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Antiphospholipid antibodies in Mexican HIV-positive patients

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ABSTRACT

Several studies have shown that HIV patients tend to develop autoimmune diseases, and have numerous antibodies, such as antiphospholipid antibodies. Antiphospholipid antibodies are the serological markers used in the diagnosis of the antiphospholipid syndrome. However, antiphospholipid antibodies also appear to exist in infectious diseases.

Objective: To measure the titers of antiphospholipid antibodies in healthy and in HIV positive Mexican mestizo patients, and correlate them with the patient clinical manifestations to identify possible findings compatible with an autoimmune disease.

Material and methods: A case control study was conducted on 50 healthy mixed race Mexican subjects and in 50 randomly selected HIV-positive patients from the Infectious Diseases Department of a Regional Hospital in Puebla, México. Antiphospholipid titers were performed on the patients and controls and analyzed to see if there was any correlation between clinical signs.

Results: There was a statistical difference in the titers of anticardiolipin antibodies isotype IgG between the control group and the HIV group. When sexual preference was evaluated in the HIV group a statistical difference in the antibody titers was observed between homosexual and heterosexual HIV patients.

Conclusion: There were no correlations found between the antibody titers and specific clinical manifestations in HIV positive patients. The exact clinical meaning of the presence of these antibodies in HIV positive patients is still unknown, so further studies are needed.

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Anticuerpos antifosfolípido en pacientes mexicanos VIH positivos

Palabras clave:
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RESUMEN

Varios estudios han demostrado que los pacientes con VIH tienden a desarrollar enfermedades autoinmunes, presentando diversos anticuerpos como los anticuerpos antifosfolípidos. Los anticuerpos antifosfolípido son los marcadores serológicos que se emplean en el diagnóstico del síndrome antifosfolípido. Sin embargo los anticuerpos antifosfolípido también suelen existir en enfermedades infecciosas específicas.

Objetivo: Medir los títulos de anticuerpos antifosfolípido en pacientes mexicanos mestizos sanos y VIH positivos y correlacionarlos con las manifestaciones clínicas de los pacientes para identificar posibles hallazgos compatibles con alguna enfermedad autoinmune.

Material y métodos: Se trata de un estudio de casos y controles en el que se evaluaron los títulos medios de anticuerpos antifosfolípidos en 50 mestizos mexicanos mestizos sanos y 50 VIH positivos, así como su correlación con las manifestaciones clínicas de cada paciente, siendo éstos elegidos aleatoriamente del servicio de Infectología de un Hospital Regional en Puebla, México.

Resultados: Hubo una diferencia estadísticamente significativa en los títulos de anticuerpos anticardiolipina del isotipo IgG entre el grupo control y el grupo infectado por VIH. Cuando se evaluó la preferencia sexual en el grupo de los pacientes VIH positivos se encontró una diferencia estadísticamente significativa en los títulos de anticuerpos anticardiolipina entre pacientes homosexuales y heterosexuales con VIH.

Conclusiones: No se encontró ninguna correlación entre los títulos de anticuerpos y las manifestaciones clínicas en los pacientes infectados con VIH. El significado exacto de la presencia de estos anticuerpos en los pacientes infectados por VIH continúa siendo desconocido, por lo que se necesitan más estudios en el futuro.

Introduction

Antiphospholipid antibodies (aPL) are a heterogeneous group of autoantibodies directed against negatively charged phospholipids, protein–phospholipid complexes and phospholipid binding proteins measured by solid-phase immunoassays.[1,2] These antibodies are detectable in serum of patients with various diseases including autoimmune diseases, lymphoproliferative disorders, coagulation disorders, recurrent fetal loss, and some viral and bacterial infections, secondary to an intense antigenic stimulation of the immune system.[3–5]

aPL such as lupic anticoagulant (LA), anticardiolipin (aCL) and anti β-2-glycoprotein (aβ2-GPI) antibodies are associated with an increased risk of arterial and venous thromboembolism, which is a common clinical finding in the antiphospholipid syndrome (APS).[2,3] The aβ2-GPI is not required to establish the diagnosis of APS; however, it has been linked to thrombotic events.[6] The aPL are related to a prothrombotic condition due to modifications in the coagulation pathway, associated to recurrent pregnancy morbidity such as fetal loss and thromboembolic complications.[2,3]

aPL have also been associated to viral and bacterial infections. The first description was with syphilis, but many other viral, bacterial and parasitic infections have also shown to increase aPL, mainly aCL. With the wide use of the aCL ELISA for the detection of aPL in the diagnosis of the APS, it was quickly noticed that this test is also regularly positive in patients with viral and bacterial infections.[7] aPL have been detected in serum of patients infected with Hepatitis C Virus, Human Immunodeficiency Virus (HIV), Cytomegalovirus, Varicella Zoster Virus, Epstein–Barr Virus, Adenovirus, Parvovirus B 19, legionnaires diseases, Tuberculosis, among others.[4,8]

Specifically aCL and aβ2-GPI have been found increased in patients with chronic HIV infections, but their association with thrombotic events has not been proven.[9] Abuaf et al. reported on the prevalence of aPL in HIV infection, and aCL were reported to be present in 0–94%, aβ2-GP1 in 4–47%.[10,11] aβ2-GPI are not usually found in this type of patients; besides when they are absent or exist at low titers there is a minor risk for a thrombotic events to occur.[4,9,12] Some authors have proposed the association between these antibodies and the development of symptoms; therefore, it is important to reevaluate the real role of these antibodies in HIV infection and to determine if it is an epiphenomenon of no clinical relevance.

In HIV infection, aPL have been closely linked with viral replication levels. On one hand, some authors suggest that HIV infection is associated with many abnormalities in B cell function, resulting in the production of a large variety of autoantibodies. Therefore, in HIV positive patients, aPL, specifically aCL, are considered to be a marker of impaired humoral immunity.[4] On the other hand, Solis et al., in a case report, showed that as the viral load increased, the aPL titers increased too.[5] This could definitely support the idea that stronger antigen stimulation involves a stronger immune response, even though it is a faulty one.

APS is a disease characterized by thrombotic events and several laboratory abnormalities.[2,6] It usually affects arterial and venous beds causing transient ischemic attacks, stroke or deep venous thrombosis, respectively.[3] The diagnosis is