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Epidemiology of Leishmaniasis Part II

Patr I of this article was published in the last issue of the Weekly Epidemiological Report in which we discussed history, risk factors, mode of transmission and the clinical picture of leishmaniasis. In this article we shall discuss the diagnosis, treatment, prevention and social impact of the disease.

HOW IS LEISHMANIASIS DIAGNOSED?

There is no effective laboratory screening tests for leishmaniasis. Therefore, diagnoses involves a combination of compatible symptoms, objective signs, and laboratory findings.

Giemsa-stained tissue samples remain the most commonly used technique in the world today for diagnosis. A local pathologist should review the results. Serum antibody detection (serology) can prove useful in diagnosing visceral leishmaniasis but is of no use in the cutaneous disease. Other diagnostic techniques exist that allow parasite detection and species identification by special culture and microscopy, biochemical (isoenzymes), immunologic (immunoassays), and molecular PCR approaches.

Cutaneous leishmaniasis is diagnosed by sampling the skin lesion, usually with a biopsy or scraping. In visceral leishmaniasis, diagnosis requires invasive samples (bone marrow, liver, lymph nodes) and parasitological diagnosis can be challenging.

TREATMENT:

Cutaneous leishmaniasis generally heals spontaneously in 5-12 months in non-immunocompromised patients. Treatment depends on whether the patient is immunocompromised and/or at risk for mucosal leishmaniasis (in which case, treatment is provided) and on site and severity of lesions, with metastatic lesions treated and unobtrusive lesions not always treated. First-line treatment is IM or IV sodium stibogluconate.

WHAT WILL HAPPEN IF LEISHMANIASIS IS LEFT UNTREATED?

The skin sores of cutaneous leishmaniasis may heal on their own, but this can take months or even years. The smallest lesions (under 10 mm) may not require treatment, just "watchful waiting." The sores can leave ugly scars. If not treated, infection that started in the skin can rarely spread to the nose or mouth and can cause sores there (mucocutaneous leishmaniasis), which can be quite disfiguring. This is seen in some of the types of Leishmaniasis found in Central and South America.

Visceral leishmaniasis can cause serious illness (enough to require hospitalization) but does not usually cause death in people with healthy immune systems and good nutrition. In some, visceral leishmaniasis can be a milder illness. On the other hand, individuals with degraded immune system functioning are at higher risk for serious or even fatal illness.

PREVENTION AND CONTROL

1. Case management : Detect cases systematically and treat rapidly. This applies to all forms Leishmaniasis and is one of the important measures to prevent spread of the disease.

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2. Prevention of sand fly bites ; The best way to prevent ac quiring of Leishmaniasis is to avoid sand fly bites.

- Stay away from shrub jungles, and avoid outdoor activities as much as possible, especially from dusk to dawn when the sand flies are mostly active.
- Use bed nets (specially treated with permetrin) when ever possible during the night and day sleeping.
- When outside wear long sleeve shirts, long pants, and whenever possible socks.
- Application of insect repellents in exposed areas also can be useful. Care must be taken in children.
- Treatment of bed nets with permetrin is known to be ef fective for several months to repel the sand fly.

3. Suppression of the vectors : Residual insecticides which are used to control mosquitoes can be used effectively against the sand fly too.

4. Eliminate rubbish heaps and other sand fly breeding plases

5. Suppression of the reservoir: Further research has to be carried out to establish local reservoir animals.

NOTIFICATION

If any cases of Leishmaniasis are suspected/confirmed , please notify to the Epidemiologist and to the Regional Epidemiologist.

LEISHMANIASIS AND HIV CO-INFECTION

In a particularly ominous trend, the spread of HIV infection is bringing the severe visceral form of leishmaniasis to new geographical areas and changing the epidemiology of this disease in dangerous ways. The two infections coexist in a deadly synergy. Where leishmaniasis occurs in urban areas, conditions often favour explosive epidemics - thus transforming leishmaniasis from a sporadic to an epidemic threat. In persons infected with HIV, leishmaniasis accelerates the onset of AIDS by cumulative immunosuppression and by stimulating replication of the virus. The epidemiological significance of asymptomatic carriers of the parasite has also been amplified by the advent of HIV, as co-infection rapidly activates disease in parasite carriers. Sharing of needles by intravenous drug users contributes to the spread of leishmaniasis as well as HIV.

REPORTED LEISHMANIASIS OUT BREAK IN ANURADHAPURA AND MATARA DISTRICTS

According to the report submitted by the Regional Epidemiologist Anuradhapura, from January to July 2008, total number of 61 patients has been treated at the Dermatology Unit of the Teaching Hospital Anuradhapura for leishmaniasis. Out of this 60 had cutanious leishmaniasis and one had mucocutanious leishmaniasis.
Majority [36%] of the patients were from Thalawa MOH area and 14% from MOH area NPE Anuradhapura

According to the report submitted by the Regional Epidemiologist Matara, from January to July 2008 a total number of 113 patients has been treated at the Dermatology Unit of the General Hospital Matara for cutanious leishmaniasis.
Majourity [58%] of the patients were from Dickwella MOH area and 18% from MOH area Devinuwara

CONTROL MEASURES TAKEN AT ANURADHAPURA AND MATARA DISTRICTS

- Strengthen the leishmaniasis surveillance within the district with the help of Dermatology clinics.
- Identify the high risk areas
- Strengthen the vector surveillance activities in the high risk areas
- Carry out focal spraying houses and cattle sheds in high risk locations
- Organize awareness programmes to medical staff
- Organize awareness programmes to public

Sources

1. LEISHMANIASIS Information for Clinicians. A Collaborative Effort of DHCC, AFIOH/RSR,DHSD, USACHPPM, & WRAMC.

2. Leishmaniasis fact sheet : The disease and its epidemiology. [http:// www.leishmaniasis\WHO The disease and its epidemiology.htm]

3. Urbanization: an increased risk factor for leishmani asis .*Weekly Epidemiological Record*, N° 77, 44, 1 November 2002 [http://www.who.int/wer]

4 Leishmaniasis fact sheet : Burden of the disease. [http:// www.leishmaniasis\WHO Burden the dis ease .htm]

This article was compiled by Dr Darshani Abeysekera - Epidemiology Unit Colombo

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Table 1: Vaccine-preventable Diseases & AFP

5th - 11th July 2008 (28thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	02 KL=2	01 KD=1	00	00	00	01 KR=1	00	00	00	03	01	57	49	+16.2%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	01 CO=1	00	00	01 VA=1	00	00	00	00	00	02	00	62	41	+51. 2%
Tetanus	00	00	00	00	00	00	00	00	00	00	01	19	19	0.0%
Whooping Cough	00	00	00	00	00	01 AM=1	00	00	00	01	01	24	23	-4.3%
Tuberculosis	75	07	07	11	07	00	02	05	73	187	350	4730	5594	-15.4`%

Table 2: Newly Introduced Notifiable Diseases

5th - 11th July 2008 (28thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Chicken-pox	20	09	13	00	09	04	01	07	14	77	41	3113	1967	+58.6%
Meningitis	02 KL=2	03 KD=1 ML=2	04 GL=2 HB=1 MT=1	00	01 KM=1	02 KR=2	01 PO=1	02 BD=1 MO=1	00	15	25	803	195	+311.6%
Mumps	04	08	13	00	08	05	02	06	05	51	24	1453	832	+74.7%

Key to Table 1 & 2

Provinces: W=Western, C=Central, S=Southern, N=North, E= East, NC=North Central, NW=North Western, U=Uva, Sab=Sabaragamuwa.

DPDHS Divisions: CB=Colombo, GM=Gampaha, KL=Kalutara, KD=Kandy, ML=Matale, NE=Nuwara Eliya, GL=Galle, HB=Hambantota, MT=Matara, JF=Jaffna, KN=Killinochchi, MN=Mannar, VA=Vavuniya, MU=Mullaitivu, BT=Batticaloa, AM=Ampara, TR=Trincomalee, KM=Kalmunai, KR=Kurunegala, PU=Puttalam, AP=Anuradhapura, PO=Polonnaruwa, BD=Badulla, MO=Moneragala, RP=Ratnapura, KG=Kegalle.

Table 3: Laboratory Surveillance of Dengue Fever

5th– 11th July 2008 (28thWeek)

Samples	Number tested		Number positive *		Serotypes									
					D_1		D_2		D_3		D_4		Negative	
	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH
Number for current week	05	09	01	00	00	00	01	00	00	00	00	00	00	00
Total number to date in 2008	103	109	08	19	00	00	05	08	01	06	00	00	02	00

Sources: Genetech Molecular Diagnostics & School of Gene Technology, Colombo [GT] and Genetic Laboratory Asiri Surgical Hospital [AH]

* Not all positives are subjected to serotyping.

NA= Not Available.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

National Control Program for Tuberculosis and Chest Diseases: Tuberculosis.

Table 4: Selected notifiable diseases reported by Medical Officers of Health

5th - 11th July 2008 (28thWeek)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephal-itis		Enteric Fever		Food Poisoning		Leptos-pirosis		Typhus Fever		Viral Hepatitis		Human-Rabies		Re-turns Re-ceive
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	41	1010	04	100	00	07	02	59	04	69	08	241	00	02	02	73	00	01	**92**
Gampaha	06	599	02	101	00	14	02	33	01	67	03	240	00	05	03	82	00	03	**79**
Kalutara	05	306	05	206	00	08	01	44	00	16	09	292	00	02	00	25	00	00	**92**
Kandy	04	143	15	165	00	05	01	37	06	51	08	274	02	62	01	88	00	01	**76**
Matale	02	67	02	138	00	02	01	34	00	04	09	571	00	01	00	21	00	00	**92**
Nuwara Eliya	01	16	07	151	00	02	01	189	00	110	00	34	00	34	03	86	00	01	**92**
Galle	03	69	02	108	01	12	01	12	00	43	02	214	00	10	00	06	00	03	**82**
Hambantota	01	58	03	56	00	04	00	06	00	07	00	68	03	59	00	05	00	00	**91**
Matara	12	157	03	117	01	06	00	23	00	02	04	217	03	124	00	08	00	01	**94**
Jaffna	00	52	04	83	00	01	02	210	01	09	00	00	00	142	03	28	00	00	**63**
Kilinochchi	00	00	00	14	00	00	00	01	00	00	00	02	00	00	00	01	00	00	**25**
Mannar	00	25	00	11	00	06	04	115	00	00	00	00	00	01	01	12	00	00	**25**
Vavuniya	00	10	03	38	00	02	01	05	00	13	00	05	00	01	00	04	00	00	**75**
Mullaitivu	00	00	00	04	00	00	00	08	00	12	00	00	00	01	00	06	00	00	**40**
Batticaloa	00	85	05	70	00	03	01	20	00	19	00	04	00	01	01	79	00	05	**73**
Ampara	02	24	25	193	00	00	00	05	00	00	00	16	00	00	00	05	00	00	**86**
Trincomalee	00	173	05	63	00	00	01	12	00	12	01	25	00	15	00	12	00	00	**70**
Kurunegala	02	233	09	156	00	11	01	36	00	13	02	163	00	16	06	42	00	04	**83**
Puttalam	04	262	00	48	00	08	00	127	00	21	00	25	00	32	00	25	00	03	**67**
Anuradhapur	00	109	00	50	01	09	00	08	01	06	00	219	00	10	00	10	00	02	**58**
Polonnaruwa	01	55	01	81	00	01	00	21	00	07	00	54	00	01	00	17	00	00	**86**
Badulla	04	56	22	285	00	04	08	86	00	13	00	31	08	79	03	76	00	01	**93**
Monaragala	02	44	09	256	00	02	00	28	00	110	00	84	04	71	02	25	00	00	**64**
Ratnapura	11	183	06	175	01	23	00	41	00	43	02	119	01	74	00	42	00	00	**75**
Kegalle	06	270	07	220	00	23	01	46	00	02	02	201	01	48	02	396	01	01	**91**
Kalmunai	00	29	08	184	00	02	00	09	00	12	00	00	00	02	00	19	00	00	**77**
SRI LANKA	**107**	**4035**	**147**	**3073**	**04**	**155**	**28**	**1215**	**13**	**661**	**50**	**3099**	**22**	**793**	**27**	**1193**	**01**	**26**	**78**

Source: Weekly Returns of Communicable Diseases (WRCD).

***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.

****Timely** refers to returns received on or before 19 July, 2008 Total number of reporting units =238. Number of reporting units data provided for the current week: 240

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