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Anti- β_2 -glycoprotein I autoantibody expression as a potential biomarker for strokes in patients with anti-phospholipid syndrome

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Anti-phospholipid syndrome (APS) is an autoimmune disease. Cerebral ischemia associated with APS occurs at a younger age than typical atherothrombotic cerebrovascular disease, is often recurrent, and is associated with high positive IgG anti-phospholipid (GPL) unit levels. This study sought to determine the frequency rates of anti-cardiolipin (aCL) dependent on the presence of β_2 -GPI, anti- β_2 -glycoprotein I ($\text{a}\beta_2$ -GPI) and anti-phosphatidyl serine (aPS) IgG autoantibodies among stroke patients, and thus demonstrate the importance of testing for $\text{a}\beta_2$ -GPI autoantibodies. For this study, stroke patients and control subjects recruited from Mosul, Erbil and Dohuk provinces in Northern Iraq between March 2004 and March 2005 were evaluated. All cases were under 50 years-of-age and had no recognizable risk factors. Using ELISA to evaluate the presence of IgG isotype of aCL, $\text{a}\beta_2$ -GPI and aPS autoantibodies in their blood, the results indicated that the frequency of $\text{a}\beta_2$ -GPI was 14/50 (28%), aCL was 11/50 (22%), and aPS was 9/50 (18%) among stroke patients. In contrast, aCL was detected in 2/30 (6.7%) of control subjects; each of the other anti-phospholipid antibodies (APLA) was never observed. Of all the $\text{a}\beta_2$ -GPI+ cases, the incidence of stroke patients having the combined profile of $\text{a}\beta_2$ -GPI + aCL was 11/14 (78.6%) and of $\text{a}\beta_2$ -GPI + aPS was 9/14 (64.3%). Only 2/14 (14.3%) of these $\text{a}\beta_2$ -GPI+ patients, also expressed aCL in the absence of aPS. The frequency of patients expressing all three markers was only 9/14 (64.3%). In none of the APS/stroke patients were aCL or aPS expressed in the absence of the $\text{a}\beta_2$ -GPI. Conversely, IgG $\text{a}\beta_2$ -GPI as a sole marker was seen in 3/14 (21.4%) of these patients (i.e. in absence of either other marker). It can be concluded from these studies that among the three major forms of APLA examined, the presence of IgG $\text{a}\beta_2$ -GPI autoantibodies appeared to correlate best with stroke in patients who were concurrently suffering APS.

Biography

Husham Bayazed has completed his PhD from University of Mosul, College of Medicine. He is now Consultant at the Scientific Research Center, University of Zakho / Kurdistan Region, Iraq. He is specialist in Immunology and has published more than 25 papers in reputed journals and has been serving as scientific reviewers of many local and international medical journals. In addition of being Fellowship of ISC, Infection, Cancer, Immunology Advisory Board Member (EUROMDnet) (Belgium), Membership of World Stroke Organization, Membership of Metabolomics (USA) and Membership of American Association of Science & Technology.

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