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Diagnosis of Q Fever

My colleagues and I compliment Dr. Fournier and coauthors on an excellent review (3). However, we were surprised to read the statement that there is no commercially available enzyme-linked immunosorbent assay (ELISA) for the serological detection of Q fever, since papers describing these assays have been published (1, 2, 4). These ELISAs, for the detection of specific immunoglobulin M (IgM), IgA, and IgG antibodies produced during Q fever, are available from PanBio Pty Ltd., Brisbane, Australia. All tests use a common assay method, including the provision of cutoff control sera, and take less than an hour to perform. The availability of these tests in part contradicts the claim made by Fournier et al. (3) that ELISA is a more laborious technique than immunofluorescence assay (IFA) and requires considerable experience in interpreting the results. The IgG ELISA has been shown to have good correlation with immunofluorescence, and all patients determined to have a significant level of antibody by IFA were positive in the PanBio test (2, 4). The IgM and IgA ELISAs showed a significant correlation with the complement fixation test, with sensitivity of 100% and specificity of 89% being reported for each assay (1).

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Author's Reply

I would like to thank Dr. Devine for his letter describing a commercially available ELISA for the diagnosis of Q fever. However, in two of the three referenced papers, which were published in letter (3) and note (2) formats, ELISA was described not as a diagnostic technique but as a seroepidemiological screening test. Moreover, in the latter paper, as a conclusion, the authors expressed their intent to reassay the positive results obtained by ELISA, but these data are not available to date. The third article (1), which was not published when we submitted our manuscript, is an interesting preliminary work, but the authors compared ELISA not to the reference method for serological diagnosis of Q fever, i.e., IFA, but to complement fixation. Therefore, the sensitivity rates of ELISA that the authors determined by comparison with complement fixation, which lacks sensitivity, may not be accurate. Moreover, their test lacks specificity for the detection of IgM since three of 23 (13%) controls with infections other than Q fever were positive. Such a high rate of false-positive results is not observed with IFA.

Based on these results, we still think that ELISA is not a proven alternative for the diagnosis of Q fever.

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