WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
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Toxocariasis

Toxocariasis is an infection transmitted from animals to humans (zoonosis) caused by the parasitic roundworms commonly found in the intestine of dogs *(Toxocara canis*) and cats (*T. cati*).

Epidemiology & Risk Factors

Infected dogs and cats shed Toxocara eggs in their faeces into the environment. Once in the environment, it takes 2 to 4 weeks for Toxocara larvae to develop and for the eggs to become infectious. Humans or other animals can be infected by accidentally ingesting Toxocara eggs. For example, humans can become infected if they work with dirt and accidentally ingest dirt containing Toxocara eggs. Although rare, people can be infected by eating undercooked or raw meat from an infected animal such as a lamb or rabbit. Because dogs and cats are frequently found where people live, there may be large numbers of infected eggs in the environment.

Once in the body, the Toxocara eggs hatch and roundworm larvae can travel in the bloodstream to different parts of the body, including the liver, heart, lungs, brain, muscles, or eyes. Most infected people do not have any symptoms. However, in some people, the Toxocara larvae can cause damage to these tissues and organs.

The symptoms of toxocariasis, the disease caused by these migrating larvae, include fever, coughing, inflammation of the liver or eye problems. A U.S. study in 1996 showed that 30% of dogs younger than 6 months deposit Toxocara eggs in their faeces; other studies have shown that almost all puppies are born already infected with *Toxocara canis*. Research also suggests that 25% of all cats are infected with *Toxocara cati*. Infection rates are higher for dogs and cats that are left outside for more time and allowed to eat other animals. Globally, toxocariasis is found in many countries, and prevalence rates can reach as high as 40% or more in parts of the world.

Several factors have been associated with higher rates of infection with Toxocara. People are more likely to be infected with Toxocara if they own a dog. In Sri Lanka, seroprevalence studies showed that Toxocara seropositivity in children with asthma was 29% and the proportion of children who were positive for Toxocara antibodies in the study population was 20%. Children and adolescents under the age of 20 are

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more likely to test positive for Toxocara infection. This may be because children are more likely to eat dirt and play in outdoor environments, such as sandboxes, where dog and cat faeces can be found. This infection is more common in people living in poverty. Geographic location plays a role as well because Toxocara is more prevalent in hot, humid regions where eggs are kept viable in the soil.

Disease

Most people infected with Toxocara do not have any symptoms. There are two major forms of toxocariasis, visceral toxocariasis (VT), also called visceral larva migrans (VLM), and ocular toxocariasis (OT), also called ocular larva migrans (OLM). The syndromes VLM and OLM can be caused by infection with the migrating larvae of other kinds of parasites which cause symptoms similar to those caused by migrating Toxocara larvae. In a few people who are infected with high numbers of Toxocara larvae or have repeated infections, the larvae can travel through parts of the body such as the liver, lungs, or central nervous system and cause symptoms such as fever, coughing, enlarged liver or pneumonia. This form of toxocariasis is called visceral toxocariasis (VT). The larvae can also travel to the eye and cause ocular toxocariasis (OT). Ocular toxocariasis occurs when a microscopic Toxocara larva enters the eye and causes inflammation and scarring on the retina. OT typically occurs only in one eye and can cause irreversible vision loss.

Diagnosis

Diagnosis of either visceral toxocariasis or ocular toxocariasis is based on the presence of signs of VT or OT and a history of exposure to a potential source of infectious Toxocara eggs. The diagnosis of visceral toxocariasis is based on compatible disease and exposure history with positive results by serological testing. The currently recommended test is an enzyme-linked immunosorbent assay (ELISA) with larval stage antigens. Usually, excretory/ secretory antigens are released when infective Toxocara larvae are cultured. The specificity of this assay is good although cross-reactivity with antibody to the human roundworm, Ascaris lumbricoides, is possible; however, assays employing Toxocara excretory/ secretory antigens minimize this problem. Positive serological results should be interpreted with consideration of the patient's clinical status. A detectable antibody may be the result of an infection in the past. Also, seropositivity can be present in asymptomatic Toxocara infection. Paired serum samples demonstrating a significant rise in antibody level over time may be useful to confirm active infection.

Treatment

Albendazole-400 mg by mouth twice a day for five days (both adult and pediatric dosage). Mebendazole-100-200 mg by mouth twice a day for five days (both adult and pediatric dosage)

Prevention & Control

Controlling Toxocara infection in dogs and cats will reduce the number of infectious eggs in the environment and reduce the risk of infection for people.

- Clean the pet's living area at least once a week. Faeces should be either buried or bagged and disposed of in the trash. Wash hands after handling pet waste.
- Do not allow children to play in areas that are soiled with a pet or other animal faeces and cover sandboxes when not in use to make sure that animals do not get inside and contaminate them.
- Wash hands with soap and warm water after playing with your pets or other animals, after outdoor activities and before handling food.
- Teach children the importance of washing hands to prevent infection.

Sources

1. Toxocara seropositivity in Sri Lankan children with asthma available at http:ll www.researchgate. Net/ publication/ 24392974- Toxocare - Seropositivity _ in - Sri – Lankan _ Children _ With _asthma
2. Toxocariasis, available at http://www.cdc.gov/ parasites/toxocariasis/

Compiled by Dr.H.H.W.S.B Herath of the Epidemiology Unit

Table 1: Selected notifiable diseases reported by Medical Officers of Health 24th - 30th Jul 2021 (31st Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		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	18	3073	0	10	0	1	0	4	0	3	4	134	0	1	0	2	0	2	0	22	0	7	0	1	**47**	**100**
Gampaha	10	1613	0	1	2	3	0	1	0	0	3	153	0	4	0	4	1	5	0	18	3	12	0	12	**24**	**75**
Kalutara	73	882	0	11	0	2	0	1	0	0	6	370	0	3	0	1	0	1	1	66	0	15	0	0	**36**	**100**
Kandy	28	462	0	17	0	1	0	2	0	2	0	94	0	28	0	1	0	0	0	29	1	13	2	20	**58**	**100**
Matale	20	118	0	12	0	4	0	0	0	0	4	61	0	5	0	1	0	0	0	12	2	3	26	160	**53**	**100**
NuwaraEliya	0	35	0	11	0	2	0	2	0	0	1	42	0	34	0	3	0	0	0	24	0	7	0	1	**28**	**100**
Galle	14	244	0	5	0	1	0	5	0	5	18	494	1	23	0	2	0	0	2	43	0	23	0	1	**40**	**100**
Hambantota	14	251	0	8	0	2	0	2	0	4	10	195	3	53	0	7	0	0	0	38	1	29	52	337	**73**	**100**
Matara	16	366	0	3	0	1	0	1	0	0	9	188	1	14	0	2	0	0	0	46	0	8	10	200	**43**	**100**
Jaffna	2	120	0	35	0	3	0	14	0	27	0	16	1	438	0	0	0	3	0	26	0	3	0	2	**21**	**88**
Kilinochchi	0	23	0	22	0	0	0	2	0	10	0	50	1	70	0	0	0	0	0	10	0	0	0	1	**52**	**100**
Mannar	1	24	0	2	0	0	0	4	0	0	0	26	0	2	0	0	0	0	0	3	0	15	0	1	**41**	**100**
Vavuniya	0	35	0	2	0	1	0	1	1	1	1	23	0	2	0	1	0	0	0	6	0	1	0	1	**40**	**100**
Mullaitivu	0	5	0	3	0	0	0	0	0	1	0	29	0	8	0	0	0	0	0	9	0	6	0	0	**24**	**100**
Batticaloa	5	2986	1	23	0	3	0	2	0	15	1	39	0	0	0	1	0	0	0	11	1	22	0	0	**46**	**100**
Ampara	1	31	0	7	0	0	0	1	0	7	1	47	0	0	0	2	0	0	0	37	0	11	2	7	**60**	**100**
Trincomalee	0	119	0	0	0	0	0	0	0	2	0	4	0	0	0	2	0	0	0	16	0	2	0	0	**27**	**100**
Kurunegala	43	792	1	16	1	4	0	0	0	3	11	224	0	20	0	2	0	2	2	41	0	76	10	263	**39**	**100**
Puttalam	10	265	0	2	0	1	0	0	0	0	0	20	0	15	0	0	0	1	0	16	1	31	0	9	**41**	**99**
Anuradhapur	5	165	0	10	0	0	0	1	0	3	4	217	1	23	0	4	0	0	0	29	1	31	13	172	**26**	**91**
Polonnaruwa	1	54	0	3	0	0	0	3	0	2	1	100	0	3	1	3	0	0	1	24	0	2	18	293	**38**	**100**
Badulla	16	172	0	9	0	0	0	1	0	0	14	251	2	36	4	26	0	0	0	32	0	14	0	15	**44**	**100**
Monaragala	5	91	0	6	0	0	0	3	0	5	7	279	1	24	3	61	0	0	0	23	4	47	0	20	**50**	**100**
Ratnapura	23	379	0	24	0	6	0	0	0	4	13	578	1	18	0	8	0	1	0	41	3	60	0	73	**36**	**95**
Kegalle	17	334	0	4	0	9	0	0	0	2	6	211	0	11	0	1	0	0	2	77	0	24	2	13	**42**	**100**
Kalmune	0	266	0	11	0	2	0	1	0	1	0	16	0	1	0	2	0	2	0	14	0	7	0	2	**45**	**100**
SRILANKA	**58**	**12905**	**2**	**257**	**3**	**46**	**0**	**51**	**1**	**97**	**11**	**3861**	**12**	**836**	**8**	**13**	**1**	**17**	**8**	**713**	**17**	**469**	**13**	**1604**	**41**	**97**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 30th July , 2021 Total number of reporting units 361 Number of reporting units data provided for the current week: 351 C**-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

24th – 30th Jul 2021 (31st Week)

Disease	No. of Cases by Province									Number of cases during current week in 2021	Number of cases during same week in 2020	Total number of cases to date in 2021	Total number of cases to date in 2020	Difference between the number of cases to date in 2021& 2020
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	01	00	00	00	01	00	32	25	28 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	00	00	00	01	00	00	01	03	53	116	-54.3 %
Measles	00	02	00	00	00	00	00	00	00	02	00	11	35	- 68.5 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	02	03	-33.33%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	03	31	- 903 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	00	05	-100%
Tuberculosis	00	08	07	08	05	03	11	04	13	59	108	3232	3610	- 10.4 %

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

NA = Not Available

Covid-19 Prevention & Control

For everyone's health & safety, maintain physical distance, often wash hands, wear a face mask and stay home.

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**

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