

Human granulocytic ehrlichiosis in Europe

SIR—Ehrlichioses are tick-borne diseases caused by intracellular bacteria that parasitise leucocytes of humans and animals. *Ehrlichia chaffeensis* is the agent of human monocytic ehrlichiosis first described in 1986.¹ This Ehrlichia is transmitted by *Amblyomma americanum* ticks and the reservoir seems to be deer. Despite an intensive search, human monocytic ehrlichiosis has been described only in the USA. Recently, human granulocytic ehrlichiosis has also been reported in the USA.^{2,3} Human granulocytic Ehrlichia is serologically and genetically indistinguishable from *E phagocytophila* and *E equi*, the agents of granulocytic ehrlichiosis in sheep and in horses. *Ixodes* spp ticks are the vectors of *E phagocytophila* and are likely to be the vector of this disease.^{2,4} *Ixodes* ticks are also the vector of *Borrelia burgdorferi*, the agent of Lyme disease. *Ixodes* ticks are distributed world wide, and are plentiful in Switzerland where many cases of Lyme diseases have been described. This led us to hypothesise that there may be cases of granulocytic *Ehrlichia* in areas where Lyme disease is present.

70 sera from people bitten by *Ixodes* ticks (proven by the presence of *B burgdorferi* antibodies in their serum) in northern Switzerland were tested by immunofluorescence assay (IFA) against *E equi* antigens. We also tested 50 sera from blood donors from the south of France not exposed to *Ixodes* ticks. While none of the blood donors were found positive at a dilution greater than 1:50, indicating IFA specificity of 100%, 12 of 70 (17.1)% sera from tick-bitten patients had antibodies against *E equi* with titres greater than 1:100. Although antigenic cross reactivity exists among *Ehrlichia* spp, IFA is sufficiently specific to differentiate granulocytic *Ehrlichia* from others. This high seroprevalence of antibodies to *E equi* indicates that human granulocytic *Ehrlichia* may exist in Europe where Lyme disease and/or *Ixodes* ticks are present. Our knowledge of the clinical presentation of patients with granulocytic ehrlichiosis is based on 12 reported cases.² Fever, malaise, myalgia, and headaches are the commonest symptoms. There is often severe thrombocytopenia. Examination of Giemsa-stained blood smears collected at the peak of fever usually reveals purple inclusions (ehrlichial morulae) in 1-40% of granulocytes. Serology is available using *E equi* antigen. Doxycycline (200 mg/day) is an effective treatment.^{2,5}

Febrile patients presenting with a history of tick bite in areas endemic for Lyme disease should be tested for infection by granulocytic *Ehrlichia* by examination of blood smears and serology.

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