WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Healthcare and Nutrition

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

Vol. 38 No.08 19th – 25th February 2011

WER SRI LANKA - 2011

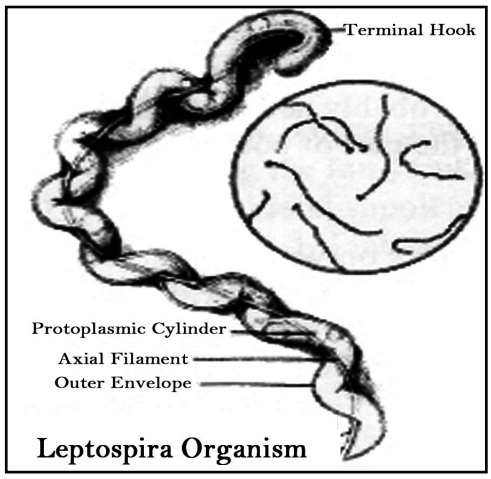
New Challenges in Controlling Leptospirosis

Introduction

Leptospirosis is a potentially serious bacterial zoonotic disease caused by spirochaetes of the genus *Leptospira*, affecting many parts of the body, most commonly found in the tropics.

Some animal species act as natural hosts for certain types of leptospires (serovars) having a commensal relationship between the two. These animals continuously excrete bacteria in their urine, but do not suffer from the disease. If other animals including humans are infected by the same serovars, they often become ill. Serovars found in rats and bandicoots are often identified as the cause for serious illness in humans.

People contract the disease either through broken skin and mucous membrane (eyes, nose, sinuses, mouth) that come in contact with fresh water, damp soil, or vegetation contaminated by the urine of infected animals or by ingesting contaminated food or water.
Local agricultural practices and poor housing and waste disposal give rise to many sources of infection. Although paddy cultivation is associated with the majority of Leptospirosis infections, data from case histories show that there can be many other sources of infection. Children playing in marshy land, people bathing in contaminated waters, sewer workers, people fishing in river banks, rubber tappers, sugarcane former and people affected by flood are among the other categories who have been reported contracting the disease.



Epidemiology

Human leptospirosis (Weil's disease) was first described in Sri Lanka in1953. Since then the disease has been reported from many parts of the country.

For the last fifteen years or so, Leptospirosis remains endemic in Sri Lanka with outbreaks occurring every few years, and the worst reported was in 2008 with 7423 cases and 207 deaths. The districts with high endemicity are Colombo,Gampaha Kalutara, Ratnapura Kegalle, Matale, Kandy, Galle, Matara and Kurunegala .

Changing Epidemiological patterns of Leptospirosis

With the heavy rains and floods recently experienced in the country, some changes in the epidemiological pattern of Leptospirosis has been observed. A higher number of cases has been re-

Contents	*Page*

ported from districts where lower numbers were reported previously. The possible reason for this is the disruption of the irrigation system by the floods leading to collections of water in paddy fields contaminated with infected rat urine especially with rains affecting the dry zone – non endemic areas. Some change in the seasonality of the disease occurrence has also been observed; previously the disease incidence mainly correlated with the paddy *cultivation* season, but some of the recent outbreaks were observed during the *harvesting* season. Although the highest rat infestation of paddy fields is seen during the harvesting season, the chances of the pathogen being transferred from rat to human is minimal during this time, possibly due to the fact that the paddy fields are usually dry during the this season, limiting the disease incidence to a great extent. But with the recent rains occurring during the harvesting season, the paddy fields were flooded enhancing transmission of the pathogen from rat to human.

In addition, a larger number of people get in to the paddy fields during the harvesting season than during the cultivation season. To make the situation worse, most of these people are either temporary employees or family members of paddy field owners who are less likely to have taken chemo prophylaxis, or lack natural immunity to the disease, compared to regular paddy field workers. Also due the dampness in the crop, use of harvesting machines are also limited, forcing more manual labourers in to the paddy fields, again exposing more people to come in contact with the pathogen. The sodden feet of the labourers caused by the water and dampness in the paddy fields also would have resulted in easy abrasion of the feet further facilitating the entry of the pathogen in the body.

These new changes in the disease pattern could be expected in future outbreaks as well, needing attention of all public health personnel having a stake in prevention and control of Leptospirosis. It may be important to have some idea about the possible reasons for these changes observed in the disease patterns for planning effective strategies to prevent and control Leptospirasis.

Challenges in prevention

It is also important to remember some basic facts regarding the sources of infarction, mechanisms of disease transmission etc. that may be important in planning and carrying out effective preventive strategies. Considering the multitude of ways in which the disease can be contracted, like for many other diseases, one blanket control strategies is not possible.

Doxycyclin has shown some effect in chemoprophylaxis against the disease, but it should not be a substitute for primary prevention and only be given to high risk groups under the supervision of the MOH and the field PHI. Hence, other preventive strategies based on the existing knowledge on the disease and its epidemiology are essential in the long term. As changes in human behaviour are going to play a major role in primary prevention as well as secondary prevention, an effective communication strategy will be paramount. Moreover, innovative new thinking is necessary in some areas such as designing effective, user-friendly and cheep protective ware specially for the paddy farmers. Given the seriousness of the illness, secondary prevention of the disease is equally important in preventing complications and death. Therefore, early seeking of medical care, early detection of the disease, and proper management protocols are as important and should be given due priority.

It should be emphasizes the importance of disease surveillance as a very vital component in prevention, for carrying out effective control measures at all levels. Disease surveillance activities are initiated by the first contact medical person who notifies the leptospirosis patient on suspicion, and this leads to a chain of preventive measures at the local level by the MOH and his or her preventive health staff as well as at the district and national levels. Unfortunately timeliness and completeness of notification has most of the time been falling short of target. Therefore the significance of timely notification of suspected cased should be reemphasized to medical personnel at all levels. Lab surveillance activities are also very important, especially at the onset of an outbreak, and therefore the importance of sending the blood samples to the MRI at the correct time should be emphasized.

The main control activities and the people who will be responsible in carrying out these activities will be discussed in a more detailed manner in a forthcoming issue of the WER.

Sources

1.Lepto fact sheet Epidemiology Unit Ministry of Health
http://www.epid.gov.lk/pdf/Leptospirosis/Leptospirosis%20Fact%20Sheet%20(English).pdf
2.Epidemiology Unit website
http://www.epid.gov.lk/leptospirosis.htm
3.Human Leptospirosis:Guidence for diagnosis surveillance and control.WHO 2003.
ISBS 92 4 154589 5

This article was compiled by

Dr. Athula Liyanapathirana; Registrar, Epidemiology Unit ,Dr.Pubudu Chulasiri; Medical officer, Epidemiology Unit,Dr. Jagath Amarasekera; Consultant Epidemiologist, Epidemiology Unit

Table 1: Vaccine-preventable Diseases & AFP

12th – 18th February 2011(07th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	01	00	00	00	00	01	01	00	03	07	15	16	- 6.25 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	01	00	00	00	00	00	00	00	00	01	01	09	21	- 57.1 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	03	04	- 25.0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	05	03	+66.6 %
Tuberculosis	82	02	15	10	9	14	14	02	00	148	141	1205	1331	- 9.5 %

Table 2: Newly Introduced Notifiable Disease

12th – 18th February 2011(07th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	23	02	14	00	02	19	05	01	09	75	76	645	496	+ 30.0 %
Meningitis	03 KL=2 GM=1	00	00	00	00	00	01 AP=1	00	03 RP=1 KG=2	07	20	135	268	- 49.6 %
Mumps	06	02	00	00	00	06	00	00	04	18	18	281	120	+ 134.2 %
Leishmaniasis	00	00	07 MT=5 HB=2	00	00	00	02 AP=1 PO=1	00	00	09	08	74	54	+ 37.3 %

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.

Data Sources:

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

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008. .

Dengue Prevention and Control Health Messages

You have a duty and a responsibility in preventing dengue fever. Make sure that your environment is free from water collections where the dengue mosquito could breed.

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

12th – 18th February 2011(07th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Re-
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	78	585	4	37	0	2	3	33	1	4	3	42	0	1	0	6	0	1	**92**
Gampaha	21	193	1	15	0	2	2	10	0	8	5	29	0	4	0	12	0	0	**80**
Kalutara	1	88	6	25	0	2	0	13	0	6	2	19	0	0	0	1	0	0	**100**
Kandy	2	42	3	75	1	2	2	7	0	2	0	15	2	18	0	6	0	0	**91**
Matale	4	20	1	15	0	0	0	1	0	3	0	17	0	1	0	0	0	0	**83**
Nuwara	3	10	1	29	0	1	0	6	0	12	0	6	1	17	0	1	0	0	**62**
Galle	0	17	1	10	0	0	0	1	0	4	1	13	0	9	0	4	0	0	**95**
Hambantota	1	21	0	7	0	2	0	1	0	0	0	8	0	12	0	0	0	0	**82**
Matara	2	23	0	7	0	0	0	4	0	0	0	15	0	13	0	1	0	0	**82**
Jaffna	9	87	2	15	0	1	3	48	3	6	0	0	13	60	1	9	0	1	**82**
Kilinochchi	1	6	2	3	1	1	1	3	0	0	1	1	0	3	0	1	0	0	**100**
Mannar	1	12	2	2	0	0	0	5	0	0	1	4	1	21	0	0	0	0	**100**
Vavuniya	0	15	0	5	0	2	0	4	0	0	2	13	0	1	0	0	0	0	**75**
Mullaitivu	1	3	0	3	0	0	0	1	0	0	1	2	0	0	0	0	0	0	**50**
Batticaloa	9	58	4	76	0	1	0	2	0	0	2	3	0	0	0	0	0	0	**86**
Ampara	1	14	0	21	0	0	0	5	0	13	0	15	0	0	0	1	0	0	**14**
Trincomalee	6	14	10	48	0	0	0	1	0	4	5	22	0	1	0	2	0	0	**91**
Kurunegala	2	57	0	58	0	2	2	19	0	12	7	41	0	15	1	6	0	0	**86**
Puttalam	5	117	2	35	0	0	0	5	0	1	1	9	0	2	0	1	0	1	**78**
Anuradhapu	6	31	3	25	0	1	1	2	1	2	4	32	0	3	0	3	0	0	**89**
Polonnaruw	3	32	2	19	0	1	0	1	0	8	4	22	0	0	0	0	0	0	**86**
Badulla	4	39	1	21	0	0	0	11	0	0	1	5	0	3	3	7	0	0	**73**
Monaragala	6	37	1	14	0	0	0	4	0	0	3	18	0	11	2	6	0	0	**73**
Ratnapura	8	68	10	64	0	2	0	5	0	4	5	39	1	11	0	11	0	0	**89**
Kegalle	6	34	4	17	2	4	2	14	0	4	7	25	1	1	1	15	0	0	**100**
Kalmunai	1	4	3	63	0	0	0	0	0	0	0	2	0	0	0	0	0	0	**77**
SRI LANKA	**191**	**1627**	**63**	**709**	**04**	**26**	**16**	**206**	**05**	**93**	**55**	**417**	**19**	**207**	**08**	**93**	**00**	**03**	**83**

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 18th February, 2011 Total number of reporting units =320. Number of reporting units data provided for the current week: 267
A = Cases reported during the current week. **B** = Cumulative cases for the year.

PRINTING OF THIS PUBLICATION IS FUNDED BY THE WORLD HEALTH ORGANIZATION (WHO).

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.**

ON STATE SERVICE

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