AUSTRALIA

Bulletin Number 79/19
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Communicable Diseases Intelligence

Virus reports - 742 - with the reports from one laboratory having been delayed in the mail yet again. This is the third different laboratory whose reports have been delayed in recent weeks, in each case due to circumstances beyond the laboratory's control.

Reports of interest include:

. Arbovirus isolations - five reports of dengue fever, four from Fairfield Hospital, all patients having been to Indonesia (including Bali and Timor), and a case of dengue type 2 reported by the State Health Laboratory, Brisbane, from a patient who had been to the Philippines and Malaysia.

Of 12 reports of Ross River Virus infection, 10 were from Queensland and two from the State Health Virus Laboratory, Perth. The samples for the latter had been received from Wyndham (North Western Australia) and Darwin (Northern Territory).

An additional report of a group A arbovirus infection, detected by HI, from a woman recently returned from Fiji, was received from Victoria.

. Poliomyelitis type 2 (vaccine associated strain) was isolated by the Royal Alexander Hospital for Children from the urine, faeces and naso-pharyngeal aspirate of an eight month old boy with lower motor neurone paralysis. Cytomegalovirus infection was also demonstrated by a positive IgM titre of 1:64. The child had been admitted from New Caledonia with Hirschsprung's disease approximately two months previously and had been in the hospital ever since. It is not known whether he had ever received trivalent oral polio vaccine.

The significance of the isolations in relation to the paralysis is uncertain.

. Rubella - The number of rubella isolations reported over the last four periods is increasing - 3,9,16 and 27.

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Nosocomial Pseudomonas cepacia infections

The MMWR of June 29 and August 31, 1979, reported three cases of serious nosocomial infection with Pseudomonas cepacia in a large university hospital in the United States. Organisms were isolated from blood cultures from 2 patients with septicaemia and from a mediastinal wound infection of the third patient.

All three infections were traced to pooled cryoprecipitate administered intravenously. The cryoprecipitate had apparently become contaminated during thawing and pooling. Prior to administration to patients, up to 20 units of cryoprecipitate were combined in the hospital's blood bank. To prepare the combined pools, the frozen packs were placed in a 37 C water bath to be gently thawed. They were blotted dry, and the two protective tabs covering the administration ports were dried with clean gauze. Cryoprecipitate pools were generally administered within 2 hours after they had been prepared.

A sample of the cryoprecipitate pool received by the last patient was obtained and cultured, and it grew P. cepacia. Moreover, cultures of water in the warming bath used to thaw the frozen packs were found to contain 1.8×10^8 P. cepacia per ml, although each day these water baths were cleaned with povodine-iodine, and fresh water was added. The Pseudomonas isolates from the 3 patients, the cryoprecipitate pool, and the water bath had the same antimicrobial susceptibility patterns.

Investigations into the possible route of entry of the organisms into the cryoprecipitate showed that as little as 0.025 ml of water, placed between the unopened tabs of the packs, could contaminate the outlet port of the pack when the tabs were pulled apart.

Editor's comments

It is considered unlikely that such an incident would occur in Australia, since the design and handling of the cryoprecipitate packs is different. However the incident provides an important reminder of the risk of Pseudomonas cepacia infections from hospital equipment which has been kept in water or dilute antiseptic solutions.

The hospital environment is conducive to the growth of pseudomonads, and the hazard presented by these organisms to compromised patients is enhanced by a frequent misconception on the part of hospital staff about the efficacy of the commonly used disinfectants. P. cepacia has been involved in previous outbreaks in hospitals, including one in a Sydney hospital in 1975[1]. The source of infection was a tank of water ("steam condensate") for use by theatre and the pharmacy. Supplementary ultra-violet light sterilization had failed, resulting in 40 cases of P. cepacia infection.

P. cepacia has been isolated from contaminated antiseptic detergent solutions used for urinary catheter kits, cystoscopes, bronchoscopes, wet "sterile" cotton wool or rayon swabs, intravenous giving sets and surgical instruments[2,3,4]. Aqueous solutions of the quaternary ammonium compounds (AQACs), such as benzalkonium chloride and cetrimide, although effective against gram positive cocci, are prone to contamination by P. cepacia. AQAC's appear susceptible to inactivation by organic material such as container corks and gauze. In addition to its capacity to survive and multiply in hospital water supplies, P. cepacia has also been shown to grow in distilled water[5] and in a 1 in 30 dilution chlorhexidine/cetrimide in distilled water[6]. The addition of 4% v/v isopropyl alcohol appears to reduce, but not eliminate, the risk of contamination[7].

Hospital staff should be educated in the proper use of all disinfectants and their limitations. Where a particular brand of disinfectants is used, it is imperative that use complies exactly with the recommendations of the manufacturer. Disinfectant use should be supported by bacterological quality control on a regular basis if outbreaks due to misuse are to be avoided.

Although the above applies to hospitals, it is emphasised that the problem could exist in other clinical settings, such as treatment rooms in clinics or private surgeries.

References

1. Levey J M Guinness M D G (1976) Annual Scientific Meeting of the Australian Society of Microbiologists. (Personal communication)

2. N Engl Med J (1970) 282 : 33-35

3. JAMA (1976) 236 2415-2417

4. Ibid 2418-2419

5. Appl Microbiology (1973) 25 : 475-483

6. J Clin Path (1971) 24 : 708-711

7. BMJ (1967) 2 : 153-155

Pseudomonas cepacia contamination of local anaesthetic

The Communicable Disease Report from the UK has reported (79/33, 79/36) contamination, by P. cepacia of 9 out of 56 units of blood during routine bacteriological examination at a Regional Transfusion Centre. The contamination had occurred during bleeding of donors whose skin had been anaesthetised using local anaesthetic 'ampins' contaminated with the same organism. 'Ampins' are single dose (0.3ml) pressurised containers of 1% and 2% lignocaine hydrochloride and, in one batch examined (485/I), 9/14 were contaminated.

The contaminated batch had been imported from Spain early in 1979.

Editor's note:

The Commonwealth Department of Health has been informed that a second batch (494L) has been found to be contaminated, and that the U.K. Department of Health and Social Security has withdrawn the product temporarily as a precautionary measure. These "ampins" have not been approved for use in Australia but it is possible that small quantities have been imported privately.

Legionnaires' disease in South Australia (contributed by T.W. Steele, D.J. Merry, and J.L. Pitt of the Institute of Medical and Veterinary Science, Adelaide)

The diagnosis of severe Legionnaires' disease has been made with confidence in two patients in South Australia. The first patient, a 36 year old woman was admitted to hospital in February 1979 with a 5 day history of malaise, cough and fever. Although treated with amoxycillin her condition deteriorated. She was treated with erythromycin and slowly improved over several weeks with complete resolution of the signs of bilateral pneumonia. Bacteriological cultures of sputum and pleural fluid were negative. Virological serology on acute and convalescent sera was negative. A five-fold rise in antibody to 1/80 against M. pneumoniae was demonstrated. Using Philadelphia I Legionella antigen, the indirect fluorescent antibody test showed a rise in total antibody from less than 1/64 to 1/4096. The major part of this rise occurred around the 10th day of the illness when most of the antibody against Legionella was shown to be IgM.

The second patient was admitted to hospital in August 1979. (This case was briefly reported in CDI 79/18 - Ed.) This 34 year old man gave a 4 day history of fever, gastro-intestinal and lower respiratory tract symptoms, and had pneumonia. He failed to improve when given intra-muscular penicillin. He was also found to have acute renal failure. He developed progressive, intractable respiratory failure in spite of treatment with erythromycin and died on the 11th day of the illness. Routine bacteriological and virological investigations were negative. Examination of sputum and tracheal aspirates with direct fluorescent antibody to Group I Legionella gave a positive result. Rod shaped bacteria with the morphological and cultural characteristics of Legionella were isolated on charcoal yeast extract agar from splenic tissue of guinea pigs injected with sputum and when post-mortem lung tissue was plated directly on this medium. These bacteria showed specific staining with the direct fluorescent antibody test. Indirect fluorescent antibody to Philadelphia I antigen rose from less than 1/32 to 1/1024 with a corresponding rise in specific IgM antibody to 1/512.

These two patients showed an unequivocal and rapid rise in total antibody and in IgM antibody to the Philadelphia I antigen. The rise was detected by the 10th day of the illness. Considerable caution must be exercised in attributing significance to the result of a single measurement of antibody to Legionella as elevated titres of IgG antibody between 1/64 and 1/1024 have been found in surveys of healthy individuals in South Australia.

We gratefully acknowledge the major part played by C.D.C., Atlanta in providing the necessary bacterial suspensions and serological reagents to make a definitive diagnosis in these patients and for their continuing support.

Human salmonellosis, January to June 1979. Preliminary analysis

During the period under review 3,399 reports of salmonella isolations from humans were received from all States and Territories.

A total of 88 different serotypes were isolated. The most prevalent were:

S. typhimurium	-	1354
S. muenchen	-	786
S. chester	-	94
S. infantis	-	88
S. newport	-	77
S. saint-paul	-	76
S. havana	-	71
S. bovis-morbificans	-	62
S. virchow	-	61

The high incidence of *S. muenchen* is due to an outbreak in W.A. associated with poultry (CDI 79/4 and 79/6). Although no recognised outbreaks account for large proportions of isolations of other serotypes, it is interesting that almost half of the *S. infantis* reports were from Victoria, almost half of the *S. newport* reports were from N.S.W., and the majority of *S. virchow* isolates were in Queensland. Amongst serotypes less frequently isolated, all of the 19 *S. thompson* reports came from Queensland, and all of the 10 *S. livingstone*, half of the 42 *S. onderstepoort* and half of the 19 *S. wandsworth* reports came from Western Australia.

There were 38 *S. typhi* and 34 *S. paratyphi* isolations (22 *S. paratyphi B* and 12 *S. paratyphi A*.) Where information was available on the history, overseas travel featured prominently.

The age of the patient was stated on 2603 reports. The breakdown by age of the isolates was: 0-5 mths 247; 6-11 mths 289; 1-4 yrs 841; 5-14 yrs 388; 15-24 yrs 255; 25-59 yrs 406; and 60 + yrs 183. This shows that 53% of these reports involved children up to 5 years of age, but the possibility of a reporting bias for disease in this age group should be considered when evaluating the significance of this result.

The annual rate of reporting of isolations in the first six months of 1979 was more than double that for 1978. This increase, and the possible previously unrecognised outbreaks all require further investigation.

Kawasaki disease

Fairfield Hospital reports that a case of Kawasaki disease (mucocutaneous lymph node syndrome) has been diagnosed in a child aged 2 years.

This is the thirteenth patient with this syndrome recognised at Fairfield Hospital. First described in Japan in 1967, the main features of the disease are fever, conjunctivitis, pharyngitis, polymorphous rash, oedema, and lymphadenopathy. However cardiac, liver, joint, renal, C.N.S. and blood involvement may also occur. Common differential diagnoses are severe scarlet fever, hypersensitivity state, collagen disease or septicaemia. The diagnosis is made by exclusion of other diseases and recognition of the multisystem features of the syndrome.

The aetiology is obscure, although it has been suggested that it might, in part be due to an abnormal immunological response.

Tetanus

A man aged 75 was admitted to Fairfield Hospital on August 27 with tetanus. One week previously he punctured the sole of his foot on a piece of wood whilst walking barefoot; his symptoms developed six days later. At the time of writing, he was being treated by a total paralysis regimen and his condition was satisfactory.

One of the main causes of tetanus in our community is gardening injuries in elderly people. This is probably because patients in this age group have not been immunized against tetanus previously or their immunity has waned.

There have been 14 and 13 cases of tetanus notified to the Department of Health during 1978 and 1977 respectively. This is only the second case notified this year.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

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REPORTING PERIOD - 6-9-79 - 19-9-79 BULLETIN NUMBER 79-19

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PMH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
0100 ADENOVIRUS NOT TYPED................		1			2	4	11	1	19
0101 ADENOVIRUS TYPE 1..................				1	2	2		1	6
0102 ADENOVIRUS TYPE 2..................	2	1	2	3	4	3		3	18
0103 ADENOVIRUS TYPE 3..................	2				1			1	4
0104 ADENOVIRUS TYPE 4..................						2			2
0105 ADENOVIRUS TYPE 5..................			1		1				2
0107 ADENOVIRUS TYPE 7..................				1	1	6			8
0111 ADENOVIRUS TYPE 11.................								1	1
0114 ADENOVIRUS TYPE 14.................			2						2
0119 ADENOVIRUS TYPE 19.................								2	2
0199 ADENOVIRUS TYPING PENDING..........			2		10	1			13
0201 INFLUENZA A VIRUS..................	5			2	2	9	1	1	20
0203 INFLUENZA B VIRUS..................	1					2	1	20	24
0301 PARAINFLUENZA VIRUS TYPE 1.........	1						1	1	3
0302 PARAINFLUENZA VIRUS TYPE 2.........							1		1
0303 PARAINFLUENZA VIRUS TYPE 3.........						5	1	1	7
0304 PARAINFLUENZA VIRUS TYPE 4.........						1			1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)...	2	10		3	18	43	21	7	104
0500 RHINOVIRUS (ALL TYPES).............				1	2		1	1	5
0600 MYCOPLASMA PNEUMONIAE..............		2		1		6	7	3	19
0700 ORNITHOSIS-PSITTACOSIS.............						1			1
0800 COXSACKIEVIRUSES GROUP A - NOT TYPED................................						1			1
0903 COXSACKIEVIRUS B3..................				1		2		1	4
0904 COXSACKIEVIRUS B4..................		1		2	3			3	9
0906 COXSACKIEVIRUS B6..................				1					1
1004 ECHOVIRUS TYPE 4...................								1	1
1006 ECHOVIRUS TYPE 6...................						1			1
1011 ECHOVIRUS TYPE 11..................				11	5	15		2	33
1023 ECHOVIRUS TYPE 23..................			3						3
1030 ECHOVIRUS TYPE 30..................				3		1			4
1031 ECHOVIRUS TYPE 31..................						1			1

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VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES-CONTINUED

VIRUS OR VIRAL ANTIGEN	ICPMH (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR- FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
1101 POLIOVIRUS TYPE 1....................		1		1			1	1	4
1102 POLIOVIRUS TYPE 2....................		4		1		1			6
1103 POLIOVIRUS TYPE 3....................						4		2	6
1104 POLIOVIRUS-VACCINAL STRAIN...........						1			1
1200 MUMPS VIRUS..........................	2	2		5			2	1	12
1300 HERPES VIRUS GROUP-NOT TYPED.........				7	2			1	10
1301 HERPES SIMPLEX VIRUS-NOT TYPED.......	2	1		2		1	16	28	50
1303 VARICELLA-ZOSTER VIRUS...............		1		1		3	2	1	8
1306 HERPES SIMPLEX TYPE 1................				22					22
1307 HERPES SIMPLEX TYPE 2................				15					15
1399 HERPES VIRUS TYPING PENDING..........			6	1		1			8
1401 COXIELLA BURNETI.....................				5		2	15		22
1512 VACCINIA VIRUS.......................				2				2	4
1514 MOLLUSCUM CONTAGIOSUM................						1			1
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)................................				1		2			3
1521 MEASLES VIRUS........................					1	1	6		8
1522 RUBELLA VIRUS........................	4					8	6	9	27
1530 HEPATITIS A VIRUS....................								3	3
1532 HEPATITIS B ANTIGEN..................	1		6	24		8	2	9	50
1535 HEPATITIS A ANTIBODY.................						4			4
1541 CHLAMYDIA A - TRIC TYPE..............								17	17
1556 CMV - CYTOMEGALOVIRUS................		1		10	3	6	8	3	31
1564 ROTAVIRUS............................			6	16		31		5	58
1571 ENTEROVIRUS TYPE 71 (BECR)...........				2					2
1599 ENTEROVIRUS TYPING PENDING...........			3		16	8			27
ARBO. GROUP A.				1					1
ROSS RIVER VIRUS							10	2	12
PARVOVIRUS (LIKE)						5			5
DENGUE				4			1		5
Total.....................................	22	25	31	150	73	193	114	134	742

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VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS

VIRUS OR VIRAL ANTIGEN	FA	BL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
0100 ADENOVIRUS NOT TYPED................	13	2	5								20
0101 ADENOVIRUS TYPE 1....................	1		5								6
0102 ADENOVIRUS TYPE 2....................	8		6					1	2	1	18
0103 ADENOVIRUS TYPE 3....................	1		1			1			1		4
0104 ADENOVIRUS TYPE 4....................	1					1					2
0105 ADENOVIRUS TYPE 5....................	1		1								2
0107 ADENOVIRUS TYPE 7....................	4		1			1	2				8
0111 ADENOVIRUS TYPE 11...................							1				1
0114 ADENOVIRUS TYPE 14...................	1					1					2
0119 ADENOVIRUS TYPE 19...................						1			1		2
0199 ADENOVIRUS TYPING PENDING...........	10		3								13
0201 INFLUENZA A VIRUS....................		13	7								20
0203 INFLUENZA B VIRUS....................		12	11	1						1	25
0301 PARAINFLUENZA VIRUS TYPE 1..........		1	2								3
0302 PARAINFLUENZA VIRUS TYPE 2..........		1									1
0303 PARAINFLUENZA VIRUS TYPE 3..........		5	2								7
0304 PARAINFLUENZA VIRUS TYPE 4..........			1								1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)....		8	96								104
0500 RHINOVIRUS (ALL TYPES)..............			5								5
0600 MYCOPLASMA PNEUMONIAE...............		18									18
0700 ORNITHOSIS-PSITTACOSIS..............		1									1
0800 COXSACKIEVIRUSES GROUP A - NOT TYPED............................			1								1
0903 COXSACKIEVIRUS B3....................	3	1									4
0904 COXSACKIEVIRUS B4....................	1		6	1						1	9
0906 COXSACKIEVIRUS B6....................	1										1
1004 ECHOVIRUS TYPE 4.....................			1								1
1006 ECHOVIRUS TYPE 6.....................	1										1
1011 ECHOVIRUS TYPE 11....................	16		13	10							39
1023 ECHOVIRUS TYPE 23....................	3										3
1030 ECHOVIRUS TYPE 30....................			2	1						1	4
1031 ECHOVIRUS TYPE 31....................	1										1
1101 POLIOVIRUS TYPE 1....................	1		3								4

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VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS-CONTINUED

VIRUS OR VIRAL ANTIGEN	FA	BL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
1102 POLIOVIRUS TYPE 2..................	2		2				2				6
1103 POLIOVIRUS TYPE 3..................	4		1							1	6
1104 POLIOVIRUS-VACCINAL STRAIN..........	1										1
1200 MUMPS VIRUS........................		7	2	4							13
1300 HERPES VIRUS GROUP-NOT TYPED........			1		8					1	10
1301 HERPES SIMPLEX VIRUS-NOT TYPED......		2	5		21				21	2	51
1303 VARICELLA-ZOSTER VIRUS..............		7			1						8
1306 HERPES SIMPLEX TYPE 1...............	1		11		1	2			3	4	22
1307 HERPES SIMPLEX TYPE 2...............					1				14		15
1399 HERPES VIRUS TYPING PENDING.........			6						2	1	9
1401 COXIELLA BURNETI....................		22									22
1512 VACCINIA VIRUS......................			1		1					3	5
1514 MOLLUSCUM CONTAGIOSUM...............					1						1
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)........................					3						3
1521 MEASLES VIRUS.......................		8		1							9
1522 RUBELLA VIRUS.......................		25	2								27
1530 HEPATITIS A VIRUS...................		3									3
1532 HEPATITIS B ANTIGEN.................		50									50
1535 HEPATITIS A ANTIBODY................		4									4
1541 CHLAMYDIA A - TRIC TYPE.............						1			16		17
1556 CMV - CYTOMEGALOVIRUS...............		4	16				12		3	1	36
1564 ROTAVIRUS...........................	58										58
1571 ENTEROVIRUS TYPE 71 (BRCR)..........	1									1	2
1599 ENTEROVIRUS TYPING PENDING..........	14		12	2			1			1	30
ARBO. GROUP A		1									1
ROSS RIVER VIRUS		12									12
PARVOVIRUS	5										5
DENGUE (TYPE 3)		5									5
Total....................................	153	212	231	20	37	8	18	1	63	19	762