Blood Clot Abnormality In Leprosy Patients

Silva, D.S.¹, Teixeira, L.A.C.², Ferreira, A.T.S.³, Beghini, D.G.³, Moreira, M.B.P.¹, Rosa, P.S.⁴, Pessolani, M.C.V.¹, Perales, J.E.A.³, Nery, J.A.C.¹, Sarno, E.N.¹, Tovar, A.M.F.², Esquenazi, D.¹, Lara, F.A.¹.
¹Pavilhão Hanseníase, Fundação Oswaldo Cruz, ²Instituto de Bioquímica Médica, Universidade Federal do Rio de Janeiro, ³Departamento de Farmacodinâmica, Fundação Oswaldo Cruz, Rio de Janeiro, ⁴Departamento de Patologia, Instituto Lauro de Souza Lima, Bauru, Brazil.

Introduction: Leprosy is a chronic infectious disease that affects the skin and peripheral nerves, in a systemic manner. The response to infections may be accompanied by systemic changes in lipid metabolism and the coagulation cascade. In the present work, we investigate the nature of a lipid-like mass formed above blood clot during lepromatous patient serum harvesting. The main point of the present work was to understand the composition and origin of this mass, herein called as leprosum clot. Methods: We followed serum harvesting from approximately 2000 patients and contacts that were conducted to the leprosy ambulatory Souza Araujo in Rio de Janeiro, Brazil. We performed the lipid analysis of the leprosum clot by HPTLC, whereas the clot’s proteins were analyzed by 2D-Eletrophoresis and Mass spectrometry. We measure IgM and IgG against cardiolipin as well as coagulation and lipids parameters in blood samples of 30 patients which presented the leprosum mass in their blood, all of them belonging to the lepromatous pole of the disease, with a high incidence of erythema nodosum leprosum (ENL). Results: HPTLC analysis show phospholipids levels similar of the observed in normal blood clot and a higher amount of neutral lipids: mainly cholesterol ester and triglycerides. Differential proteomic analysis demonstrates that the leprosum mass is a true fibrin clot, and its distinct appearance can be attributed to a high lipid content composed by blood HDL and a glycosaminoglycan, most likely dermatan sulfate, probably originated from tissue damage. Although coagulation parameters such as prothrombin time presented normal results in these patients whereas fibrinogen, D-dimer and anti-cardiolipin IgM presented alarming high levels. Conclusion: Our results showed an exacerbation of intravascular coagulation process on LL patients, especially, who that was on progression to ENL. The involvement of immune complexes anti-cardiolipin is being investigated.

Key Words: Leprosy, Mycobacterium leprae, Coagulation and Proteomic.
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