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Tourism, climate change and diagnostics

EDUCATIONAL CASE REPORT

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Travel and climate are important factors in the spread of a number of infectious diseases. Global warming and increasing precipitation provide better conditions for the spread of many diseases that are transmitted by means of mosquitoes, other insects and animals. As a result, travel within Europe can also result in diseases that do not normally occur to us unless the patient has been in warmer, more remote places. A number of these diseases are therefore underdiagnosed, partly because of lack of awareness and partly because the diagnostics require special tests (1, 2).

Since 2007, cholera infection has been reported in France, spreading of Chikungunya fever in Italy, malaria in Italy and Greece and dengue fever in southern France. West Nile Fever was established in Romania as early as in 1960, and from there it has spread several times to other European countries with birds and mosquitoes as the vector chain (2). Outbreaks of leptospirosis have been associated with floods, and have been reported from a number of European countries as well as from developing countries (1, 3) – (6).

A number of these diseases require specific, targeted diagnostic measures before the diagnosis can be confirmed. Patients are often hospitalised with suspected septicaemia, and blood cultures are used to try to confirm the diagnosis. Perhaps the most important reason for being unable to confirm a diagnosis is that the patient has had antibiotics before hospitalisation. But the bacteria in a number of infections, such as leptospirosis, brucellosis and tularaemia, will grow poorly in an ordinary blood culture under any

circumstances. Some require a longer incubation time than the usual five days; some require special media. Other syndromes can be detected most easily by means of specific serological tests and polymerase chain reaction tests (PCR) (4).

The diagnostics therefore depend on sound knowledge and an awareness of the possibilities that exist. If they obtain adequate information, microbiology departments can set up specialised analyses themselves. In other cases, specialised analyses must be ordered. It is therefore important to have a good patient history – where have you been, when, and what did you do?

The diagnostics of «imported fevers» are important because several of the diagnoses in question require specific treatment. This applies, for instance, to typhoid fever, rickettsioses and malaria, where ordinary antibiotics treatment often does not work.

Leptospirosis is the most common bacterial zoonosis. It is produced by a number of pathogenic species that may have various rodents and some other animals as asymptomatic carriers. Rain and flooding are important factors in the spread of Leptospira. Water becomes contaminated by chronic carriers among rats and other rodents that excrete Leptospira in their urine. Under favourable conditions, the bacteria can survive in water for many months.

There has been a substantial increase in incidence among tourists, particularly in connection with sporting activities associated with water, such as rafting, triathlon, rowing and other water sports (3) – (5). As with a number of other exotic diseases, the disease picture can vary. This is therefore an important diagnostic possibility in the case of «imported fevers». In the great majority of cases, leptospiroses are mild fevers that remain undiagnosed, but an estimated 10 % evolve into a serious disease picture with a significant mortality (6). The disease is assumed to result in most deaths among poor people in developing countries who are infected because of the high risk of transmission and limited opportunities for treating them.

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