Tourists' Knowledge of Leishmaniasis

Background

Cutaneous leishmaniasis is a parasitic disease transmitted by infected sand flies. An ulcerous skin lesion develops at the bite site which, after a number of weeks, is usually self-healing leaving a scar the size of the ulcer. Many overseas tourism destination are located in leishmaniasis endemic areas and numerous tourists have returned home with a scar reminding them of their infection.

One parasite species, *Leishmania braziliensis*, can progress to a mucocutanous stage of the disease where infected individuals develop mucosal lesions in nose and mouth. Without treatment, these lesions can lead to disfiguring tissue destruction. *L. braziliensis* is endemic in Central and South American rainforests, coinciding with the geographical location of many national parks and hence tourism destinations [1,2]. While leishmaniasis is a disease of the local population, tourists can be infected, even if they have been in the region for only a very short time [1-7]. The only prevention from infection is not to be

bitten. Therefore, travellers to endemic areas need to be advised of the existence of the disease and the preventive measures. However, the lack of inclusion of such information in travel health advice has been deplored in the literature [1, 8].

In 1999, an intervention study commenced investigating knowledge and preventive behaviour of tourists to Manu National Park in Peru in relation to leishmaniasis while testing an information leaflet [9]. Data were collected using a pre and post visit questionnaire (n = 373, experimental and control group). However, there was a considerable number of tourists visiting Manu during the time of the study who completed only one of the two questionnaires and were, therefore, excluded from the intervention study. Nevertheless, the questions posed in the pre travel questionnaire are of interest on their own because they cover responses to knowledge on leishmaniasis and preventive measures.

Method

Therefore, all pre travel questionnaires (n = 552; 373 from the intervention study and an additional 179 from those only

completing this form) were re-analysed to take advantage of the now larger sample. The descriptive analysis was conducted with SPSS.

Results

The demographic data of this sample are presented in Table 1.

TABLE 1

Of 492 participants, 472 (95.9%) claimed to have sought travel health advice for this trip. However, 455 (93.4%, n = 487) did not recall being advised of cutaneous leishmaniasis. Of the remaining 32 (6.6%) who knew about the disease, 20 (62.5%) offered further information relating to their knowledge (Table 2). The responses relied on recall, no triggering forced-choice questions were used.

TABLE 2

Some clearly confused the disease with Chagas or schistosomiasis. When asked about the tourists' knowledge of preventive measures, 17 (63%) out of 27 tourists were aware of

correct procedures (Table 3).

TABLE 3

The wrong answers given emphasise the need for comprehensive advice. Drinking clean water and eating cooked food was seen as a measure against leishmaniasis, as was not walking barefoot and staying away from sandbanks. Again, the responses are based knowledge recall. Interestingly, when correlating the responses on disease and prevention with the individual occupational groups a) doctors, health professionals, scientists and b) all other occupations, there was no significant difference in the accuracy of the accounts.

Discussion

The majority of participants had sought travel health advice before their trip but few were aware of leishmaniasis, fewer could provide correct information on disease and prevention. While not every Peru traveller will plan a visit to the rainforest, the possibility should be considered when giving health advice on a destination in an endemic region.

The preventive measures against sandfly bites are the same as for other insects. Therefore, it can be assumed that knowledge about yet another arthropod transmitted disease may not alter the generally accepted practices of preventing insect bites. However, knowledge of the disease may make a big difference when tourists develop a skin ulcer and can then advice their physician about the possibility of an infection. The unfamiliarity of physicians with leishmaniasis has been discussed [1, 10] and could lead to misdiagnosis and delayed treatment.

Conclusion

Information on leishmaniasis should be included in travel health advice to clients travelling to endemic areas so that they are aware of the disease and the preventive measures, and that returning travellers can alert their physicians about the possibility of an infection.

References

1. Herwaldt, B, Stokes, S, Juranek, D. American cutaneous leishmaniasis in U.S. travelers. Ann Intern Med 1993; 118:779-784.

2. Melby, P, Kreutzer, R, McMahon-Pratt, D, et al. Cutaneous leishmaniasis: review of 59 cases seen at the National Institutes of Health. Clin Infect Dis 1992; 15:924-937.

3. Blum, J, Junghanss, T, Hatz, Ch. Irrwege in der Diagnostik kutaner und mukokutaner Leishmaniosen. Schweiz Rundsch Med 1994; 83:1025-1029.

4. Calleri, G, Lipani, F, Gaiottino, F, Caramello, P. Leishmaniosi cutanea a lesioni multiple dopo un soggiorno in America Centrale. Minerva Med 1996; 87:249-251.

5. Willems, J, Schmidt, S, Greer, K, et al. Sporotrichoid cutaneous leishmaniasis in a traveler. South Med J 1997; 90:325-327.

6. Grimm, F, Gessler, M, Brun, R. Isolation and characterisation of Leishmania parasites imported into Switzerland - a retrospective study. Parasitol Res 1996; 82:563-565.

7. Rosbotham, J, Corbett, E, Grant, H, et al. Imported mucocutaneous leishmaniasis. Clin Exp Dermatol 1996; 21:288-290.

8. Caumes, E, Carrièrre, J, Guermonprez, G, et al. Dermatoses associated with travel to tropical countries: a prospective study of the diagnosis and management of 269 patients presenting to a tropical disease unit. Clin Infect Dis 1995; 20:542-548.

9. Bauer, I. Knowledge and behaviour of tourists to Manu National Park/Peru in relation to leishmaniasis. J Travel Med; in

print.

10. Sanchez, J, Diniega, B, Small, J, et al. Epidemiologic investigation of an outbreak of cutaneous leishmaniasis in a defined geographic focus of transmission. Am J Trop Med Hyg 1992; 47:47-54.

Table 1 Description of Sample (n = 552)

	N	%
Gender (n = 547)		
Female	280	51.2
Male	267	46.8
Age (n = 487) (mean/mode/median)	37/28/33 years	
Occupation (n = 526)		
Doctor	26	4.9
Nurse	16	3.0
Other health professional	14	2.7
Biologist	7	1.3
Other scientist	13	2.5
Veterinarian	6	1.1
Other occupations	444	84.4
First visit to Manu (n = 492)		
Yes	487	99.0
Visited other tropical rainforests (n = 492)		
Yes	163	33.1
No	329	66.9

Table 2 Knowledge of disease (multiple responses, 20 valid cases)

	Count	% of responses	% of cases
Sandfly transmits disease	11	36.7	55.0
Other insect	2	6.7	10.0
Only knows disease exists	10	33.3	50.0
Incubation period	1	3.3	5.0
Bites don’t heal	3	10.0	15.0
Tissue destruction	3	10.0	15.0
Total responses	30	100.0	150.0

Table 3 Knowledge of preventative measures (n = 26) (open answers, no forced choice answers!)

	N	%
Protective clothes	2	7.7
Repellent	6	23.1
Protective clothes + repellent	9	34.6
Wrong answer	9	34.6
Total	26	100.0