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Communicable Diseases Intelligence

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Contents:

VIRUS REPORTING SCHEME - A total of 1279 reports were received this period.

- Dengue type 2 virus - Since July 1981 the 387 serologically confirmed indigenous dengue cases reported by the State Health Laboratory, Brisbane, have generally shown reactivity by HI, CF and/or the presence of IgM against the antigen of dengue type 1 virus. Serological overlapping was evident in some samples. The titres in the acute- and convalescent-phase serum samples taken from a 23 year old female from Gordonvale, near Cairns, detailed in Table 1 are the first solid evidence of indigenous dengue type 2 virus activity.

TABLE 1. Flavivirus antibody titres in sera collected from dengue case, Gordonvale.

Collection Date	MVE			DEN-1			DEN-2			DEN-3			DEN-4		
	HI	CF	IgM	HI	CF	IgM	HI	CF	IgM	HI	CF	IgM	HI	CF	IgM
28/4/82	<20	-		<20	-		20	-		20	-		<20	-	
26/5/82	<20			<20	-	-	160	-	+	20	-	-	40	-	-
9/6/82	40			20	8	-	160	32	+	40	16	-	40	16	+
28/6/82	80	8		40	8	-	80	64	-	20	16	-	40	16	-
15/7/82	80	8		20	-		160	16		20	8		40	16	
6/8/82	40	-		40	-		80	16		20	8		80	16	

The patient had no history of overseas travel, and stated that she had stayed in her home environs. She presented with intermittent fever, rash, urticaria and myalgia for a period of three weeks. Specimens have also been sent to Fort Collins, USA, for neutralisation tests using dengue type-specific hybridoma-derived monoclonal antibodies.

- Japanese encephalitis - Specific IgM against Japanese encephalitis virus (coded as 9998 - arbovirus group B unspecified, in the Virus Tables) was reported by the State Health Laboratory, Brisbane, in a 20 year old female who had returned recently from Bali. She was admitted to the Royal Brisbane Hospital with encephalitis. The serum specimen collected on 9 August also had some IgM activity against Alfuy virus, but no reaction against MVE and Kunjin virus. Neutralisation tests are currently being done at

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LEGIONNAIRES' DISEASE - NEW SOUTH WALES

(Contributed by J.L. Harkness and L.M. Brady, St Vincent's Hospital, Sydney).

In 1981, 701 sera were referred to St Vincent's Hospital for testing for Legionnaires' disease. Of these 26 (3.7%) were found to have a significant titre against the organism (a stationary titre ≥1/256 or a four-fold rise to at least 1/128). In 1982, eight (2.4%) of the 340 sera tested to 30 June had significant titres. All sera were tested against Legionella pneumophila serogroups 1-4 using the indirect fluorescent antibody (IFA) technique (see Table 1). Serogroup 1 was the commonest serogroup responsible for infection.

TABLE 1 Sera reacting significantly in the L. pneumophila IFA test.

Year	Sera tested	Highest significant IFA titres		
		1/256	1/512	1/1024
1981	701	13	9	4
1982 (to 30 June)	340	6	1	1

In 1981, nine patients had evidence of acute infection based on the presence of a four-fold antibody rise up to at least 1/128 (five patients) and/or the presence of a significant titre with IgM (seven patients). Significant but stationary titres without IgM were seen in 17 patients, indicating presumed past infection with L. pneumophila at an undetermined time. All of the patients who were diagnosed serologically as having acute infections and who were followed up, were found to have clinical pneumonia. Two patients died, but neither had an autopsy performed. None of the eight patients with significant titres to 30 June 1982 were diagnosed as having acute infection.

Editorial Comment

Since the original isolation[1] and classification[2] of L. pneumophila, six serogroups of the organism have been identified.[3,4,5] Six additional species with similar phenotypes have also been described; L. longbeachae[6] (two serogroups), L. jordanis[7], Fluoribacter bozemanae[8], F. dumoffii[8], F. gormanii[9] and Tatlockia micdadei[10,11]. The last four species were transferred from the Legionella genus by the International Committee on Systematic Bacteriology in January 1980[12]. DNA relatedness among species of the family Legionellaceae is low - usually 25% or less, but their phenotypic characteristics are very similar. All species have directly or indirectly been implicated as causes of human pneumonia. Since infections with L. pneumophila serogroup 1 are the most common, and an early rise in titre may be a significant finding in a patient with severe respiratory infection, sera are usually screened using dilutions starting at 1/16 with the polyvalent antigen containing antigens of L. pneumophila serogroups 1-4. Ruchill Hospital, Glasgow, UK, uses the other polyvalent antigens in three pools; L pneumophila serogroups 5 and 6 with two unclassified strains; F. bozemanae, F. dumoffii, F. gormanii and T. micdadei; and L. longbeachae (serogroups 1 and 2) and L. jordanis[13].

References

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8. Curr. Microbiol. (1980) 4 : 111
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11. J. Inf. Dis. (1980) 141 : 727
12. CDI (1982) 82/5 : 6
13. CDS (1982) 82/9 : 11

PARASITIC RASHES

(Contributed by J.M. Goldsmid, Department of Pathology, University of Tasmania, Hobart).

Although many parasitic infections and infestations (e.g. giardiasis, hydatidosis, filariasis, taeniasis, ascariasis, scabies, lice) can at times induce urticarial rashes in patients, a number of specific helminthic diseases can also result in the development of an itchy rash or lesions. These include human hookworms (ground itch), canine or feline hookworms (cutaneous larva migrans; creeping eruption; sandworm), Strongyloides stercoralis (larva currens) and the cercariae of animal, particularly avian, schistosomes (cercarial dermatitis; swimmer's itch; bather's itch; pelican itch).

Ground itch - This may occur as a transient itching caused by the penetration of the skin, often between the toes due to man's habit of walking bare foot, of the infective larvae of the human hookworm, particularly Necator americanus. The condition is therefore seen in those areas of Australia where hookworm is endemic.

Cutaneous larva migrans - Cutaneous larva migrans or creeping eruption presents as a progressive tunnel-like lesion associated with severe itching and which extends in a serpiginous fashion for weeks or months. It is caused by penetration of the skin and wandering below the stratum germinativum of infective larvae of animal hookworm species, particularly dog or cat hookworm (Ancylostoma caninum, A. braziliense and Uncinaria stenocephala) or occasionally unrelated parasites such as fly maggots or mites (Echidnophaga species). These larvae cannot complete their development in man who is an abnormal host. The condition is self-limiting but may persist over periods of six months or longer. The infection is very unpleasant, with severe itching, and secondary bacterial infection is a common complication. The condition probably exists throughout the warmer areas of Australia where dog and cat hookworms are endemic[1], but cases have been seen in Tasmania in people who have taken holidays on mainland Australia or overseas, especially the Pacific Islands. Treatment is unsatisfactory except for the administration of topical thiabendazole[2] or killing individual larva by freezing for 2-4 minutes with ethyl chloride spray.

Larva currens - S. stercoralis infection is similar in general clinical appearance to cutaneous larva migrans, except that it commonly occurs on the buttocks and midriff, lasts one or two days and occurs at irregular intervals over periods of many years[3]. Invasion of the skin is due to external autoinfection with infective filariform larvae migrating from the gastrointestinal tract via the anus and re-entering the body around the buttocks, abdomen and thighs. In Australia, the commonest group of patients presenting with this condition are World War II ex-servicemen, particularly ex-prisoners-of-war, who saw service against the Japanese in South-East Asia, Timor and the Far East, and who have suffered from the condition for the intervening years[4-6]. The condition can be recognised clinically and be confirmed by repeat stool examination, duodenal aspiration or the use of the Enterotest duodenal capsule[7] for larvae or by serology[8,9]. In view of the capability of S. stercoralis to multiply, treatment is aimed at eradication in the gastrointestinal tract using thiabendazole (Mintezol), mebendazole (Vermox)[11] or perhaps in the future one of the other benzimidazole drugs such as cambendazole[12].

Cercarial dermatitis – In Australia, schistosome life cycles are characterised by asexual reproduction in an extremely restricted range of gastropod molluscs including Lymnaea lessoni (freshwater) and Velacumantus australis (salt water), and sexual reproduction in a limited range of vertebrates such as seagulls, terns, teal ducks and black swans. The birds are infected when free-swimming cercariae emerge from the molluscs, invade through the skin and usually mature in the vascular circulation. Man is a dead-end host for these cercariae of avian and mammalian origin,[13,14] which include the genera Microbilharzia, Trichobilharzia, Gigantobilharzia and Ornithobilharzia[15]. Although the cercariae are incapable of maturing and die following penetration of the human skin, they do induce an itchy, papular rash usually within 24 hours of exposure and persisting for 7-14 days or more.

Sporadic cases of freshwater dermatitis have been reported from all mainland States, and marine-associated cases from New South Wales, Queensland, Western Australia and Tasmania[16]. In Western Australia, the cercariae responsible for perennial dermatitis in the Swan River estuary was identified as Cercariae variglandis pyrazi which is the larval form of the avian blood fluke Austrobilharzia terrigalensis, and has the marine or estuarine mud whelk Velacumentus australis as its intermediate host. V. australis occurs in estuaries, lagoons and mangrove swamps from Queensland, along the southern coast of Australia and Tasmania to the Swan estuary in Perth[17]. In Tasmania, an imported case was diagnosed recently in a young woman who had gone prawning in New South Wales. The rash extended over both legs to the thighs corresponding to the patient having been wading thigh deep in water. Cercarial dermatitis is diagnosed clinically in patients with a history of exposure - the rash often corresponding to the area of the body that was immersed in the water. The lesions can be differentiated from jelly-fish stings by the fact that the latter do not persist for longer than five days following exposure[18].

It is evident therefore that clinical recognition of these rashes together with a careful case and geographic history is essential for a final diagnosis. Larva currens due to S. stercoralis is the only infection that may be confirmed by laboratory studies. A clinical awareness would save the

patient unnecessary discomfort when an erroneous diagnosis of "embedded foreign body" is made, especially when probing of the lesion to remove the "foreign body" commonly results in a secondary bacterial infection. Treatment is usually symptomatic to alleviate the itching and reduce scratching which again can result in secondary bacterial infection. Strongyloidiasis is treatable, although the regimens available at present are far from ideal.

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DIPHTHERIA SURVEILLANCE - UK
(Based on CDR (1982) 82/33 82/34 and 82/35).

On 20 August 1982, a three year old girl with pharyngitis and hoarseness of about seven days duration died of diphtheria at Winchester Hospital. The child had not been immunised. A toxigenic strain of Corynebacterium diphtheriae var mitis, which fermented sucrose, and group A streptococci were isolated from her throat. This was the first death from diphtheria in England and Wales since 1975. The child was from an army family which had contacts at a number of barracks. Six contacts were identified as carriers. On 5 September, a five year old Bangladeshi child from London was admitted to hospital with diphtheria. She required a tracheostomy the next day. A toxigenic strain of C. diphtheriae var mitis (sucrose fermenting) was isolated from her throat and from the throats of her three year old brother and seven year old sister. No clear link has been established between the two cases. "Ring" control measures consisting of swabbing noses and throats of close contacts and immunisation are being used to limit the spread of infection.

It is usually recommended that at least two and preferably three pairs of nose and throat swabs should be taken from close contacts at intervals of at least 48 hours. Previously immunised children under ten years of age who are close contacts should be given chemoprophylaxis (e.g. oral erythromycin 125-250 mg (according to age) six hourly for five

days) as well as the first dose of a primary course of three doses of toxoid. Close contacts aged ten years and over may be offered immunisation with the adult type toxoid containing 2 Lf diphtheria toxoid. Flocculation units (Lf) refer to the specific flocculating activity of toxoid against an international reference diphtheria antitoxin. If the adult toxoid is not available the Communicable Disease Surveillance Centre suggest one-fifth (0.1 mL) of the childhood dose of diphtheria toxoid (purified toxoid aluminium phosphate - PTAP; 25 Lf units). Unimmunised adults should also be given chemoprophylaxis e.g. oral erythromycin 250 mg six hourly for five days.

Cases and carriers of toxigenic strains of C. diphtheriae should normally be isolated until at least three sets of negative nose and throat swabs have been obtained, beginning at least seven days after cessation of chemotherapy and at minimum intervals of three days.

Editorial Comment

In a recent study, 5.4% of Melbourne University students and 10.6% of school children in the Western suburbs of Sydney were found to be non-immune to diphtheria by Schick test[1]. Therefore, even with the high national immunisation acceptance rate, persisting pools of susceptible young individuals still exist in the community. They could be infected by a symptom-free carrier, and suffer clinical diphtheria or possibly transmit the infection to non-immune siblings.

Reference

1. MJA (1981) 1 : 128

(Continued from page 1)

the Queensland Institute of Medical Research. The extent and significance of Japanese encephalitis virus activity in Indonesia is unknown, particularly since the interpretation of serological results is hampered by extensive antigenic cross-reactivities among the flaviviruses. The known primary vectors of the disease are Culex tritaeniorhynchus and C. gelidus. C. quinquefasciatus is a secondary vector.

. A further 20 cases of echovirus type 11 infections were reported this period by the State Health Laboratory Services, Perth. Of these, 11 presented with aseptic meningitis and 17 were in infants aged less than one year of age (see CDI 82/18).

Other reports of interest include:

. A 35 year old female was admitted recently to Fairfield Hospital, Melbourne, with a six week history of fever and two days of severe right-sided chest pain. A hepatic amoebic abscess was diagnosed, and the patient responded well to treatment with metronidazole.

. A 73 year old non-immunised female was admitted to Fairfield Hospital with severe tetanus requiring the complete paralysis regimen and artificial respiration. In recent years, most tetanus cases admitted to the hospital have been in elderly patients, indicating that many old people in the community are probably not immunised against the disease.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 2/9/82 - 15/9/82 BULLETIN NUMBER . 82/19
VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
0100 ADENOVIRUS NOT TYPED	15		2			1	11	2	31
0101 ADENOVIRUS TYPE 1	4			1	5	2			12
0102 ADENOVIRUS TYPE 2	3		4	1	1	1			10
0103 ADENOVIRUS TYPE 3			1					1	2
0105 ADENOVIRUS TYPE 5			1	2	1	1		1	6
0106 ADENOVIRUS TYPE 6	1								1
0109 ADENOVIRUS TYPE 9						1			1
0119 ADENOVIRUS TYPE 19			1						1
0122 ADENOVIRUS TYPE 22								1	1
0131 ADENOVIRUS TYPE 31			1						1
0199 ADENOVIRUS TYPING PENDING			1		8	4			13
0201 INFLUENZA A VIRUS	7		2	26		19		5	59
0202 INFLUENZA A VIRUS SUBTYPE H3N2	3			10	9	13	6		41
0203 INFLUENZA B VIRUS	20		3	15	1	10	46	19	114
0301 PARAINFLUENZA VIRUS TYPE 1	1	1						2	4
0302 PARAINFLUENZA VIRUS TYPE 2								2	2
0303 PARAINFLUENZA VIRUS TYPE 3					1	1	2	8	12
0399 PARAINFLUENZA VIRUS TYPING PENDING							2		2
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	4	13	4	21	20	8	2	41	113
0500 RHINOVIRUS (ALL TYPES)	2			2	4	1	4		13
0600 MYCOPLASMA PNEUMONIAE	38		11	4		2	22	9	86
0700 ORNITHOSIS-PSITTACOSIS	1			1					2
0800 COXSACKIEVIRUSES GROUP A - NOT TYPED				1		2			3
0809 COXSACKIEVIRUS A9				1					1
0903 COXSACKIEVIRUS B3					1				1
0905 COXSACKIEVIRUS B5				2	2			1	5
1006 ECHOVIRUS TYPE 6			2					1	3
1011 ECHOVIRUS TYPE 11								20	20
1018 ECHOVIRUS TYPE 18				3			1	1	5
1101 POLIOVIRUS TYPE 1		1		1				1	3
1103 POLIOVIRUS TYPE 3						1			1
1104 POLIOVIRUS-VACCINAL STRAIN					7				7
1200 MUMPS VIRUS	10	2	1	1			6	4	24
1300 HERPES VIRUS GROUP-NOT TYPED	16			2		2		1	21
1301 HERPES SIMPLEX VIRUS NOT-TYPED				3				46	49
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	5	1							6
1303 VARICELLA-ZOSTER VIRUS	8		2			2		2	14
1306 HERPES SIMPLEX TYPE 1	6			15		14	12		47
1307 HERPES SIMPLEX TYPE 2	70			40		15	35		160
1399 HERPES VIRUS TYPING PENDING			11		6	3			20
1401 COXIELLA BURNETI	4					2	11		17
1521 MEASLES VIRUS	2			2			2		6
1522 RUBELLA VIRUS	2			2	2		2	3	11
1532 HEPATITIS B ANTIGEN	18		13	47		17	7	5	107
1535 HEPATITIS A ANTIBODY	5			4		7	2	11	29
1541 CHLAMYDIA A - C TRACHOMATIS	15					1		60	76
1556 CMV - CYTOMEGALOVIRUS	5		4	7	4	2	5	6	33
1564 ROTAVIRUS	10	5	21	6	11	11	5		69
1599 ENTEROVIRUS TYPING PENDING			3		1				4
ROSS RIVER VIRUS							1		1
ASTROVIRUS	5								5
SMALL VIRUS (LIKE) PARTICLE	1								1
DENGUE							1		1
KUNJIN VIRUS							1		1
ARBO. GROUP B.							1		1
Total	281	23	88	220	84	143	187	253	1,279

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 2/9/82 to 15/9/82 .... 82/19

Viral Identifications by Clinical Information Table 1.
Code 00,99 -No ill or data; 01,02,11,12 -Respiratory; E3 -Encephalitis; M3 -Meningitis; 04 -Paralysis; 05,13 -CNS other unspec.; 07,49 -GI; 17,47 -Hepatic; 19 -CVS; 89 -Urinary; 06 -Skin/mucous.

VIRUS OR VIRAL ANTIGEN	No-ill or data	Respiratory	Encephalitis	Meningitis	Paralysis	CNS other unspec	GI	Hepatic	CVS	Urinary	Skin/mucs memb
0101 ADENOVIRUS TYPE 1.....		7					4				
0102 ADENOVIRUS TYPE 2.....		5					6				
0105 ADENOVIRUS TYPE 5.....	1	4					1				
0109 ADENOVIRUS TYPE 9.....							1				
0131 ADENOVIRUS TYPE 31.....							1				
0201 INFLUENZA A VIRUS.....	2	38	1	2		1	1		1	1	
0202 INFLUENZA A VIRUS SUBTYPE H3N2		35		1					1		
0203 INFLUENZA B VIRUS.....	5	84	2	2		6			3		1
0301 PARAINFLUENZA VIRUS TYPE 1....		4									
0302 PARAINFLUENZA VIRUS TYPE 2....		2									
0303 PARAINFLUENZA VIRUS TYPE 3....		8									1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....	2	101				2	2	1			
0500 RHINOVIRUS (ALL TYPES).....		12									
0600 MYCOPLASMA PNEUMONIAE.....	11	65							1		1
0700 ORNITHOSIS-PSITTACOSIS.....	1	1									
0903 COXSACKIEVIRUS B3.....		1									
0905 COXSACKIEVIRUS B5.....		2		3			1				
1006 ECHOVIRUS TYPE 6.....							2				
1011 ECHOVIRUS TYPE 11.....	1	2		11		3					
1018 ECHOVIRUS TYPE 18.....		1					2				3
1101 POLIOVIRUS TYPE 1.....		3									
1104 POLIOVIRUS-VACCINAL STRAIN....		3					3				
1200 MUMPS VIRUS.....	3	3	1	4		1					1
1301 HERPES SIMPLEX VIRUS NOT-TYPED	2	1	1							1	26
1302 EPSTEIN-BARR VIRUS (EB VIRUS).	1							1			
1303 VARICELLA-ZOSTER VIRUS.....	6										
1306 HERPES SIMPLEX TYPE 1.....		5			1					1	3
1307 HERPES SIMPLEX TYPE 2.....											6
1401 COXIELLA BURNETI.....	2	1						1	1		1
1521 MEASLES VIRUS.....	1										4
1522 RUBELLA VIRUS.....	4										7
1532 HEPATITIS B ANTIGEN.....	42							63			
1535 HEPATITIS A ANTIBODY.....	5							24			
1556 CMV - CYTOMEGALOVIRUS.....	1	15				1		1		4	
1564 ROTAVIRUS.....							69				
ASTROVIRUS		1					5				
SMALL VIRUS (LIKE) PARTICLE							1				
DENGUE											1
ARBO. GROUP B.			1								
Total.....	90	404	6	23	1	14	99	91	7	7	80

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 2/9/82 to 15/9/82 ... 82/19
Viral Identifications by Clinical Information Table 2.
Code 10 -Eye; 59 -Genital; 39 -Endo/sal gland;
38 -RES; 29 -Muscle/joint; 69 -Congenital; F8 -PUO;
G8 -Fever/malaise; 09 -Other; A1 -SIDS ...

VIRUS OR VIRAL ANTIGEN	Eye	Genital	Endo/sal gland	RES	Muscle/joint	Congenital	PUO	Fever/malaise	Other	SIDS
0101 ADENOVIRUS TYPE 1.....							1			1
0103 ADENOVIRUS TYPE 3.....	2					1				
0106 ADENOVIRUS TYPE 6.....								1		
0119 ADENOVIRUS TYPE 19.....	1									
0122 ADENOVIRUS TYPE 22.....		1								
0201 INFLUENZA A VIRUS.....					1		5	15	1	
0202 INFLUENZA A VIRUS SUBTYPE H3N2							3	6		
0203 INFLUENZA B VIRUS.....			1		7		2	13	4	
0303 PARAINFLUENZA VIRUS TYPE 3....					2			1	1	
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....					2			3	1	1
0500 RHINOVIRUS (ALL TYPES).....									1	
0600 MYCOPLASMA PNEUMONIAE.....			1		2		1	5	2	
0809 COXSACKIEVIRUS A9.....								1		
1006 ECHOVIRUS TYPE 6.....								1		
1011 ECHOVIRUS TYPE 11.....								2		1
1018 ECHOVIRUS TYPE 18.....								1		
1103 POLIOVIRUS TYPE 3.....										1
1104 POLIOVIRUS-VACCINAL STRAIN....										3
1200 MUMPS VIRUS.....		1	8	1			2		1	
1301 HERPES SIMPLEX VIRUS NOT-TYPED		22					1			
1302 EPSTEIN-BARR VIRUS (EB VIRUS).			1	2				1		
1303 VARICELLA-ZOSTER VIRUS.....				1						
1306 HERPES SIMPLEX TYPE 1.....	2	17	1					4		
1307 HERPES SIMPLEX TYPE 2.....		154								
1401 COXIELLA BURNETI.....					1		2	11		
1521 MEASLES VIRUS.....					1			1		
1522 RUBELLA VIRUS.....								1		
1532 HEPATITIS B ANTIGEN.....									2	
1541 CHLAMYDIA A - C TRACHOMATIS...		76								
1556 CMV - CYTOMEGALOVIRUS.....		1	1			3	3	3	2	
ROSS RIVER VIRUS					1					
DENGUE					1					
KUNJIN VIRUS					1					
Total.....	5	272	13	4	19	4	20	70	15	7