

## Correspondence

### Prevalence of visceral leishmania & HIV co-infection in Nepal

Sir,

Visceral leishmaniasis (VL, kala-azar) is a worldwide disseminated intracellular infection mainly caused by *Leishmania donovani*, *L. chagasi* or *L. infantum*. Leishmaniasis is endemic in 88 countries on five continents - Africa, Asia, Europe, North America and South America<sup>1</sup>. New cases of leishmaniasis continue to occur annually, 90 per cent of which are in five countries: Bangladesh, Brazil, India, Nepal and Sudan<sup>2</sup>. The incidence of leishmaniasis as an opportunistic infection in AIDS patients has been increasing since the first case of HIV-*Leishmania* co-infection was described in 1985<sup>3</sup>. This duo of disease produces cumulative deficiency of the immune response since *Leishmania* parasites and HIV destroy the same cells, thus exponentially increasing disease severity and consequences.

Visceral leishmaniasis has been reported from 12 districts of Nepal. Approximately more than 5.5 million people in Nepal are believed to be at risk of the disease. Since 1980, 14685 cases and 215 deaths from this disease have been reported and this figure may be lower than actual cases. The case incidence is about 43/100,000 population at risk and case fatality rate ranges from 0.84 to 1.75 per cent<sup>4</sup>. HIV/AIDS is also emerging as a major public health problem in Nepal. Recently drug resistant cases of VL and some cases of post-kala-azar dermal leishmaniasis (PKDL) were also reported<sup>4</sup>. VL endemic districts, the HIV situation is made more complex by movement of people

looking for job, drug abuse and increase in commercial sex trade. Therefore, the number of cases of *Leishmania*/HIV co-infection is expected to rise in Asia including in Nepal owing to the simultaneous spread of the two infectious diseases and their increasingly overlapping geographical distribution.

SACTS (STI/AIDS Counselling and Training Service), a non-profit making non-governmental organization for prevention of sexually transmitted infections (STIs) and acquired immune deficiency syndrome (AIDS) conducted this study to determine the presence of HIV-*Leishmania* co-infection in some endemic districts *e.g.*, Janakpur, Siraha, Saptari, Jhapa, Biratnagar. The study included 39 hospital-based cases, 415 field-based cases and 400 HIV- surveillance based cases during June 1, 2003 to May 31, 2004. In hospital-based study, serum samples and bone marrow were collected from clinically suspected cases of VL from patients admitted to some hospitals. Diagnosis of VL was established by demonstration of parasite (LD bodies) in bone marrow and by serological tests (K39 antigen dipstick). Also samples were screened for HIV. In field study, serum samples were collected from clinically suspected cases. Patients having history of fever for 15 days or more and clinically palpable spleen were selected randomly. All serum samples positive for formol gel test and K39 antigen dipstick were screened for HIV. In HIV-surveillance based study; all serum samples

**Table.** Age and sex-wise distribution of study population

Age (yr)	Sample			VL positive			HIV positive		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
15-19	52	30	82	6	2	8	-	-	-
20-29	342	60	402	51	26	77	1	2	3
30-39	209	56	265	36	16	52	3	1	4
40-49	64	20	84	2	1	3	1	-	1
49+	20	1	21	-	-	-	-	-	-
Total	687	167	854	95	45	140	5	3	8

positive for HIV were subjected to formol gel test<sup>5</sup> and K39 antigen using the InBios International Inc (Seattle WA 98104, USA) dipstick test for VL<sup>6</sup>. Serum samples were collected from private clinics, SACTS and prevalence study. Two different ELISA test Kits screened all samples for HIV.

The one ELISA was Bioelisa HIV 1+2 (rec), Biokit, SA; 08186. Leissad Amunt (Barcelona, Spain). The other one was Genedia HIV1/2 ELISA 3.0, Green Cross Life Science Corp. (Korea).

The study population consisted of 854 individuals (687 males, 167 females) in the age group of 15 yr to 49 plus years. Of the 854 samples, 140 were found positive for VL; of 140 these, 8 were also positive for HIV. Of the 8 HIV positive cases, 5 were male and 3 female. VL cases were highest among age group 20-39 yr (Table).

Of the 39 clinically suspected cases admitted to the hospitals, 16 were positive for LD bodies and one of these was HIV positive. These 16 positive cases were also positive by K39 antigen dipstick. Of the 415 samples collected from field, 114 were positive by K39 antigen dipstick, and of these 114, 5 were positive for HIV. In 400 HIV surveillance samples, 10 were positive for VL and two for HIV.

Our study revealed VL and HIV co-infection was detected among 5 males and 3 females. Among 5 males, 4 were migrant workers and one was injecting drug users. The three females were commercial sex workers. All of them were from VL endemic areas of Eastern and Central region *e.g.*, Janakpur, Siraha, Saptari, Jhapa, Biratnagar.

Sharing of needles can transmit both *Leishmania* and HIV infection. Gradual increase of drug use by young people in endemic areas makes the situation more complex. Co-infected patients can harbour large number of parasites making them a risk of becoming reservoir<sup>7</sup>.

In conclusion, there is a need to monitor VL/HIV co-infection especially in VL endemic areas in Nepal to properly assess the burden of the problem. Also advocacy programme for public education on VL/HIV co-infection should be integral part of both HIV as well as VL prevention programmes.

### Acknowledgment

The authors acknowledge Dr Philippe Desjeux, Medical Officer (retired) Trypanosomiasis and Leishmaniasis unit, Division of Control of Tropical Disease, World Health Organization, Geneva for supporting this study, and thank our co-workers from hospitals and field for technical assistance.

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