Epidemiology of travel-related infections

Travel-related infections cause the death of about 50 British people each year. The connection with travel is quite clear for conditions such as malaria which are only exceptionally acquired in Britain but the diagnostically useful connection may be less obvious for an infection such as legionellosis which is more ubiquitous. Each causes the deaths of about ten British travellers per year. Attribution is yet more difficult for tuberculosis with its long and variable incubation period but the majority of cases of tuberculosis in immigrants presents within five years of arrival in this country [1]. This is of little help in diagnosing individual cases but emphasises the importance of re-infection in tuberculosis in adults. There is a danger that we may miss travel links when an incubation period is so long that it is only apparent when groups rather than individuals are considered, but it is now clear [2] that the risk of acquiring HIV through heterosexual intercourse in countries where the prevalence of HIV is greater than in Britain—ie the majority—makes it imperative that those concerned with giving advice to travellers should recognise that healthy travel depends much more on behaviour than on reliance on a range of vaccines. The continued health of the returned traveller depends on educating patients and general practitioners to recognise the usually non-descript early symptoms of most travel-related infections.

Imported fevers

Conditions causing imported fevers are a good test of a general physician’s competence, for four reasons:

1. They are increasing—but will remain unfamiliar.
2. Most must be suspected if they are to be diagnosed since they are not conditions which will be diagnosed by routine tests.
3. Early treatment may save lives or prevent chronicity.
4. Therapeutic trials are imperative in acutely ill patients if confirmation of the likely diagnosis depends on an antibody response.

Specific conditions

Falciparum malaria—accounts for about ten deaths in the UK each year [3]. In Birmingham we have seen a marked increase in the numbers of cases of severe malaria in the last year as travellers venture into highly endemic rural areas, and are careless with chemoprophylaxis. Falciparum malaria may progress very rapidly, especially in patients who have not taken prophylaxis.

Some patients and their doctors fear that antimalarial prophylaxis may make recognition of malaria more difficult by reducing the numbers of parasites in peripheral blood films. This probably happens occasionally, and physicians must not hesitate to treat malaria even if blood films are negative (according to the regularly-updated guidelines in the British National Formulary) in febrile patients with non-descript symptoms if they have been in areas endemic for falciparum malaria in the preceding three months. The safety of appropriate prophylaxis was clearly demonstrated in a study which showed that the severity of malaria in patients who, despite prophylaxis, had developed the illness was much less than in those who had not taken prophylaxis [4].

Legionellosis—seems to be under-appreciated as a travel-related condition, even though 100 cases, about one third of the total notified, are so acquired each year [5]. As with malaria, initial symptoms are usually deceptively non-descript, while early erythromycin may be life saving. A dry cough may be overlooked by both patient and physician but is a vital clue which should lead to a chest x-ray even in the absence of physical signs, when travellers who have stayed in, or visited, air-conditioned buildings appear to be more unwell than would be expected from a simple viral infection.

Typhoid and paratyphoid fever—about 200 cases are notified each year and, unlike most infections in travellers, will usually be diagnosed by an investigation which is routine in pyrexial patients, namely blood culture. In contrast, Leptospirosis and typhus are unlikely to be diagnosed unless suspected clinically. Leptospirosis is widespread in areas where exposure to rat-infested water is possible and such a history in a patient with a multi-system disorder is enough to justify empirical treatment. Typhus is geographically more localised, most patients having visited rural areas of Southern Africa or S E Asia. Most patients will have an eschar, an area of necrotic skin about 1 cm in diameter, often
accompanied by enlargement of regional lymph nodes. Immediate treatment with tetracycline is indicated.

"Amoebic abscess, schistosomiasis, brucellosis and Lyme disease"—are less likely than the foregoing to cause rapid life-threatening disease in travellers but are easily overlooked at an early stage when they are most easily eliminated with least likelihood of tissue damage. Acute bacteraemic brucellosis may be diagnosed by blood culture but otherwise the diagnosis of all these conditions is most often established serologically, with the important corollary that the physician must have a diagnosis in mind if the appropriate test is to be done by the laboratory.

A good history and examination informed by knowledge of valuable clues is therefore crucial and will lead to early identification of these unfamiliar, but treatable conditions (Table 1 shows some important examples).

"Viral hepatitis"—may have a febrile prodrome and travellers may be infected via the faecal-oral route (A and B) or via contaminated needles (B and C). Our experience at Heartlands Hospital in 1994 illustrates this point (Table 2).

"Dengue fever"—an arboviral infection which has recently given rise to major epidemics in S E Asia and the Caribbean, may cause severe myalgia, often a macular rash and in many cases depression of the bone marrow which can result in profound, but usually self-limiting, thrombocytopenia. Treatment is supportive, but because dengue is often acquired in malarious regions, precautionary therapy for malaria will often be indicated while awaiting serological confirmation.

References

1 Medical Research Council Cardiothoracic Epidemiology Group. National Survey of tuberculosis in England and Wales in 1988. *Thorax* 1992;47:770-5.

2 Communicable Disease Surveillance Centre. AIDS and HIV-1 infection in the United Kingdom: monthly report. *Communicable Disease Report Review*, 1994;4:131-4.

Table 1. Valuable clues which aid diagnosis

| Clues                                      | Infection                         |
|--------------------------------------------|-----------------------------------|
| Leucocytosis, liver tenderness             | Amoebic abscess                   |
| Swimming in Africa, eosinophilia           | Schistosomiasis                   |
| Ingestion of raw milk                      | Brucellosis                        |
| Air-conditioning                           | Legionellosis                      |
| Eschar, walking in scrub                    | Typhus                            |
| Rats/water, multisystem                     | Leptospirosis                     |
| Erythema chronicum migrans, neuritis, etc. | Lyme disease                     |

Table 2. Imported hepatitis—Heartlands Hospital, 1994.

| Hepatitis type | Number of cases |
|----------------|-----------------|
| A              | 2               |
| B              | 1               |
| C              | 2               |
| E              | 6               |

All these infections were acquired in the Indian subcontinent, except for one case of hepatitis C acquired in continental Europe

3 Bradley DJ, Warhurst DC, Blaze M, Smith V. Malaria imported into the United Kingdom in 1992 and 1993. *Communicable Disease Report Review*, 1994;4:R109-72.

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5 Joseph CA, Dedman D, Birtles R, Watson JM, Bartlett CLR. Legionnaires’ disease surveillance: England and Wales 1995. *Communicable Disease Report Review*, 1994;4:R109-11.

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