

Letter to the Editor

Association between *Brucella melitensis* DNA and *Brucella* sp. Antibodies[∇]

Brucella sp. antibodies, despite falling to low levels, can remain measurable after recovery from acute brucellosis (1). Recently, several studies have shown the persistence of *Brucella* sp. DNA in both chronic brucellosis patients and asymptomatic subjects with a history of brucellosis (2–4, 6). However, to our knowledge, the association between serum antibodies and *Brucella* sp. DNA has not been investigated.

We screened a cohort of 38 subjects with a well-documented history of brucellosis for the presence of *Brucella melitensis* DNA and *Brucella* antibodies. For that purpose, we tested both a quantitative real-time PCR (qPCR) assay (2) and an immunocapture-agglutination test (Brucellacapt; Vircell SL, Granada, Spain) that was performed as specified by the manufacturer. The Brucellacapt test has been described as offering results comparable to those of the Coombs anti-*Brucella* test, the most often used technique for the diagnosis of chronic brucellosis (5).

Twenty-seven (71%) subjects were men, and 11 (29%) were women. The mean age was 49 ± 14 years (range, 26 to 83 years). The diagnosis of acute brucellosis was made between 3 and 33 years previously, according to one or both of the following criteria: isolation of *Brucella* spp. from blood or any sample of body fluid or tissue and the presence of a compatible clinical picture together with the demonstration of specific antibodies at significant titers (Wright test titer of $\geq 1:160$ or Coombs anti-*Brucella* test titer of $\geq 1:320$) or seroconversion. According to their clinical course after the initial episode, subjects were divided into three groups. Group A consisted of 10 (26%) focal disease subjects. Group B comprised 8 (21%) nonfocal disease subjects complaining of nonspecific symptoms, such as fatigue, malaise, arthralgia, and/or myalgia. The remaining 20 (53%) subjects were asymptomatic (group C). Chronic brucellosis patients included all patients diagnosed with focal disease and those whose symptoms had persisted for more than 1 year after the initial episode. Results are expressed as means \pm standard deviations. *P* values less than 0.05 were considered statistically significant.

We found an association between being *B. melitensis* DNA

positive and being antibody positive. Among the 22 subjects with detectable *B. melitensis* DNA, 19 (86%) subjects had *Brucella* antibodies, while among the 16 subjects without *B. melitensis* DNA, *Brucella* antibodies were detected in 7 (44%) ($P = 0.005$; chi-square test). In the case of the asymptomatic subject group, the DNA-antibody concordance was not statistically significant ($P = 0.264$; two-tailed Fisher's exact test). The distribution of DNA-antibody results by group is shown in Table 1.

The chronic brucellosis patients harboring *B. melitensis* DNA are more likely to show a seropositive sample than the remaining subjects. These findings suggest that after the initial infection, either the viable *Brucella* or its antigenic and structural components persist in the host and may have diagnostic and pathogenic implications.

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TABLE 1. Distribution of the qPCR and Brucellacapt results from 18 patients with chronic brucellosis and 20 asymptomatic subjects

Brucellacapt titer ^a	No. of patients/subjects with qPCR blood/serum result ^b :													
	Focal disease patients (n = 10)				Nonfocal disease patients (n = 8)				Asymptomatic subjects (n = 20)					
	+/+	+/-	-/+	-/-	+/+	+/-	-/+	-/-	+/+	+/-	-/+	-/-		
0					1				1				1	9
40		1		1					1				1	5
80					1								1	2
160	2						1						1	
320	1	4			1		1							
≥ 640	1						1							

^a Reciprocal titers are shown.

^b +, positive; -, negative.

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