1 AUGUST

Stan Deresinski, Section Editor

In the Literature

Tropheryma whipplei Endocarditis

Geißdörfer W, Moos V, Moter A, et al. High frequency of *Tropheryma whipplei* in culture-negative endocarditis. J Clin Microbiol 2012; 50:216–22.

Geißdörfer et al examined the frequency of *Tropheryma whipplei* infection of explanted cardiac valves in an observational cohort study at 2 university centers in Germany from 2000 through 2007. Using conventional culture methods and polymerase chain reaction (PCR) amplification and sequencing of the 16S rRNA gene, evidence of the presence of bacteria was detected on valves of 255 (22.5%) of 1135 patients. This included 84 (9.5%) of 878 from cohort I (unselected consecutive patients), 68 (53.1%) of 128 from cohort II (Erlangen patients with suspected or possible infective endocarditis), and 103 (79.8%) of 129 from cohort III (Berlin patients with suspected or possible endocarditis). *T. whipplei* was detected in 16 (6.3%) of the 255 and was the fourth most frequently identified after (in decreasing order) streptococci, staphylococci, and enterococci. All 16 were further confirmed as *T. whipplei* by species-specific PCR amplification and sequencing. Among patients with suspected or possible endocarditis (cohorts II and III), this intracellular pathogen was found in 10 (3.9%) of 257 patients and 10 (5.8%) of 171 bacterium-positive valves. It was also detected in 6 (0.7%) of 878 cohort I patients and 6 (7%) of 84 bacterium-positive valves from the consecutive unselected patients undergoing valve replacement in Erlangen. In contrast, *Bartonella quintana* was identified in only 3 cases and *Coxiella burnetii* in 2.

The mean age of the 16 patients whose valve had evidence of *T. whipplei* infection was 66.38 ± 9.0 years. Only one patient met the Duke criteria for the diagnosis of infective endocarditis. The aortic valve was involved in 13 patients and the mitral valve in the other 3. Two of the 16 patients had histologic evidence of gastrointestinal Whipple's disease, whereas isolated inflammatory arthritis, chronic diarrhea, and weight loss were each present in 2 patients. Only 3 patients had fever. Five of the 16 patients died, all of cardiovascular complication. The patients who died included 3 of 11 who received ceftriaxone for 2 weeks followed by trimethoprim-sulfamethoxaxole (usually for 1 year), 1 of 3 who received other regimens, and 1 of 2 who received no antibiotic therapy.

Thus, at least in patients from 2 regions of Germany, *T. whipplei* was the fourth most common cause of endocarditis after the 3 "usual suspects": streptococci, staphylococci, and enterococci. Furthermore, it was >5 times more common than *B. quintana*, and in an area in which Q fever is rare, it was detected 8 times more frequently than was *C. burnetii*.

Feurle et al recently addressed the antibiotic therapy of patients with *T. whipplei* infection. They randomized 40 patients with untreated Whipple's disease to receive a 2-week induction therapy with either ceftriaxone or meropenem, each followed by 12 months of treatment with trimethoprim-sufamethoxaxole and found no difference in outcome: apparent cure was achieved in all 40 patients [1]. Whether this is the optimal regimen for patients with endocarditis is unknown. Infection with *T. whipplei* may be universal, with most infections occurring in childhood, and asymptomatic carriage is not rare [2].

The diagnosis of classical Whipple's disease may often not be difficult. In contrast, the diagnosis in patients with limited manifestations of the disease requires a high index of suspicion and modern laboratory support. The problem is especially acute in patients with endocarditis, who seldom meet standardized criteria for this diagnosis and in whom this can only be currently achieved by analysis of an excised valve. Although routine histological techniques may then detect the organism in some cases, this method of diagnosis is insensitive, and the optimal method of detection is PCR followed by sequencing of the amplicon.

References

1. Feurle GE, Junga NS, Marth T. Efficacy of ceftriaxone or meropenem as initial therapies in Whipple's disease. Gastroenterology **2010**; 138:478–86.
2. Moos V, Schneider T. Changing paradigms in Whipple's disease and infection with *Tropheryma whipplei*. Eur J Clin Microbiol Infect Dis **2011**; 30:1151–8.