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## LYME DISEASE PRESENTING AS AN INFLUENZA-LIKE ILLNESS

### To the Editor:

I read with interest the article by Steere et al. (1) on seroconversion to *Borrelia burgdorferi* with either immunoglobulin (Ig) G or IgM Western blot in a group of patients presenting with a summer “flu-like” illness without rash. A minority had concurrent ehrlichiosis or babesiosis, often more symptomatic than those with Lyme disease alone. The authors recommend considering Lyme disease in patients with “systemic symptoms during summer, especially when headache or arthralgia but no upper respiratory or gastrointestinal symptoms is reported” (1). A closer look at these specific symptoms demonstrates that only 63% had fever, 54% had headache, and 71% had arthralgias. The authors do not specify whether all or just some of the above symptoms are required to justify serologic testing. Although gastrointestinal or respiratory symptoms were rarely seen in the current series, these observations could be related to methodology. The source of the current report was a Lyme disease vaccine trial wherein study subjects were provided an instructional packet that encouraged reporting of flu-like illnesses “without predominant respiratory or gastrointestinal symptoms” (2,3). Additionally, the original study definition of possible Lyme disease excluded patients with “cough, coryza, diarrhea, or vomiting” (3). Thus, the absence of notable gastrointestinal or respiratory symptoms in

this set of patients could be a consequence of both reporting bias and the case definition used.

Presumably a substantial fraction of patients presenting with nonspecific constitutional symptoms have viral illnesses, and clinical criteria that can separate Lyme disease without rash from viral processes are needed. A recent small prospective study by Belongia et al. (4) was not able to distinguish summertime “flu-like” illnesses due to tick-related infection from viral illnesses on the basis of clinical presentation. Although most investigators have noted a high incidence of hematologic and liver enzyme abnormalities in patients with ehrlichiosis or babesiosis (5–7), these laboratory tests were not incorporated into the current authors’ diagnostic approach. Because the patients studied by Steere et al. (1) represent a subset of a much larger cohort derived from a prospective Lyme vaccine study, those patients screened for Lyme disease but who were rejected might have formed the basis of a control group against which those with “flu-like” symptoms due to Lyme disease could have been compared. Barring more complete epidemiological studies and appropriate predictive models, caution should be exercised in routinely ordering serology for *B. burgdorferi* based on nonspecific symptoms.

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### The Reply:

Dr. Porwancher questions whether study methodology was the reason that gastrointestinal or respiratory symptoms were rarely seen in our series of 42 patients who had systemic symptoms without erythema migrans (1). We do not think so. Early symptoms of Lyme disease were originally described in 314 patients with erythema migrans (2). These patients often had malaise and fatigue, headache, fever and chills, myalgias, or arthralgias. A few patients had cough, chest pain, or diarrhea, but these were not the predominant symptoms. In our recent study (1), the same clinical picture was observed in patients without erythema migrans.

The vaccine study was designed to identify all participants who developed *Borrelia burgdorferi* infection (3). Patients were encouraged to report to their study physician if they had any symptoms, alone or in combination, which might be due to Lyme disease, as previously described in the medical literature. During the study, more than 400 participants were evaluated for flu-like illness, but only 28 had immunoglobulin (Ig) G seroconversion to *B. burgdorferi* when these symptoms were present (1). In these patients, headache and arthralgias were common, but gastrointestinal and respiratory symptoms were not. We do not think that Lyme