Letters to Editor

Sickle Cell Disease and *Bartonella* Spp. Infection

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**To the Editor,**

We read with great interest the recent article *The role of infection in the pathogenesis of vaso-occlusive crisis in patients with sickle cell diseases*, written by Dr. Ahmed SG. He pointed that these patients have impaired immunity and are thus predisposed to infections which can precipitate the painful crisis.¹ SCD is the most common hereditary hematologic disorder in the world and remains a significant global health problem with high relevance to low- and middle-income countries.² The vast majority of SCD patients live in underdeveloped nations with high prevalence and transmission rates of infections.¹ In equatorial Africa 10-40% of native populations have sickle (S) gene.² In Brazil some Afro-descendant groups have a prevalence of up to 10% of S gene and the disease is a relevant public health problem.²³ SCD patients have infections which are often asymptomatic.¹ Gram-negative infection are frequent in pneumococcal vaccineted SCD patients that had been splenectomized and functional asplenia is as frequent as 90% by 6 years of age.⁴ These patients frequently need blood transfusion and transmission of pathogens via transfusion in SCD patient infection has been documented.⁵ Amongst the potential gram-negative infections *Bartonella* spp. are emergent bacteria with worldwide distribution. An increasing number of *Bartonella* spp. are regarded as zoonotic pathogens, creating a public health concern for human and veterinary medicine. The extent of *Bartonella* spp. infection is underestimated.⁶ *Bartonella* spp. bacteremia is potentially fatal, especially in immunodeficient patients. Immunocompetent individuals are also at risk for chronic infection by this intra-erythrocyte and intra-endothelial agent though the infection can be asymptomatic.⁷ A broad spectrum of clinical manifestations have been related to *Bartonella* spp. infection, many of which were considered idiopathic prior to the diagnosis of chronic *Bartonella* spp. infection. A recent study from the United States of
America found that almost 50% of patients with non-specific symptoms (fatigue, sleeplessness, joint and muscle pain etc.) had positive Bartonella spp. serology and/or blood PCR positive to Bartonella spp. One in four patients had Bartonella spp. bacteremia.

Previous studies show that blood donors can have asymptomatic bacteremia. There are no gold-standard tests to confirm Bartonella spp. infection and false-negative results are frequent even with serology and multi-step molecular and microbiological techniques. Thus diagnostic tests for Bartonella spp. remain challenging, warranting development of more sensitive and reproducible diagnostic methods.

It is likely that SCD patients could have a higher prevalence of Bartonella spp. infection rate as they present with inflammation, endothelial activation, asplenia, and the need for frequent blood transfusions; pathological features that can promote the invasion and progression of Bartonella spp.. Pain, fatigue and fever, characteristic features of Bartonella spp. infection are manifest in SCD. Therefore, coordinated international efforts should be initiated to evaluate the relevance of this infection in SCD and other chronic immunodeficient patients.

References:


