

A Possible Role for *Chlamydia pneumoniae* in Vaso-occlusive Crisis in Sickle Cell Disease

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Background: Vaso-occlusive crisis (VOC) is the most common complication in sickle cell disease (SCD); it causes a wide spectrum of end-organ damage, a process found to be mediated by inflammatory responses. Through activating endothelial and immune cells, *Chlamydia pneumoniae* (Cp) infection was postulated to be a factor in the morbidity of acute chest syndrome in sickle cell patients (SCP).

Objective: To provide serological evidence of a possible role of Cp in VOC in SCD by investigating the occurrence of Cp IgG and IgA antibodies in SCD patients compared to control subjects.

Design: Open Controlled Trial.

Setting: Bahrain Defense Force Hospital and Princess Al-Jawhara Center for Molecular Medicine, Arabian Gulf University Bahrain.

Method: Venous blood samples were collected from one hundred and twelve patients who had acute phase of VOC and from one hundred and twelve controls. Anti-Cp IgG and IgA antibodies were detected by using species specific Cp IgG and IgA enzyme immunoassay (EIA) kits, in both patients and controls sera. Parametric comparisons were performed using *t*-test.

Result: The results showed a significant difference in Cp IgG and IgA antibodies prevalence between patients and controls ($P < 0.0001$). Dual Cp IgG and IgA seropositive were higher in patients than controls.

Conclusion: The study provided serological evidence of a possible role of Cp infection in VOC in the SCD.

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