized from the liver as a result of cytokine stimulation[5]. SAA and CRP can bind to the microbial cell wall. They act as opsonin to fix complement[5]. Fibrinogen binds to erythrocytes. This causes the erythrocytes to form clumps and collapse rapidly. This realization forms the pathogenesis of erythrocyte sedimentation rate measurement. While the effects of acute phase proteins are positive in acute inflammation, they may cause secondary amyloidosis in chronic inflammation as in SAA[6].

On the other hand, there are also plasma proteins, most of which are synthesized from the liver and whose plasma concentrations are decreased by inflammation and cytokine stimulation[7]. these proteins are negative acute phase reactants and the most well-known of the group are albumin and transfrerin[7]. Especially albumin is used as a marker of catabolism[7].

References

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