
Student health during overseas electives

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SUMMARY. Ill health is often encountered by travellers. As medical students are encouraged to spend their electives overseas, it was considered worthwhile to study the morbidity experience of University of Bristol medical students and to see whether any additional preventive measures could be identified for them. The findings suggest that the quality of advice could be further improved for medical students undertaking their electives abroad. Additional preventive measures were suggested by the students themselves. The suggestions may also be useful for other groups of travellers.

Introduction

THERE are wide variations in the reported incidence of ill health while abroad. One survey found that a quarter of American travellers experienced one or more symptoms of illness while travelling, whereas a comparable survey of Swiss travellers found that three-quarters had noted symptoms.¹ Among British travellers, about 1 in 100 package holidaymakers who take out an insurance policy make a claim.² The chances of experiencing a health problem while abroad and the nature of the problem depend to some extent on where one travels and stays, the duration of stay, and how the travel is undertaken. For example, insect-borne diseases are more common in rural areas than in cities,³ and the risks of hepatitis A⁴ and typhoid⁵ for the traveller are highest in certain parts of South-east Asia. The risk of illness is thought to increase as one travels towards the equatorial zone.⁶ People in the age group 21–30 years are reported to be most at risk.⁶ The increased risk for this age group may reflect a more adventurous outlook, especially in relation to eating and drinking habits while abroad.⁶ It has also been reported that persons who undertake overseas travel for 'study' purposes have the highest rates of gastroenteritis while those visiting relatives have the

lowest.⁷ As medical students are usually less than 30 years old and travel abroad for study purposes, they could be at particular risk of illness.

It has been stated that medical students should be 'properly introduced to the problem of health care and disease in developing countries before their visits',⁸ and that 'it is important to ensure that individual students are adequately briefed well before their elective visits by someone with recent knowledge of their destination [as] only thus can predictable and preventable risks — to all concerned — be avoided'.⁹ Arrangements for briefing students before they undertake their electives may well differ between medical schools. In the University of Bristol the facilities of the Student Health Service are readily available to medical students and requests for advice about overseas travel are welcomed. Details of the proposed trip are discussed and appropriate immunizations and vaccinations given. If necessary, this prophylaxis is given in collaboration with the Control of Infection Unit, Bristol and Weston Health Authority. Students are also offered two preventive medicine booklets published by the University of Bristol.^{10,11} They are encouraged to talk to other medical students who have previously been to the same area and to seek out medical staff who know that area. Such staff often help to arrange the elective. A register of overseas hospitals willing to have attached medical students is kept in the Dean's office.

During 1983, medical students at the University of Bristol expressed interest in studying the patterns of their personal health during the nine-week elective that they all undertake during the final undergraduate year.

Method

A semi-structured questionnaire was constructed in which students could describe their whereabouts during the elective, the nature of any illnesses they experienced when overseas, and whether any additional preventive advice would have been welcomed before they embarked on their electives. Owing to the diverse nature of individual electives and the wide range of countries and geographical

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localities where these were undertaken, suitable control populations could not be identified.

The questionnaire was given in the session 1982/83 to all final year students after their electives. They were asked to complete and return it anonymously in a sealed envelope.

Results

The response rate was 92 per cent (118/128). Of the students who replied, 102 undertook their elective overseas, and 69 per cent of these (70/102) experienced personal health problems while abroad. Illnesses experienced by two or more students are shown in Table 1.

Table 1. Health problems experienced by 70 medical students during their overseas electives.^a

	Number of episodes
Diarrhoea and/or vomiting for 3 days or less (NOS) ^b	34
Diarrhoea for one week or more (NOS) ^b	17
Amoebiasis ^c	5
Infected bites treated with antibiotics	5
Giardiasis ^d	4
Genital candidiasis	3
Bronchitis	2
Altitude sickness	2
Malaria	2
Acute mastoiditis	1
Anaphylactoid reaction to bedbug bites	1
<i>Ascaris</i> infestation	1
Condylomata acuminata	1
Conjunctivitis	1
Eczema	1
Fractured radius	1
Haemolytic anaemia (Maloprim-induced)	1
Jiggers (<i>Tunga penetrans</i>)	1
Creeping eruption (larva migrans)	1
Mumps	1
Paronychia	1
Pneumonia	1
Psychological trauma after being robbed at knifepoint	1
Sinusitis	1
Taenia cruris	1
<i>Taenia saginata</i> infestation	1
Tonsillitis	1
Total	92

^a Some of the students experienced more than one health problem.

^b NOS = not otherwise specified.

^c Amoebiasis: 3 cases diagnosed; 2 cases suspected.

^d Giardiasis: 2 cases diagnosed; 2 cases suspected.

Students had entered areas where there were epidemics of poliomyelitis and where diphtheria, typhoid and tuberculosis were endemic. Fortunately, none of the students contracted any disease not preventable by immunization or vaccination. Precautions were taken before travelling as appropriate: immunoglobulin typing

Table 2. Additional advice and information that students would appreciate being given before electives.

	Number of students who made suggestion
Tips for an emergency drug and first aid kit	14
Which insurance company provides the most comprehensive and beneficial policy	5
Hospital where elective being spent; to indicate the prevalence of tuberculosis in area and necessity of BCG vaccination	4
Prevention and management of rabies	4 ^a
Frequent reinforcement of instructions to boil all water, only eat fruit that can be and has been peeled, and avoid raw vegetables and fresh salads	4
A health advice pamphlet with reminders of necessity to start immunization courses at least one month before going overseas, and including notes on giardiasis, amoebiasis, and the management of chronic diarrhoea	3
Advice on specific techniques for sterilizing water ^b	2
A lecture linking bacteriology, clinical signs and symptoms, therapeutics, epidemiology, and prevention in developing countries	2
Indicate the desirability of talking to people who have already been to the locality	2
Mention availability of personal health checks following the elective	1

^a Does not include 11 other students who sought advice before elective.

^b Specific measures used to treat the water included: 8 drops of aqueous iodine solution (Lugol's solution) per litre of water, then wait 30 min before drinking; water sterilizing tablets; boiling water for 5 min and filtering; boiling water for 15 min before cooking vegetables, or soaking vegetables in Milton or iodine solution before eating them.

for hepatitis A and B. Bacille Calmette-Guérin (BCG) vaccination or Heaf's test for tuberculin sensitivity, and immunization against yellow fever, poliomyelitis, typhoid, cholera, tetanus and rabies. Only two students had a dental health check before leaving the UK. Dental problems were not, however, encountered by any student.

Of the students who went overseas, 33 per cent (34/102) would have liked additional advice before travelling; their suggestions are given in Table 2.

Not surprisingly, students who went to a developing country were more likely to have experienced health problems than students who spent their elective in a developed country. Only five students had health problems while undertaking their elective in a developed country. These problems were one case each of tinea cruris, genital candidiasis, vomiting and myalgia, eczema of the hands, and diarrhoea for five days (Table 3).

For 14 per cent (14/102) of students who went overseas, there was no written contact before travelling with staff where the electives would be spent. After reaching their destination, preventive medical help was given to only 31

Table 3. Comparison of experiences in developed and developing countries.

	Number of students		Total
	With health problems	Without health problems	
Developed countries ^a	5	13	18
Developing countries ^b	65	19	84
Total	70	32	102

^a Countries in Australasia, Europe and North America.

^b Countries in South America, South-east Asia, Africa and the West Indies.

$\chi^2 = 14.72; P < 0.001.$

per cent (32/102) of students. Twenty-three of these students were advised about precautions to be taken with local foodstuffs and beverages. For the other nine students, the assistance comprised checks of their vaccination status, suggestions for suitable clothing, advice about the influence of local climate on exercise tolerance, and enquiry about whether prophylaxis against malaria was being taken.

Discussion

Students are encouraged to travel abroad^{12,13} and there is heightened interest in the experience gained from medical student electives.¹⁴ If the numbers found in this study represent patterns in other medical schools, then substantial numbers of students each year are travelling to developing countries where there is an increased risk of ill health for visitors. It is therefore worthwhile to consider some of the problems identified in this study and whether any additional preventive measures can be recommended for student travellers.

One student traveller in Kenya and one in Tanzania reported contracting malaria, despite prophylaxis with pyrimethamine (Maloprim — Wellcome Medical Division) that had been recommended at the time. Both patients were promptly and successfully treated with chloroquine. As 230 of the 1,471 cases of malaria imported to Britain in 1982 were tourists or people who had been abroad on business trips or official duty,¹⁵ it is possible that medical students throughout Britain may represent an appreciable proportion of these cases. Advice about prophylaxis is readily available from the Malaria Reference Laboratory and it is difficult to know how cases amongst medical students could be further prevented. Malarial prophylaxis is also not without its own problems; one student in this study developed a haemolytic anaemia thought to have been induced by Maloprim.

Advice about rabies immunization was sought by nine students who went to India, one who travelled to Nepal, and one who went to Sierra Leone. Vaccination is expensive and the question of whom to vaccinate for foreign travel is therefore a vexed one. Rabies is now endemic 'in

about 100 countries and territories, in about 90 of which the disease persists in its most dangerous reservoir, the dog'.¹⁶ In many developing countries, particularly in cities, there is a large and growing population of stray dogs, and 'efforts to control them have often slowed down or stopped entirely'.¹⁶ Even in developed countries, dog bites are common: in the USA more than a million people are bitten by dogs each year;¹⁷ and in the UK among postal delivery staff alone there were 4,649 attacks by dogs in 1981.¹⁸ At the least, all overseas travellers should know of the preventive advice issued by the DHSS.¹⁹ This advice is undoubtedly preferable to that given casually to one student in this study on arrival in Peru: 'Throw sticks at rabid dogs that chase you.'

The same DHSS leaflet¹⁹ also advises travellers to visit their dentist 'if you will be away for more than a short time and you have any doubts about your teeth'. It is therefore interesting that although the leaflet was readily available in the Student Health Service for all students in this study, only two of them heeded the advice. Dental health of students is, however, likely to be good and fortunately no dental problems were reported.

Travellers are advised to take a first-aid kit with them¹⁹ and suggestions have been made for the contents of such a kit.²⁰ In this study, 14 students would have appreciated advice about what drugs and equipment to carry with them. The suggestion about carrying antihistamines to ease severe irritation or urticarial lesions resulting from bites²⁰ can be reinforced from our findings; the student who reported an anaphylactoid reaction to bedbug bites, with generalized oedema and pruritis, was travelling on a train in South-east Asia at the time and is indebted to another traveller who had a supply of antihistamines.

As 'travel expands the mind and loosens the bowels'²¹ it is not surprising that 59 per cent (60/102) of students developed gastrointestinal symptoms while abroad (Table 1). Although the illness only lasted three days or less in 34 of these students, the short duration may not reflect severity; one student reported that after a 'doubtful' meal in the Transkei, a night of extensive vomiting was followed by admission to the intensive care unit where five litres of intravenous fluid replacement were required during the next 24 hours. More usually, traveller's diarrhoea is a minor inconvenience with an average natural course of 93 hours.²¹ Commonsense measures to avoid infection are considered preferable to widespread use of antibiotic prophylaxis.²²⁻²⁴ The nine students in this study with proven or suspected amoebiasis or giardiasis were all treated, or treated themselves, with metronidazole. From the clinical details given, and from dosages given in the Data Sheet Compendium 1981-82,²⁵ this drug was apparently taken in the correct dosage by two students and in too low a dosage by four students. Insufficient information was given by the remaining three students for a classification to be made. In addition, three of the 17 students with diarrhoea for one week or more not otherwise specified also took metronidazole. Fortunately, and

despite in some instances metronidazole being taken in the incorrect dosage or without a definitive diagnosis, the symptoms of all 12 students resolved. Non-specific management of diarrhoea experienced for one week or more included loperamide hydrochloride (Imodium — Janssen), diphenoxylate hydrochloride with atropine sulphate (Lomotil — Gold Cross), kaolin and morphine mixture BP, and codeine phosphate. These findings for gastrointestinal problems indicate that students need to know in advance the risks of inadequately prepared food and untreated water supplies, the merits of different methods for sterilizing water, when to seek help for any gastrointestinal symptoms, and the preferred pharmacological management of diarrhoea.

This study has identified additional preventive advice that should be available to students before their overseas travel. A lecture has since been introduced into the Bristol undergraduate medical curriculum nine weeks before the students are due to leave for their electives. At this lecture findings of the study are presented, notes about preventive advice for travellers are given to each student, attention is drawn to three publications about health and overseas travel,^{3,11,26} suggestions are made for the contents of a first-aid kit that might be carried by persons who are likely to be more than 24 hours away from medical assistance during any stage of their trip, and they are informed about personal health checks which can be arranged on return to the UK. Students are also encouraged to read the DHSS leaflets on foreign travel.^{19,27} It may be worthwhile extending the availability of these additional preventive measures to other groups of travellers.

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Antibiotics and acute bronchitis

Acute bronchitis is usually defined clinically, based on history and physical examination, as acute cough with sputum in the absence of pneumonia. Antibiotics are often prescribed empirically, usually without laboratory confirmation of pathogenesis. Despite the wealth of data demonstrating the usefulness of antibiotics in treatment of acute exacerbations of chronic bronchitis, there are few placebo-controlled data to support the routine use of antibiotics in acute bronchitis.

Sixty-seven previously healthy patients with acute bronchitis were randomized and treated with either a fixed dose of trimethoprim and sulfamethoxazole or placebo for seven days. All outcomes examined showed a trend favoring the use of antibiotic, with statistically significant differences for cough, night cough, mean temperature, and use of antihistamines or decongestants. Night cough occurred on 84 per cent of nights in the control group versus 56 per cent in the antibiotic group ($P=0.003$). Cough occurred on 99 per cent of days for patients in the control group versus 93 per cent of days for patients in the antibiotic group ($P=0.05$). Mean temperature over the seven nights was 37.3°C in the control group versus 36.9°C in the antibiotic group ($P=0.004$). The use of antihistamines and decongestants was reduced from 32 per cent of days in the control group to 6 per cent of days in the antibiotic group ($P=0.005$). Patients in the antibiotic group worked 73 per cent of days versus 55 per cent of days for patients in the control group, which was significant when patients were stratified by the appearance of their sputum on Gram stain ($P=0.006$). Smoking history was not found to help predict the response to antibiotic therapy.

Source: Franks P, Gleiner JA. The treatment of acute bronchitis with trimethoprim and sulfamethoxazole. *J Fam Pract* 1984; **19**: 185-190.