



WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health

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WEB

Pertussis

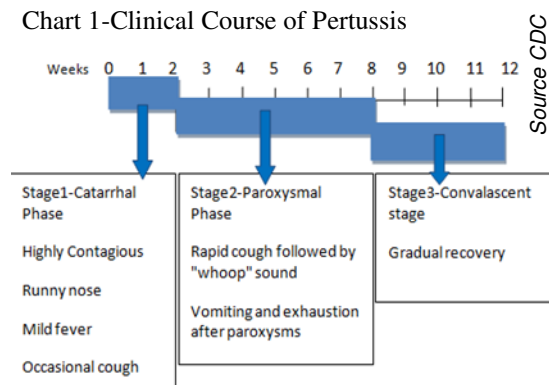
Overview

Whooping Cough (pertussis) is an extremely contagious respiratory infection caused by the bacterium *Bordetella pertussis* (fastidious Gram-negative coccobacillus). The disease causes uncontrolled coughing and vomiting, which can last for several months and can be particularly dangerous for babies under the age of 12 months. It is a notifiable disease in Sri Lanka.

In Sri Lanka, Immunization of children against pertussis commenced in 1961 with the introduction of DPT vaccine to the National Immunization Programme. With the current immunization schedule, children receive 4 doses of whole cell pertussis vaccine as DPT on the completion of 2,4,6 and 18 months respectively. Before the launching of the EPI, an average of 1500 to 2000 cases of pertussis discharges were reported from government hospitals in Sri Lanka. With the increasing DPT immunization coverage, number of pertussis cases reported has come down to an average of less than 200 cases per year and maintained at static levels with periodic small peaks. The major drawback in pertussis surveillance and control is that none of the above cases are laboratory confirmed. So far in 2015 (up to May) there has been 23 notified

cases of which 15 were clinically confirmed as Pertussis. The disease is transmitted from infected to susceptible individuals through droplets. It is highly communicable in the early catarrhal and at the beginning of the paroxysmal cough stages

Chart 1-Clinical Course of Pertussis



Symptoms

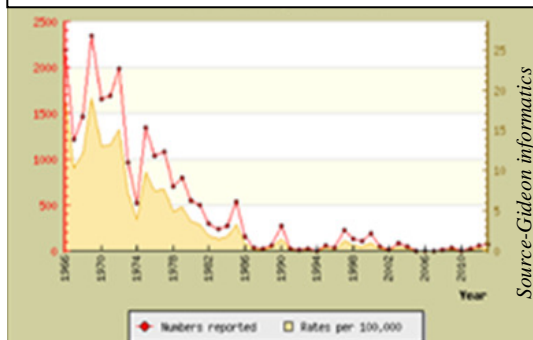
Following an incubation period of 7-10 days, patients develop catarrhal symptoms including cough. In the course of 1-2 weeks, coughing paroxysms ending in the classical whoop may occur. In young infants, pertussis may cause only apnoea and cyanosis, whereas in adolescents and adults, characteristic persistent cough may be the only manifestation of the disease.

Complications occur in 5-6% of pertussis cases, most frequently in infants under 6 months of age. Bronchopneumonia is the most common (5.6%). The incidence of pertussis associated encephalopathy is 0.9/100,000.

Diagnosis

In Sri Lanka, laboratory confirmation of pertussis does not take place and the diagnosis is essentially clinical.

Table 1-Pertussis cases in Sri Lanka



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Clinical Criteria-In the absence of a more likely alternative diagnosis, a cough illness lasting ≥ 2 weeks, with at least one of the following signs or symptoms:

-Paroxysms of coughing; OR Inspiratory whoop; OR

Post-tussive vomiting; OR Apnea (with or without cyanosis) (in infants aged <1 year only)

Laboratory Criteria for Diagnosis-Isolation of *B. pertussis* from a clinical specimen, PCR

Epidemiologic Linkage

Contact with a laboratory-confirmed case of pertussis.

Risk factors for increased burden

Mass population movement, overcrowding (The disease is usually introduced into household by an older sibling or parent.), poor access to health services, malnutrition increases the severity of pertussis

Case management

Erythromycin should be administered for 7 days to all cases and close contacts, regardless of age and vaccination status.,

Clarithromycin and azithromycin are also effective. If initiated early, drug administration modifies the course of illness and speedy recovery, it also eradicates the organism from secretions. However, it does not reduce the symptoms except when given during early stages.

Prevention and control

Immunization is the key to prevention. Prophylactic antibiotics may be administered during management of an outbreak.

All the clinically confirmed cases are being investigated to find their immunization status and other possible causes such as cold chain failure and other associated factors.

Immunization

Whole-cell pertussis vaccine(wP)

Whole-cell pertussis vaccines contain inactivated pertussis toxin either alone or in combination with other *B. pertussis* components. (administered at 2, 4 6 and 18 months of age). The efficacy of the vaccine in children who have received at least 3 doses is estimated to exceed 80%.Protection is greater against severe disease, and begins to wane after about 5 years.

In general, wP is not given to individuals aged 7 years or older, since local reactions may be increased in older children and adults, and the disease is less severe in older children.

Acellular vaccine-Although acellular pertussis vaccines (aP) are less commonly associated with adverse reactions, price considerations affect their use, wP vaccines are the vaccines of choice for some countries.

Except for cases where prior pertussis vaccination resulted in anaphylactic reaction, there are no strict contraindications to these vaccines. All infants, including those who are human immunodeficiency virus (HIV) positive, should be immunized against pertussis. There are no data to support the perception that previous encephalitis may be a contraindication for pertussis vaccination.

Epidemic control

The highly contagious nature of pertussis leads to large numbers of secondary cases among non-immune contacts. Although prophylactic antibiotic treatment (erythromycin) in the early incubation period may prevent disease, difficulties of early diagnosis, costs and concerns about drug resistance may limit prophylactic treatment to selected individual cases.

Priority must be given to ;

Protecting children under 1 year of age and pregnant females in the final 3 weeks of pregnancy, because of the risk of transmission to the new born. Because severe and sometimes fatal pertussis-related complications occur in infants aged <12 months, especially among infants aged <4 months, post-exposure prophylaxis should be administered in exposure settings that include infants aged <12 months or women in the third trimester of pregnancy.

Infection among household members should be stopped, particularly if these include children under 1 year of age and pregnant women in the final 3 weeks of pregnancy.

The strategy relies on chemoprophylaxis of contacts within at least 14 days of the first contact with the index (initiating) case. Index cases must avoid contact with day-care centers, school and other places where susceptible individuals are grouped, for up to 5 days after commencing treatment, or up to 3 weeks after onset of paroxysmal cough, or until the end of cough, whichever comes first.

All cases and contacts must have their immunization status verified and brought up-to-date.

Sources

- 1.Immunization Handbook. 3rd ed. Colombo: Epidemiology Unit,Ministry Of Health, 2012.
- 2.Recommended Antimicrobial Agents For The Treatment And Postexposure Prophylaxis Of Pertussis: 2005 CDC Guidelines', available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5414a1.htm>

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

Table 1: Selected notifiable diseases reported by Medical Officers of Health 23rd - 29th May 2015 (22nd 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	77	4246	2	92	1	5	4	44	2	67	11	133	0	6	1	17	0	3	4	237	2	22	0	0	88	13
Gampaha	21	1995	0	41	0	3	3	18	0	24	1	215	0	6	0	74	0	0	5	107	0	10	0	2	60	40
Kalutara	12	720	3	50	0	4	1	22	0	66	6	149	0	0	0	15	0	1	3	152	4	25	0	0	92	8
Kandy	17	638	5	59	0	5	0	16	0	25	11	51	1	33	2	82	0	0	6	118	0	8	1	3	96	4
Matale	0	310	0	28	0	0	0	6	0	4	0	29	0	6	1	20	0	0	0	13	0	4	0	3	38	62
NuwaraEliya	0	88	19	174	0	3	0	9	0	0	1	14	0	35	0	40	0	0	3	59	1	29	0	0	85	15
Galle	1	341	0	28	0	1	0	4	0	6	0	99	0	25	0	4	0	0	5	98	0	20	0	1	40	60
Hambantota	0	152	1	14	0	0	0	5	0	9	1	49	0	26	0	24	0	0	2	72	0	5	1	137	67	33
Matara	4	221	1	37	0	5	0	4	0	44	2	91	0	19	0	16	0	0	4	132	0	11	4	4	100	0
Jaffna	14	1059	6	288	0	8	1	138	4	41	0	12	3	499	0	9	0	2	4	130	1	8	0	0	100	0
Kilinochchi	1	34	0	41	0	0	0	5	0	27	0	1	0	12	0	0	0	0	1	11	0	0	0	0	75	25
Mannar	0	73	0	6	0	1	0	5	0	2	0	8	0	16	0	0	0	0	1	7	0	0	0	0	80	20
Vavuniya	2	74	0	10	0	6	1	39	0	4	0	12	0	12	0	1	0	2	0	32	1	5	0	2	50	50
Mullaitivu	3	80	0	11	0	2	0	5	0	1	0	3	0	7	0	2	0	0	0	2	0	2	0	4	60	40
Batticaloa	11	1128	5	125	0	4	0	12	0	123	1	8	0	2	0	0	0	0	0	23	0	12	0	0	50	50
Ampara	0	24	0	24	0	1	0	1	0	3	0	10	0	0	0	2	0	0	1	118	0	4	0	0	43	57
Trincomalee	5	429	2	23	0	0	0	17	0	31	0	11	1	11	0	7	0	1	1	43	0	3	0	1	67	33
Kurunegala	15	743	1	81	0	2	0	3	0	13	6	135	1	16	1	26	0	3	7	225	3	18	2	49	78	22
Puttalam	1	424	1	21	0	4	1	3	0	6	0	23	0	9	0	1	0	0	0	29	0	15	0	1	62	38
Anuradhapura	0	255	0	36	0	1	0	2	0	48	0	149	0	15	0	8	0	0	2	101	0	15	5	127	26	74
Polonnaruwa	3	122	0	25	0	2	0	7	0	3	0	42	0	1	0	3	0	0	0	71	0	13	0	48	29	71
Badulla	4	337	6	73	0	3	0	4	1	7	1	34	0	55	6	93	0	2	1	90	1	42	0	6	53	47
Monaragala	0	104	2	57	0	1	1	11	0	2	0	120	2	44	1	37	0	1	2	45	0	7	0	12	73	27
Ratnapura	5	503	3	138	0	5	2	24	0	1	1	148	1	34	1	127	0	0	2	62	1	23	0	4	83	17
Kegalle	11	286	0	36	0	7	0	42	0	5	5	160	0	29	2	57	0	0	4	117	0	29	0	0	82	18
Kalmunai	3	390	4	64	0	1	0	1	0	30	0	3	0	0	0	0	0	0	5	64	0	7	0	0	38	62
SRILANKA	210	14776	61	1582	1	74	14	447	7	592	47	1709	9	918	15	665	0	16	62	2158	14	337	13	440	67	33

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 29th May, 2015. Total number of reporting units 337. Number of reporting units data provided for the current week: 230. C**=Completeness

Table 2: Vaccine-Preventable Diseases & AFP

23rd - 29th May 2015 (22nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2015	Number of cases during same week in 2014	Total number of cases to date in 2015	Total number of cases to date in 2014	Difference between the number of cases to date in 2014 & 2015
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	01	00	00	01	00	00	00	00	02	04	29	41	-29.3%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	%
Mumps	02	00	01	00	01	01	00	01	00	06	15	171	323	-47.1%
Measles	14	04	06	00	02	05	03	01	03	38	43	1045	1813	-42.3%
Rubella	00	00	00	00	00	00	00	00	00	00	00	05	11	-54.5%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	03	-100%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	07	08	-12.5%
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	00	07	17	-59.1%
Whooping Cough	00	00	01	00	00	00	01	00	00	00	00	34	26	+31.1%
Tuberculosis	44	22	28	09	28	32	13	10	25	211	216	4056	4172	-3.1%

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

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