AUSTRALIA Communicable Diseases Intelligence

Bulletin Number 79/21
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Virus reports this period - 760. Reports of interest include:

. Echovirus type 11 - 23 reports. All of the 12 from Fairfield Hospital in Victoria were cases of viral meningitis. During the last four reporting periods - approximately two months - a total of 111 Echovirus 11 isolations have been reported compared with four for the same period in 1978. The recent outbreak was first reported in South Australia where the symptomatology was diverse (CDI 79/17). Reports from that State have since decreased while reports from Victoria have increased. Approximately 35% of the 84 isolations reported during the last three periods have been obtained from patients with the symptom code 'meningitis/encephalitis'. Three quarters were from children.

An outbreak of Echovirus type 11 infections in Western Australia was reported earlier this year (CDI 79/9).

. Rubella - 51 reports, 21 of which were from Western Australia, all of whom showed evidence of recent infection. Figures for the previous five reporting periods for all laboratories combined, commencing early August, were 3, 9, 16, 31 and 26. One of the Western Australian cases from whom this virus was isolated was a 13 year old girl with encephalomyelitis.

. Adenovirus type 19 - normally associated with respiratory tract infections and conjunctivitis, is being isolated with increasing frequency by the State Health Laboratory in Perth, W.A., from genital sources. It is being detected during testing for chlamydial infections, from both sexes. During 1978, three out of a total of 39 reported isolations were from genital sources. This year from January-June, 19 out of 30 and from July till mid-October, 33 out of 51 isolations were genital in origin - i.e. almost 65%. It is not known whether there is any correlation with symptomatology.

. Influenza - an isolation of Influenza A subtype H3N2 from a three year old girl, in June this year, has been confirmed by the Institute of Medical and Veterinary Science, Adelaide. In addition, nine H1N1 isolations were reported, one by the Commonwealth Serum Laboratories, Melbourne (CSL). There were 46 reports last period.

A total of 21 Influenza type B isolations were also reported this period from contributing laboratories in all States and the CSL.

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Recent advances in the chemotherapy of tuberculosis (Based on Weekly Epidemiological Record, 1979, 38, 289-290)

A WHO group[1] has recently formulated the following conclusions and guidelines on the treatment of tuberculosis.

Current Progress in Tuberculosis Chemotherapy

1. Bacteriological Basis of Short-Course Chemotherapy

The purpose of tuberculosis chemotherapy is to sterilise lesions quickly and completely, and the drugs are chosen to avoid bacterial resistance and to avert relapses.

Despite the high proportion of mutants resistant to drugs among wild strains of tubercle bacilli, selection of resistant bacilli is easily avoided by appropriate combinations of drugs to which the bacilli are sensitive.

For rapid and complete sterilisation, drugs must be chosen for the specific activity against various types of bacterial populations present in lesions; for example, actively multiplying bacilli, as in the walls of cavities; slowly multiplying bacilli inside macrophages, and bacilli in solid caseous lesions (called 'persisters'), which multiply intermittently.

On the large populations of bacilli actively multiplying at neutral pH on the walls of pulmonary cavities, streptomycin, isoniazid and rifampicin are bactericidal; ethambutol and PAS are bacteriostatic; and pyrazinamide is inactive. The most active drug against the small bacterial population that multiplies slowly inside macrophages in an acid medium is pyrazinamide followed by isoniazid plus rifampicin. Streptomycin, like any other aminoglycoside antibiotic, is inactive in acid media. Only rifampicin is bactericidal for the third type of bacterial population, all other drugs being inactive.

The isoniazid-rifampicin combination, which is bactericidal for all these bacterial populations, constitutes the basis for short-course chemotherapy. To enhance its effectiveness and avert primary and acquired resistance, it is advisable to add one or two supplementary drugs in the initial intensive phase of treatment.

2. Effectiveness of Short-Course Chemotherapy

From the many studies and controlled clinical trials carried out in the last ten years in different parts of the world, a few conclusions may be drawn on which there is consensus:

(a) The rifampicin-isoniazid association is essential in both the initial and the continuation phase of short-course tuberculosis chemotherapy.

(b) Streptomycin and pyrazinamide contribute to the success of short-course chemotherapy as supplementary drugs in the initial phase, and in therapeutic regimens resorted to when rifampicin is unavailable.

(c) For patients with bacteriologically-confirmed tuberculosis the overall duration of the short-course regimens must be six to nine months for 100 per cent effectiveness.

(d) It is essential that the initial phase of the short-course chemotherapy be intensive, with the drugs administered daily.

3. Adverse Reactions to, and Toxicity of Antituberculosis Drugs

Though antituberculosis drugs are, on the whole, well tolerated, they can cause adverse effects; the frequency of these effects varies with the drugs and their associations, and can also vary from one country to another.

In six to nine-month regimens, the total frequency of secondary effects varies from one country and study to another; however, the number of cases in which treatment has to be discontinued permanently is usually lower than 3 per cent.

4. Effectiveness of Chemotherapy as a Means for the Control of Tuberculosis

The most powerful control method for reducing the problem of tuberculosis is case finding plus chemotherapy. The two measures are inseparable; case finding is of little use as a control measure unless followed by chemotherapy, which cannot be practised without it.

It is difficult to gauge accurately the impact of chemotherapy, as an isolated factor, on transmission of the tuberculosis infection because this epidemiological index measures the overall effects of the methods applied under programmes and of any improvements in general living conditions. It has been estimated, however, that case finding and chemotherapy have accelerated the natural decline of the risk of tuberculosis infection in the developed countries to an annual rate two or three times faster than prior to the discovery of the antituberculosis chemotherapeutic drugs.

References

(1) Third Seminar on Tuberculosis Chemotherapy, PASB, Washington D.C., U.S.A., 27-30 March 1979.

Q fever in Victoria

CDI 79/9 and 79/12 reported the identification of Coxiella burneti in a number of abattoir workers in Victoria. These infections were suspected of being associated with the slaughter of wild goats.

A total of 213 reports of Coxiella burneti infections have been received from Victoria for the nine months January-September 1979, compared with 20 for the same period last year. Although Q fever occurred in workers from several abattoirs throughout the State, the

greatest number of cases was associated with the abattoir at Donald. By mid-August, 96 clinical cases had been notified to the Health Commission of Victoria from that town.

Of the 96 cases, positive serology, as determined by a fourfold rise in titre on paired samples tested in parallel at Fairfield Hospital, was obtained in 61. The majority of those affected were, as might be expected, meat or carcass handlers. However, other occupations were also involved: labourers/cleaners (9 cases); managerial/clerical, foremen, livestock handlers/drovers (2 each); shop assistant, skin buyer, night watchman (1 each). Three of the cases were females.

Although subsequent batches of feral goats arrived from Queensland, the first batches, which arrived between February 8 and 12, came from Cobar and Bourke in western New South Wales. The first case of Q Fever at the Donald abattoir occurred towards the end of February. The incubation of Q fever is usually between 2 and 3 weeks; this was consistent with infection from these goats.

Shipments of between 100 and 1,200 goats continued over the following three months, associated with continuing Q fever cases in Donald. A local medical practitioner drew attention to the possibility of similar outbreaks occurring elsewhere in view of the likelihood of cases being misdiagnosed as "influenza"(1).

Subsequent unconfirmed reports have been received of cases occurring in other abattoirs throughout Victoria including 3 recent cases in Wangaratta. Ten serologically, positive cases have also been reported amongst abattoir workers in Alice Springs in the Northern Territory. There is no information available as to the origin of the infections in these episodes.

Patients with Q fever frequently develop pneumonitis, and endocarditis and hepatitis have been reported. Fatality in untreated patients is less than 1%, and with treatment with tetracyclines is negligible except in aged persons and individuals who develop endocarditis(2).

Attempts to recover C. burneti from the blood of patients may be hazardous to laboratory workers.

(Acknowledgements - The data on the Victorian cases and the outbreak at Donald were provided by Dr D.W. Rankin and Dr B. Oliver of the Health Commission of Victoria.)

References

Buckley B. Med J Aust (1979) 1:624

Benenson A.S. (Ed), Control of Communicable Diseases in Man 12th edition APHA 1975

Storage of opened multi-dose containers of RIT "Sabin" vaccine

Single dose vials of RIT "Sabin" vaccine are not available in Australia, and concern has been expressed over the wastage involved in discarding the remains of multi-dose vials following the administration of only one or two doses.

The National Biological Standards Laboratory has commented that although the vaccine virus is stable for at least 12 months at 2-8°C in unopened containers, this is not necessarily the case with opened containers for two main reasons.

Firstly, it is difficult to fit the plastic dropper to the vial without contaminating the vial or the dropper, and consequently the contents. The low temperature of storage and the high salt content would probably limit the growth of most microorganisms, but undoubtedly there would be some which could thrive under these conditions. If microbial growth did occur a loss in viral infectivity could follow.

Secondly, the plastic dropper and its cap are not always airtight, and there is a tendency for the pH of the fluid to increase within a day or two in storage, from the initial value of 6.0-7.0 to $\geqslant 7.5$. As the stabilizing effect of M $MgCl_2$ is markedly less above pH7.4, alkaline vaccine could be expected to lose viability under these conditions.

Regarding the financial aspects, as the bulk of the cost of Sabin vaccine is the container rather than the contents, single dose vaccine would cost almost as much as multi-dose vaccine.

It is therefore recommended that the remaining vaccine in any opened vial be discarded at the end of the day on which it has been opened.

Pertussis in adults in Scotland

The Communicable Diseases Scotland (79/37) - draws attention to ten cases of pertussis in adults seen in one general practice in Scotland in the ten months October 1978 - July 1979. The criterion for diagnosis was the patients' sera agglutinating Bordetella pertussis type 1,3, in a titre of 1/240 or greater after three weeks or more of symptoms.

All age groups over 16 years were involved and the highest titre, found in 3 females, was 1:960.

During this period seventeen other patients with similar symptoms were tested with negative results and there was one doubtful case who had been coughing for ten weeks when first seen and whose sera gave a titre of 1/60 on two occasions, two weeks apart.

The main symptoms in all ten proven cases was spasmodic cough, which was worse at night. It varied in duration from under one month (two patients) to over three months (two patients out of the seven observed for that period). The cough was not accompanied by a whoop, but one middle-aged man had mild stridor for some hours.

Sore throat was a complaint of six patients and in four of these this was the first symptom brought to the doctor, after only two or three days duration.

Malaise was a feature in four patients, one of whom continued to complain of this for three weeks.

Vomiting occurred in five cases but only in one was it severe. Complications were rare and related to pre-existing conditions.

Most of the patients were initially seen early in their illness before the diagnosis was apparent and its true nature was not known until they consulted once or twice more after intervals which varied from a few days to seven weeks. The exceptions were two patients whose children were currently infected: the others were taken completely by surprise when told the diagnosis.

When the patients were asked whether they had had whooping cough when young, four said they did not and three were unsure. Three answered affirmatively and these included one woman whose notes in the practice record such an illness in 1953 when she was eight months old.

The article commented that although adult whooping cough may be a rarity amongst hospital in-patients, it is probably far more common in the community than generally realised. The main danger of adult pertussis is the dissemination to susceptible infants.

B-lactamase producing N. gonorrhoeae

A further four isolates of this organism have been reported for the months of August and September. All were males. One, from Queensland, had contracted his infection in the Philippines and the other three (two from Queensland and one reported by a private laboratory in South Australia) in Bangkok.

This brings the total notified since July 1st this year to seven.

Contaminated imported canned dried fish (Follow-up report)

In the last issue of CDI the isolation of Clostridium spp and Bacillus spp was reported from cans and jars of imported dried fish in oil. In addition to Cl. perfringens, the following species have been identified to date by the Microbiological Diagnostic Unit, Melbourne - Cl. oceanicum, Cl. difficile, and Cl. bifermentans. In addition four other strains remain unidentified, two of which are lactose fermenters and are lethal to mice. None resemble Cl botulinum biochemically.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 4-10 - 79 • 17-10-79 BULLETIN NUMBER 79.21

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ PDW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	TOTAL
0100 ADENOVIRUS NOT TYPED	3		7	1	5	3	7	2	28
0101 ADENOVIRUS TYPE 1				3	5			1	9
0102 ADENOVIRUS TYPE 2	1		1	1	8				11
0103 ADENOVIRUS TYPE 3					1			1	2
0104 ADENOVIRUS TYPE 4				1		1			2
0105 ADENOVIRUS TYPE 5			1		6				7
0107 ADENOVIRUS TYPE 7				1	3			1	5
0114 ADENOVIRUS TYPE 14			1						1
0119 ADENOVIRUS TYPE 19				2				5	7
0199 ADENOVIRUS TYPING PENDING		1			4				5
0201 INFLUENZA A VIRUS			2	1	1		1	3	8
0202 INFLUENZA A VIRUS SUBTYPE H3N2						1			1
0203 INFLUENZA B VIRUS			2	2		1	2	12	19
0301 PARAINFLUENZA VIRUS TYPE 1							3		3
0303 PARAINFLUENZA VIRUS TYPE 3					5			1	6
0399 PARAINFLUENZA VIRUS TYPING PENDING						1			1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	3	2		1	5	22	9	3	45
0500 RHINOVIRUS (ALL TYPES)				2	5		1		8
0600 MYCOPLASMA PNEUMONIAE		1	4	2		7	7	5	26
0700 ORNITHOSIS-PSITTACOSIS	2		2						4
0800 COXSACKIEVIRUSES GROUP A - NOT TYPED								3	3
0903 COXSACKIEVIRUS B3					2				2
0904 COXSACKIEVIRUS B4	1	1	2	2				2	8
1000 ECHOVIRUS NOT TYPED						7	3		10
1011 ECHOVIRUS TYPE 11		3		12	7			1	23
1013 ECHOVIRUS TYPE 13	1								1
1017 ECHOVIRUS TYPE 17	2								2
1030 ECHOVIRUS TYPE 30	1			1					2
1031 ECHOVIRUS TYPE 31			1						1
1102 POLIOVIRUS TYPE 2							1		1
1104 POLIOVIRUS-VACCINAL STRAIN					4				4

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VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES-CONTINUED

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
1203 MUMPS VIRUS	5	4	5	3			7		24
1399 HERPES VIRUS GROUP-NOT TYPED		1		2		7			10
1301 HERPES SIMPLEX VIRUS-NOT TYPED	11		11	2	2		25	34	85
1303 VARICELLA-ZOSTER VIRUS	1	1	2	1		1	1		7
1308 HERPES SIMPLEX TYPE 1	7			12		12			31
1307 HERPES SIMPLEX TYPE 2	32		4	14		13			63
1399 HERPES VIRUS TYPING PENDING						1			1
1401 COXIELLA BURNETI	7		1	4		9	23		44
1521 MEASLES VIRUS			1	1		1	6	(1	9
1522 RUBELLA VIRUS	4	1	3	6		12	4	21	51
1530 HEPATITIS A VIRUS								3	3
1532 HEPATITIS B ANTIGEN			11	21		6	7	13	58
1535 HEPATITIS A ANTIBODY	1					2			3
1541 CHLAMYDIA A - TRIC TYPE	4		4					21	29
1556 CMV - CYTOMEGALOVIRUS	4	3	6	6		3	2	5	29
1562 REOVIRUS (ALL TYPES)						1			1
1564 ROTAVIRUS	2		1	3	12	12			30
1571 ENTEROVIRUS TYPE 71 (BRCR)				1					1
1599 ENTEROVIRUS TYPING PENDING	3	1	3		7				14
ROSS RIVER VIRUS							6	1	7
PARVOVIRUS(LIKE)					5				5
TOTAL	95	19	75	108	87	123	115	138	760

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VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS

	VIRUS OR VIRAL ANTIGEN	PA	BL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
0100	ADENOVIRUS NOT TYPED	4	11	10		2		1			1	29
0101	ADENOVIRUS TYPE 1	2		7								9
0102	ADENOVIRUS TYPE 2	7		5				1				13
0103	ADENOVIRUS TYPE 3	1		2								3
0104	ADENOVIRUS TYPE 4			2								2
0105	ADENOVIRUS TYPE 5	4		3								7
0107	ADENOVIRUS TYPE 7			3			2					5
0114	ADENOVIRUS TYPE 14						1					1
0119	ADENOVIRUS TYPE 19						4			3		7
0199	ADENOVIRUS TYPING PENDING			5								5
0201	INFLUENZA A VIRUS		6	2								8
0202	INFLUENZA A VIRUS SUBTYPE H3N2			1								1
0203	INFLUENZA B VIRUS		16	3								19
0301	PARAINFLUENZA VIRUS TYPE 1		2	1								3
0303	PARAINFLUENZA VIRUS TYPE 3		1	5								6
0399	PARAINFLUENZA VIRUS TYPING PENDING	1										1
0400	RESPIRATORY SYNCYTIAL VIRUS (RS)	1	8	36	1							46
0500	RHINOVIRUS (ALL TYPES)			8								8
0600	MYCOPLASMA PNEUMONIAE		26									26
0700	ORNITHOSIS-PSITTACOSIS		4									4
0800	COXSACKIEVIRUSES GROUP A - NOT TYPED			1							2	3
0903	COXSACKIEVIRUS B3	1		1								2
0904	COXSACKIEVIRUS B4	4		3	2						2	11
1000	ECHOVIRUS NOT TYPED	4		4	1			1				10
1011	ECHOVIRUS TYPE 11	6		6	12			2			2	28
1013	ECHOVIRUS TYPE 13	1										1
1017	ECHOVIRUS TYPE 17	1		1								2
1030	ECHOVIRUS TYPE 30	2		1	1							4
1031	ECHOVIRUS TYPE 31	1										1
1102	POLIOVIRUS TYPE 2	1										1
1104	POLIOVIRUS-VACCINAL STRAIN	4										4
1200	MUMPS VIRUS		15	1	4			1				21

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VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS-CONTINUED

VIRUS OR VIRAL ANTIGEN	FA	FL	HA	CS	SA	EI	UR	BR	GE	OT	TOTAL
1300 HERPES VIRUS GROUP-NOT TYPED					6				3	1	10
1301 HERPES SIMPLEX VIRUS-NOT TYPED		9	8	2	26	0			33	2	86
1303 VARICELLA-ZOSTER VIRUS		6								1	7
1305 HERPES SIMPLEX TYPE 1	2		10		15			1	3		31
1307 HERPES SIMPLEX TYPE 2	2								61		63
1399 HERPES VIRUS TYPING PENDING						1					1
1401 COXIELLA BURNETI		44									44
1501 MEASLES VIRUS		8	1								9
1502 RUBELLA VIRUS		49	1								50
1530 HEPATITIS A VIRUS		3									3
1532 HEPATITIS B ANTIGEN		58									58
1535 HEPATITIS A ANTIBODY	1	2									3
1541 CHLAMYDIA A - TRIC TYPE						1			28		29
1556 CMV - CYTOMEGALOVIRUS	1	13	1				8		5	3	31
1562 REOVIRUS (ALL TYPES)	1										1
1564 ROTAVIRUS	30										30
1571 ENTEROVIRUS TYPE 71 (CRCA)	1										1
1599 ENTEROVIRUS TYPING PENDING	9	1	5	2						1	17
ROSS RIVER VIRUS		7									7
ARBOVIRUS	5										5
Total	97	288	137	25	49	15	14	21	136	15	777