WEEKLY EPIDEMIOLOGICAL REPORT

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Dengue Part V

This is last part of the series of five articles

In DHF an increased vascular permeability leads to plasma leakage into the extravascular compartment causing haemoconcentration and decreased blood pressure. Pleural effusion, ascites, hypoproteinaemia and haemoconcentration are seen in patients with severe plasma leakage[23]. Hepatomegaly and mid/right-epigastric pain is common[24]. Haemorrhagic manifestations of dengue vary from mild petechiae and purpura, through moderate gum bleeding, epistaxis, haematuria and ecchymotic patches to severe menorrhagia and gastrointestinal bleeding.

In Dengue Shock Syndrome (DSS) the patient goes into circulatory failure and is at risk of dying unless managed appropriately. They can also develop severe haemorrhagic manifestations such as haematemesis, malena and menorrhagia during prolonged shock. Hepatitis, myocarditis, pancreatitis and encephalitis are rare manifestations.

In DHF or DSS the rapid deterioration of the patient's condition, shortly after the defervescence of fever, is termed the 'critical phase' and typically lasts 24-48 hours. When properly treated, convalescence is usually short and uneventful

In convalescence, plasma leakage subsidies and extravasated fluids are reabsorbed, leading to
hypervolaemia and increased urine output. Simultaneously white cell count begins to rise followed by the platelet count[23]. Supportive treatment of fever and fluid management are the cornerstones of management of Dengue in the absence of either a specific remedy or a globally effective vaccination

Antibody-dependent enhancement is seen in serial dengue infections with different serotypes. Primary infection gives rise to protective type-specific antibodies, which do not protect against the other DENV serotypes but enhance the secondary infection[24]. This is seen when infants develop DHF/DSS during their first dengue infection when maternal polyclonal dengue antibodies have degraded below protective levels

Diagnosis of Dengue

"Virus isolation methods
The virus may be isolated from the blood

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during the first few days of infection. Various reverse transcriptase–polymerase chain reaction (RT–PCR) methods are available and are considered the gold standard. However, they require specialised equipment and training for staff to perform these tests.

The virus may also be detected by testing for a virus-produced protein, called NS1. There are commercially-produced rapid diagnostic tests available for this, and it takes only ~20 mins to determine the result and the test does not require specialized laboratory techniques or equipment.

Serological methods

Serological methods, such as enzyme-linked immunosorbent assays (ELISA), may confirm the presence of a recent or past infection, with the detection of anti-dengue antibodies. IgM antibodies are detectable ~1 week after infection and remain detectable for about 3 months. The presence of IgM is indicative of a recent DENV infection. IgG antibody levels take longer to develop and remain in the body for years. The presence of IgG is indicative of a past infection

Treatment of Dengue

"There is no specific treatment for dengue fever. Patients should rest, stay hydrated and seek medical advice. Depending on the clinical manifestations and other circumstances, patients may be sent home, be referred for in-hospital management, or require emergency treatment and urgent referral.

Supportive care such as fever reducers and pain killers can be taken to control the symptoms of muscle aches and pains, and fever.

- The best options to treat these symptoms are acetaminophen or paracetamol.
- NSAIDs (non-steroidal anti-inflammatory drugs), such as ibuprofen and aspirin should be avoided. These anti-inflammatory drugs act by thinning the blood, and in a disease with a risk of haemorrhage, blood thinners may exacerbate the prognosis.

For severe dengue, medical care by physicians and nurses experienced with the effects and progression of the disease can save lives – decreasing mortality rates to less than 1% in the majority of the countries

Vaccination against dengue

"The first dengue vaccine, Dengvaxia® (CYD-TDV) developed by Sanofi Pasteur was licensed in December 2015 and has now been approved by regulatory authorities in ~20 countries. In November 2017, the results of additional analysis to retrospectively determine serostatus at the time of vaccination were released. The analysis showed that the subset of trial participants who were inferred to be seronegative at the time of first vaccination had a higher risk of more severe dengue and hospitalizations from dengue compared to unvaccinated participants. As such, the use of the CYD-TDV vaccine is targeted at persons living in endemic areas, 9-45 years of age, who have had at least 1 episode of dengue virus infection in the past. Several additional dengue vaccine candidates are under evaluation."

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 20th– 26th Nov 2021 (48th 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	24	5327	1	12	0	1	0	5	0	3	8	205	0	2	0	2	0	3	0	22	0	12	0	1	**46**	**100**
Gampaha	21	3021	0	5	0	7	0	1	0	0	3	324	0	8	0	4	0	5	0	26	1	16	0	13	**23**	**74**
Kalutara	39	1371	0	12	0	2	0	3	0	5	35	665	0	3	0	1	0	1	0	71	0	23	0	0	**34**	**90**
Kandy	47	795	0	21	0	1	0	5	5	13	12	264	2	43	0	3	0	0	4	41	1	19	2	31	**57**	**100**
Matale	7	227	0	13	0	4	0	0	0	0	1	86	0	6	1	3	0	1	0	12	0	7	8	259	**50**	**100**
NuwaraEliya	0	53	0	16	0	2	1	5	0	0	2	69	3	43	0	4	0	0	2	30	1	8	0	1	**29**	**100**
Galle	13	448	1	11	0	1	0	5	0	7	14	716	0	28	0	2	0	0	0	57	1	36	0	2	**38**	**100**
Hambantota	9	346	0	16	0	2	0	2	0	6	6	260	0	75	0	7	0	0	1	53	0	34	8	480	**68**	**100**
Matara	11	518	0	6	0	1	0	1	0	0	6	317	0	17	0	3	0	0	1	59	0	11	3	304	**43**	**100**
Jaffna	10	147	0	45	0	3	0	15	0	27	1	21	12	464	0	0	0	6	0	33	0	3	0	2	**21**	**88**
Kilinochchi	1	26	1	26	0	0	0	2	0	10	0	56	0	83	0	1	0	0	0	10	0	0	0	1	**51**	**100**
Mannar	7	37	0	8	0	1	0	4	0	0	0	28	0	2	0	0	0	0	0	6	0	19	0	1	**34**	**100**
Vavuniya	3	44	0	4	0	2	0	1	0	2	0	23	0	2	0	1	0	0	0	6	0	2	0	1	**36**	**100**
Mullaitivu	0	7	0	3	0	0	0	0	0	1	0	33	0	9	0	0	0	0	0	9	1	7	0	0	**22**	**100**
Batticaloa	11	3044	4	39	0	7	0	4	0	36	0	47	0	0	0	1	0	0	1	15	2	26	0	0	**47**	**100**
Ampara	2	47	0	10	0	0	0	1	0	7	5	63	0	1	0	3	0	0	0	43	2	19	0	14	**56**	**100**
Trincomalee	20	172	1	2	0	0	0	0	0	2	1	5	0	0	0	2	0	0	0	19	0	2	0	1	**25**	**100**
Kurunegala	96	1310	1	20	0	4	0	0	0	11	44	511	1	32	0	4	0	2	1	55	5	96	15	382	**35**	**100**
Puttalam	16	347	0	2	0	1	0	0	1	1	2	28	0	16	0	2	0	1	0	19	1	37	0	10	**38**	**96**
Anuradhapur	1	209	0	14	0	2	0	1	0	3	3	230	0	26	0	6	0	0	1	34	0	48	0	288	**23**	**91**
Polonnaruwa	3	81	0	8	0	1	0	3	0	9	2	126	0	3	0	3	0	0	0	31	0	3	14	476	**36**	**100**
Badulla	67	522	0	12	0	0	0	3	0	0	5	316	0	47	1	41	0	0	0	45	0	19	0	21	**42**	**100**
Monaragala	3	141	1	16	0	0	0	3	0	6	19	388	1	37	3	104	0	1	0	27	2	63	2	43	**51**	**100**
Ratnapura	17	532	0	31	0	8	0	0	0	5	20	797	1	23	1	10	0	1	1	53	0	86	1	111	**34**	**95**
Kegalle	14	467	0	4	0	11	0	0	0	2	56	542	1	14	1	3	0	0	0	88	0	33	0	30	**41**	**100**
Kalmune	4	300	2	30	0	2	0	4	0	4	0	21	0	1	0	2	0	2	0	17	0	18	0	2	**44**	**100**
SRILANKA	**86**	**19539**	**12**	**386**	**0**	**63**	**1**	**68**	**6**	**160**	**24**	**6141**	**21**	**985**	**7**	**21**	**0**	**23**	**12**	**881**	**17**	**647**	**53**	**2474**	**40**	**97**
																									41	

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 26th Nov , 2021 Total number of reporting units 361 Number of reporting units data provided for the current week: 349 C**-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

20th– 26th Nov 2021 (48th 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*	03	00	00	00	00	00	00	00	00	03	00	65	38	71.0,%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	00	00	00	00	00	00	00	03	65	163	- 60.1 %
Measles	00	00	00	00	00	00	00	00	00	00	00	13	50	- 74 %
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	05	07	-28.5 %
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	04	31	- 87 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	00	09	- 100%
Tuberculosis	19	04	03	05	04	17	00	07	09	68	142	4680	5752	- 18.6 %

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

Number of Malaria Cases Up to End of November 2021,

03

All are Imported!!!

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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