WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health

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Rabies

Rabies is a viral zoonosis that occurs in over 100 countries and territories. Although a number of carnivores and bat species serve as natural reservoirs, rabies in dogs is the source of 99%of human infections and poses a potential threat to more than 3.3 billion people. In humans, rabies is almost invariably fatal once clinical symptoms have developed.

Disease Burden

Human mortality from endemic canine rabies was estimated to be 55 000 deaths/year globally. It is estimated that deaths due to rabies would be responsible for 1.74 million DALYs (Disability Adjusted Life Years) lost each year and that an additional 0.04 million DALYs were lost through morbidity and mortality following side-effects from nerve-tissue vaccines. The estimated annual cost of rabies including costs for post-exposure prophylaxis and rabies control in dogs was calculated at US$ 583.5 million. Patient -borne costs for post exposure treatment form the bulk of expenditure, accounting for nearly half the total cost of rabies.

About 31 000 people die from dog rabies in Asia each year. In Sri Lanka 50 to 60 deaths occur annually due to rabies and it is mainly due to exposure to infected Dogs. Rabies control measures launched in Sri Lanka since 1975 have had a tremendous effect on the incidence of human rabies. The number of human rabies deaths declined from 377 in 1973 to the present level. Rabies infections from other mammals like cats, mongoose, jackals and bandicoot had also occurred.

The pathogen and the disease

The rabies virus (RABV) belongs to the genus *Lyssavirus* in the family *Rhabdoviridae*. According to the International Committee on Taxonomy of Viruses, 11 species were classified under the *Lyssavirus* genus as of 2009. Rabies is a form of encephalitis caused by a lyssavirus, and RABV is the major viral species representative of the genus.

How it spreads

Human infection usually occurs following a transdermal bite or scratch by an infected animal. Transmission may also occur when infectious material, usually saliva, comes into direct contact with the victim's mucosa or with fresh skin wounds. Human-to-human transmission by bite is extremely uncommon. Rarely, rabies may be contracted by inhalation of virus-containing aerosol or via transplantation of an infected organ. Ingestion of raw meat or other tissues from animals infected with rabies is not a known source of human infection.

The incubation period is typically 1to3 months, but may vary from less than 1 week to more than1 year. The length of the incubation period depends upon factors such as the amount of virus inoculated, the degree of innervation at the site of viral entry and the proximity of the bite to the central nervous system (CNS). Inoculated virus is transported to the CNS via peripheral nerves. On arrival in the brain, it replicates and disseminates rapidly, again via the nervous system to many different tissues including the salivary glands.

Signs and symptoms of the disease

The initial symptoms of rabies are fever and often pain or paraesthesia at the wound site. As the virus spreads through the CNS, progressive fatal encephalomyelitis develops,characterized by hyperactivity and fluctuating consciousness and in cases of furious rabies, hydrophobia or aerophobia or both. Death occurs by cardio respiratory arrest within a few days. Paralytic rabies which may represent as much as 30% of the total number of human cases, runs a less dramatic and usually longer course than the furious form, although it is still ultimately fatal.

Pre-exposure prophylaxis

Pre-exposure prophylaxis is recommended for anyone who will be at continual, frequent or increased risk of exposure to the rabies virus, either as a result of their residence or occupation

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(for example, laboratory workers dealing with RABV and other lyssaviruses, veterinarians and animal handlers). Travelers with extensive outdoor exposure in rural high-risk areas where immediate access to appropriate medical care may be limited should also be vaccinated regardless of duration of stay.

Post exposure Therapy (PET)

Wound should be washed with soap and water for 3 to 5 minutes. Wound should be cleaned thoroughly with 70% alcohol / Povidone Iodine at the hospital. Tetanus Toxoid should be given when necessary. Anti microbial treatment should be given if necessary It is essential to screen the patient and animal before the PET.

All patients in the major category (mentioned below) should be given Rabies immunoglobulin (Equine or Human) followed by a course of Anti Rabies Vaccine (ARV).

Patients in the minor category should only be given only a course of ARV (mentioned below).

Administration of immunoglobulin should be considered an emergency and should be given immediately after the incident.

Guidelines for Screening of patients and animals before PET

Screening the patient and categorization of the exposure

Major exposures

Single or multiple bites with bleeding in the head, neck, face, chest, upper arms, palms, tips of fingers and toes and genitalia.

Multiple deep scratches with bleeding in the head, neck and face.

Single or multiple deep bites in any part of the body.

Contamination of mucus membranes with saliva

Bites of wild animals with bleeding.

Minor exposure

Single superficial bite or scratch with bleeding in lower limbs, upper limbs, abdomen and neck

Nibbling of uncovered skin.

Contamination of open wounds with saliva.

Single or multiple scratches without bleeding in any part of the body

Drinking raw milk of rabid cow or goat.

Screening the animal

In case of major exposure to dogs and cats

If the animal is apparently healthy and observable and has had a minimum of 2 rabies vaccinations not more than 2 years apart, with the last vaccination given within one year of the incident, PET can be delayed while observing the animal for 14 days. When there is a doubt about the health status of the animal or when it is sick, but observable, initiate PET while observing the animal. Discontinue treatment if the animal is apparently healthy after 14 days.

If the animal is having rabies (confirmed by laboratory diagnosis) or unobservable, (animal dead, killed, missing or stray animal) initiate PET and continue the full course.

In case of minor exposure to dogs and cats

If the animal is apparently healthy, observable and has had

- A minimum of 1 rabies vaccination,
- Within 1year of the incident,
- At an age above 3 months.
- Incident occurring at least one month after the vaccination

PET can be delayed while observing the animal for 14 days. When there is a doubt about the health status of the animal or when it is sick but observable, initiate PET while observing the animal. Discontinue treatment if the animal is apparently healthy after 14 days.

If the animal is having rabies (confirmed by laboratory diagnosis) or unobservable (animal dead, killed, missing or stray animal), initiate PET and continue the full course. Patient must be clearly advised that the animal must be put in a cage or leashed during the observation period. If the animal dies, becomes sick or develop abnormal behaviour, the patient should be advised to report to the hospital immediately. In case of death of the animal, patient should be encouraged to send the head of the animal for laboratory confirmation of rabies.

Following are not considered as exposures.

Contamination of intact skin with saliva of a suspected rabid animal.

Petting, bathing or coming in contact with utensils of a suspected rabid animal.

Source-Revised protocol for Anti rabies post exposure therapy

The above mentioned guidelines are used by medical officers in conjunction with clinical condition of the patient to provide the most appropriate treatment.

If appropriate and timely treatment is given after an animal bite, rabies is 100% preventable. Post exposure vaccine and serum are freely available at government hospitals.

Annual rabies vaccination of All Dogs above six weeks is recommended by Sri Lankan rabies control authorities.

Strategies for rabies control

- Responsible dog/Pet ownership- Movement restrictions, Rabies Vaccination, secure vaccination record, registration at Local authorities, Adoption of animal birth control are some of the measures done as part of responsible dog/pet ownership programmes.
- Vaccination of all different groups of dogs- Mass campaigns for vaccination of household dogs against rabies is carried out annually. Sri Lanka recommends to vaccinate dogs at 6 weeks, 3months and repeat vaccinations annually. Vaccination record should be kept securely with the owner and in case of animal bite, owner should submit it to the hospital.
- Animal Birth Control Program to reduce most susceptible stray dogs- Focus of animal birth control is on female dogs to prevent most susceptible unwanted puppies and to reduce rapid turnover of Dog Population
- Habitat control- Garbage Dumps are the major attraction for stray dogs. Very often dogs acquired rabies infection when they rome freely around garbage collections.
- Humane disposal of Rabid and suspected animals.
- Continuous Monitoring and Evaluation.

Sources

Revised protocol for Anti rabies post exposure therapy-available from http://www.rabies.gov.lk/dwnload/General_Circular_revised.pdf
Public Health veterinary services website-available from http://www.rabies.gov.lk/about.html
WHO position paper on Rabies Vaccine- available from http://www.who.int/wer/2010/wer8532.pdf

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Table 1: Vaccine-preventable Diseases & AFP

30th April – 06th May 2011(18th 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	00	00	00	00	00	00	00	00	00	01	28	30	- 06.6 %
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Measles	01	00	02	00	00	02	00	00	01	06	03	48	36	+ 33.3 %
Tetanus	00	00	00	00	00	00	00	00	00	00	01	08	09	- 11.1 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	13	07	+ 85.7 %
Tuberculosis	50	04	04	09	07	15	05	01	12	107	130	2785	3127	- 10.9 %

Table 2: Newly Introduced Notifiable Disease

23rd– 29th April 2011(17th 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	28	10	18	08	07	10	04	04	16	105	77	1834	1445	+ 26.9 %
Meningitis	04 CB=2 GM=1 KL=1	00	00	00	01 TR=1	07 KN=7	00	00	03 RP=2 KG=1	15	31	332	553	- 39.96 %
Mumps	16	08	07	4	24	05	04	03	17	88	21	826	314	+ 162.1 %
Leishmaniasis	00	00	06 MT=4 HB=2	00	00	00	09 AP=8 PO=1	00	00	15	16	254	133	+ 84.2 %

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

Reduce, Reuse or Recycle the plastic and polythene collected in your home and help to minimize dengue mosquito breeding.

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

30th April – 06th May 2011(18th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	157	230	6	81	0	4	2	62	0	8	5	152	1	5	1	20	0	2	**92**
Gampaha	32	304	3	50	1	8	0	21	2	11	4	263	0	13	1	35	0	2	**87**
Kalutara	17	8	2	59	0	3	2	27	0	13	4	105	0	0	0	4	0	0	**58**
Kandy	13	304	7	158	0	4	0	14	2	26	8	59	1	42	4	24	0	0	**74**
Matale	8	59	5	53	0	2	0	9	1	7	3	84	0	8	0	4	0	0	**83**
Nuwara	5	58	10	134	1	3	2	22	0	12	3	22	6	37	1	7	0	0	**69**
Galle	17	126	0	30	1	4	1	3	0	5	4	56	0	14	0	7	0	0	**79**
Hambantota	35	39	1	16	1	4	0	2	0	7	21	268	2	24	2	4	0	0	**83**
Matara	21	66	2	27	0	1	0	5	1	3	7	147	5	29	0	9	0	1	**82**
Jaffna	2	132	3	65	0	3	0	113	0	11	0	2	0	162	1	13	0	2	**100**
Kilinochchi	0	22	0	8	0	3	0	5	0	4	0	1	0	6	0	2	0	0	**50**
Mannar	0	12	0	7	0	0	1	10	0	64	0	11	0	27	0	1	0	0	**80**
Vavuniya	1	31	2	19	0	9	0	5	0	3	0	31	0	2	0	1	0	0	**75**
Mullaitivu	0	9	0	26	0	1	0	1	0	0	0	3	0	1	0	2	0	0	**25**
Batticaloa	37	69	29	282	0	3	0	3	0	8	0	16	0	0	0	2	0	3	**86**
Ampara	2	34	1	41	0	0	0	7	0	20	0	44	0	1	0	6	0	0	**71**
Trincomalee	0	84	35	359	0	0	0	1	0	7	3	61	0	3	0	4	0	0	**91**
Kurunegala	24	172	2	114	0	5	0	43	0	26	20	1130	3	42	0	13	0	0	**74**
Puttalam	2	21	3	77	0	0	0	10	1	2	1	73	1	8	0	4	0	1	**78**
Anuradhapu	7	63	0	50	0	1	0	2	12	22	7	192	1	13	0	4	0	0	**84**
Polonnaruw	6	54	1	22	0	1	0	6	0	8	4	61	0	1	0	5	0	0	**100**
Badulla	9	108	6	65	0	4	1	22	0	5	2	28	6	24	0	20	0	0	**80**
Monaragala	3	72	0	25	0	2	0	17	1	7	11	128	1	38	0	33	0	0	**82**
Ratnapura	21	187	18	207	0	3	0	18	0	11	9	223	0	19	0	20	0	0	**72**
Kegalle	13	125	2	38	1	10	1	30	6	18	8	136	1	10	1	35	0	0	**100**
Kalmunai	1	62	42	230	0	0	0	0	0	11	0	3	0	2	0	2	1	1	**92**
SRI LANKA	**433**	**2451**	**180**	**2243**	**05**	**78**	**10**	**458**	**26**	**319**	**124**	**3299**	**28**	**531**	**11**	**281**	**01**	**12**	**80**

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 06th May, 2011 Total number of reporting units =320. Number of reporting units data provided for the current week: 259
A = Cases reported during the current week. **B** = Cumulative cases for the year.

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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.**

ON STATE SERVICE

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