



Estimation of Complement Components C3, C4 and Immunoglobulins IgA, IgM and IgG Among Patients with Tonsillitis

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Abstract

Background: Tonsillitis is inflammation of the tonsils. It's usually caused by a viral infection or, less commonly, a bacterial infection. Bacterial causes are mainly through group A beta-hemolytic *Streptococcus pyogenes* that leads to strep throat. Tonsils are involved in the development of immune defense mechanisms by both local immunity and immune surveillance.

Objective: To evaluate the serum levels of complement component C3, C4, immunoglobulin A, IgG, IgM, anti streptolysin O and C-reactive protein in sera of tonsillitis patients and healthy controls. The association between circulating levels of these biomarkers were investigated.

Patients and Methods: This study involved thirty-eight patients with tonsillitis (18 males and 20 females), their age range from 1-35 years. Blood samples collected from Rizgary teaching hospital/Erbil during the period from 4th of November 2015 to 13th of May 2016. They were examined and compared with 18 healthy control individuals of similar ages and gender. Sera were separated for the following tests ASO, CRP, IgA, IgG, IgM, C3 and C4.

Results: Among total patient group, 6(15.8%) and 23(60.5%) presented with positive ASO and CRP tests compared with 32(84.2%) and 15(39.55%) negative tests with significant results. Patients and healthy controls were compared and there were no significant differences between the groups in serum level of C3 and C4 ($P>0.05$), although an increase in complements levels. While, differences were significant between the group in term of IgG ($P<0.05$) and highly significant in term of IgA ($P<0.01$). There was no significant differences in mean concentration of the above parameters regarding to age ($P>0.05$), however there was highly significant difference regarding to IgG ($P<0.01$) in all the above mentioned terms. Indeed C4 also recorded highly significant result in the CRP parameter. Lastly the study was reported significant and highly significant positive and negative correlation among some above parameters like C3:C4 and C4:IgA.

Conclusion: Study immunological parameters increased in tonsillitis patients, whose age below 10 years, disease duration less than 2 years and their ASO negative.

Key words: Tonsillitis, GABHS, complement, immunoglobulins, CRP, ASO.

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