WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health

231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

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Lymphatic filariasis (Part -I)

This is the first in a series of two articles on Lymphatic filariasis.

Background

- Nearly 1.4 billion people in 73 countries worldwide are threatened by lymphatic filariasis, a parasitic infection that leads to a disease commonly known as elephantiasis.
- Over 120 million people are currently infected, with about 40 million disfigured and incapacitated by the disease.
- Lymphatic filariasis can result in an altered lymphatic system and the abnormal enlargement of body parts, causing pain, severe disability and social stigma.

To interrupt the spread of the infection WHO recommends an annual large-scale treatment with single doses of 2 medicines to all eligible people where the infection is present.

The Disease

Lymphatic filariasis, commonly known as elephantiasis, is a neglected tropical disease. Infection occurs when filarial parasites are transmitted to humans through mosquitoes. Infection is usually acquired in childhood causing hidden damage to the lymphatic system.

The painful and profoundly disfiguring visible manifestations of the disease, lymphoedema, elephantiasis and scrotal swelling occur later in life and lead to permanent disability. These patients are not only physically disabled, but suffer mental, social and financial losses contributing to stigma and poverty.

Currently, more than 1.4 billion people in 73 countries are living in areas where lymphatic filariasis is transmitted and are at risk of being infected. Approximately 80% of these people are living in the following 10 countries: Bangladesh, Democratic Republic of Congo, Ethiopia, India, Indonesia, Myanmar, Nigeria, Nepal, Philippines and the United Republic of Tanzania.

Globally, an estimated 25 million men suffer with genital disease and over 15 million people are afflicted with lymphoedema. Eliminating lymphatic filariasis can prevent unnecessary suffering and contribute to the reduction of poverty.

Cause and transmission

Lymphatic filariasis is caused by infection with parasites classified as nematodes (roundworms) of the family Filariodidea. There are 3 types of these thread-like filarial worms:

- *Wuchereria bancrofti*, which is responsible for 90% of the cases

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- *Brugia malayi*, which causes most of the remainder of the cases

B. timori, which also causes the diseases.

Adult worms lodge in the lymphatic system and disrupt the immune system. The worms can live for an average of 6-8 years and, during their life time, produce millions of microfilariae (immature larvae) that circulate in the blood.

Mosquitoes are infected with microfilariae by ingesting blood when biting an infected host. Microfilariae mature into infective larvae within the mosquito. When infected mosquitoes bite people, mature parasite larvae are deposited on the skin from where they can enter the body. The larvae then migrate to the lymphatic vessels where they develop into adult worms, thus continuing a cycle of transmission.

Lymphatic filariasis is transmitted by different types of mosquitoes of the genera *Aedes, Anopheles, Culex,* or *Mansonia* are the intermediate hosts and vectors of all species that cause lymphatic filariasis.The *Culex* mosquito, widespread across urban and semi-urban areas; Anopheles mainly in rural areas, and Aedes, mainly in endemic islands in the Pacific.

Symptoms

Lymphatic filariasis infection involves asymptomatic, acute, and chronic conditions. The majority of infections are asymptomatic, showing no external signs of infection. These asymptomatic infections still cause damage to the lymphatic system and the kidneys as well as alter the body's immune system.

Acute episodes of local inflammation involving skin, lymph nodes and lymphatic vessels often accompany the chronic lymphoedema or elephantiasis. Some of these episodes are caused by the body's immune response to the parasite. However most are the result of bacterial skin infection where normal defences have been partially lost due to underlying lymphatic damage.

When lymphatic filariasis develops into chronic conditions, it leads to lymphoedema (tissue swelling) or elephantiasis (skin/ tissue thickening) of limbs and hydrocele (scrotal swelling). Involvement of breasts and genital organs is common. Such body deformities lead to social stigma, as well as financial hardship from loss of income and increased medical expenses. The socioeconomic burdens of isolation and poverty are immense.

Differentials in the diagnosis of lymphatic filariasis

- Bacterial or fungal lymphadenitis - eg. sporotrichosis resulting from *Sporothrix schenckii* infection
- Recurrent streptococcal lymphadenitis - relapsing erysipelas
- Congenital or hereditary lymphoedema - eg. Milroy syndrome
- Nonfilarial elephantiasis - Highlands of East Africa
- Congenital hydrocele
- Epididymal cysts
- Carcinoma of testis and/or scrotum
- Lymphosarcoma

How to Diagnose

The microfilariae of all species that cause lymphatic filariasis are detected in blood. Capillary finger-prick or venous blood is used for thick blood films. Venous blood also can be concentrated or passed through a nuclepore filter before being examined microscopically.

Full blood count-Eosinophilia is marked in all forms of patent filarial infection.

Detection of filarial antigen in the peripheral blood

Detection of filarial antibodies in the peripheral blood

Sources

Lymphatic filariasis- available at *http://www.who.int/mediacentre/factsheets/fs102/en/*

Filariasis- available at *http://emedicine.medscape.com/article/217776-overview#a0101*

Compiled by Dr. C U D Gunasekara of the Epidemiology Unit.

to be continued

Table 1: Selected notifiable diseases reported by Medical Officers of Health 04th – 10th Oct 2014 (41st Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	156	10873	0	118	0	11	0	88	0	172	6	129	0	3	2	42	0	0	4	349	1	50	0	3	**75**	**25**
Gampaha	97	5767	5	118	0	11	0	32	0	24	14	261	0	19	9	213	0	5	3	243	1	57	0	2	**67**	**33**
Kalutara	29	2143	3	139	4	10	2	46	0	59	13	250	0	2	1	19	0	1	4	210	2	64	0	0	**100**	**0**
Kandy	48	1340	0	79	0	6	0	20	0	17	1	40	1	73	8	152	0	1	0	162	1	25	0	5	**96**	**4**
Matale	14	380	0	57	0	2	1	18	0	17	0	33	0	2	8	123	0	1	1	48	0	45	1	27	**77**	**23**
NuwaraEliya	5	240	2	218	0	3	0	17	0	69	0	23	0	55	0	30	0	0	5	110	0	29	0	0	**85**	**15**
Galle	16	880	2	103	0	6	0	8	0	33	2	145	2	83	0	6	0	0	6	361	2	46	0	3	**95**	**5**
Hambantota	7	530	1	42	0	4	0	10	0	16	1	77	1	64	0	16	0	0	0	128	0	40	5	300	**100**	**0**
Matara	19	525	1	84	0	4	0	23	0	18	3	74	1	50	1	34	0	0	4	151	2	29	1	74	**100**	**0**
Jaffna	35	949	29	477	0	7	11	189	3	59	0	8	0	272	0	8	0	0	0	120	2	50	0	1	**100**	**0**
Kilinochchi	0	46	4	84	0	1	1	23	0	0	0	1	0	19	0	0	0	0	0	15	0	6	0	11	**50**	**50**
Mannar	12	112	1	36	0	10	0	34	0	9	0	4	0	24	0	1	0	0	0	10	0	7	0	4	**60**	**40**
Vavuniya	2	108	5	48	0	1	6	36	0	22	0	9	0	6	0	5	0	0	0	11	0	14	1	3	**50**	**50**
Mullaitivu	2	87	0	52	0	0	0	11	2	20	0	8	0	11	0	0	0	2	0	5	0	5	0	7	**60**	**40**
Batticaloa	7	673	9	258	0	3	2	34	0	30	1	16	0	2	0	7	0	1	3	52	0	6	0	0	**93**	**7**
Ampara	2	128	0	61	0	1	0	3	0	10	0	15	0	12	0	5	0	1	2	88	0	8	0	10	**86**	**14**
Trincomalee	1	505	0	43	0	1	0	4	0	9	0	16	0	20	0	2	0	0	7	94	0	14	2	7	**75**	**25**
Kurunegala	62	1708	4	115	0	26	0	17	1	26	5	84	1	43	2	52	0	1	8	349	0	64	2	119	**93**	**7**
Puttalam	11	537	0	60	0	2	0	12	0	11	0	58	0	21	0	4	0	3	1	74	1	23	0	6	**62**	**38**
Anuradhapura	8	432	0	143	0	5	0	3	0	45	0	80	0	27	0	10	0	0	2	196	0	43	9	351	**58**	**42**
Polonnaruwa	7	433	0	40	0	4	0	6	0	1	1	58	0	8	0	7	0	0	4	137	0	25	0	112	**86**	**14**
Badulla	7	559	4	148	0	9	0	11	2	11	1	47	1	95	2	123	0	0	4	69	3	112	0	0	**82**	**18**
Monaragala	6	236	2	53	0	4	0	8	0	33	0	65	0	144	1	107	0	2	2	73	0	21	0	27	**82**	**18**
Ratnapura	8	2478	1	191	1	23	0	24	0	26	7	320	0	94	8	374	0	1	2	169	1	38	0	28	**89**	**11**
Kegalle	13	1349	0	94	0	9	0	38	0	34	6	157	0	52	2	219	0	0	1	220	1	68	0	2	**82**	**18**
Kalmune	2	141	1	106	0	1	0	6	0	74	0	2	0	0	0	0	0	0	0	88	0	8	0	0	**69**	**31**
SRILANKA	**576**	**33159**	**74**	**2967**	**5**	**164**	**23**	**721**	**8**	**845**	**61**	**1980**	**7**	**1201**	**44**	**1559**	**0**	**19**	**63**	**3532**	**17**	**897**	**21**	**1102**	**83**	**17**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 10th October , 2014 Total number of reporting units 337 Number of reporting units data provided for the current week: 283 C**-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

04th – 10th Oct 2014 (41st Week)

Disease	No. of Cases by Province									Number of cases during current week in 2014	Number of cases during same week in 2013	Total number of cases to date in 2014	Total number of cases to date in 2013	Difference between the number of cases to date in 2013& 2014
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	00	00	00	00	00	01	00	00	02	04	65	76	-14.4%
Diphtheria	00	00	00	00	00	00	00	00	00	00	-	00	-	%
Mumps	02	01	00	00	01	00	01	00	01	06	17	555	1256	-95.6%
Measles	07	00	01	00	02	06	00	00	01	17	54	2799	3147	-11.1%
Rubella	00	00	00	00	00	00	00	00	00	00	00	17	25	-32%
CRS**	00	00	00	00	00	00	00	00	00	00	00	04	06	-33.3%
Tetanus	00	00	00	00	00	00	00	00	01	01	00	12	19	-36.8%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	01	22	67	67.1%
Whooping Cough	00	00	01	00	00	01	00	00	02	04	01	57	69	-17.1%
Tuberculosis	106	00	25	00	04	07	00	05	09	156	211	7749	6597	-17.5%

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.

RDHS 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.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS** =Congenital Rubella Syndrome

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to chepid@sltnet.lk. **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

ON STATE SERVICE

Dr. P. PALIHAWADANA
CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10