

Serogrouping and sulphonamide sensitivity of *Neisseria meningitidis* isolates from the south-western Cape

To the Editor: *Neisseria meningitidis* infections were first reported from the south-western Cape Province in 1883.¹ Since then, against a backdrop of a relatively low incidence with winter exacerbation, epidemic periods have occurred at 10 - 15-year intervals. During the 1978 - 1979 epidemic more than 95% of isolates at Tygerberg Hospital were of serogroup B and only 5% were resistant to sulphonamides.² Seventy-seven per cent of patients notified as suffering from meningococcal infections were under 4 years of age.³ In this report we briefly describe the pattern of serogrouping and sulphonamide resistance of *N. meningitidis* for the period 1980 - 1987.

The information for this report was gathered from three sources. Details of notifications of meningococcal disease occurring in the Western Cape Health Region for 1987 were obtained from the regional office of the Department of National Health and Population Development. Details of meningococcal isolates and their serogrouping and sulphonamide sensitivity were obtained from the Orange Street Pathology Laboratory, Cape Town, and the Department of Medical Microbiology, Tygerberg Hospital. Meningococcal serogrouping and determination of sulphonamide sensitivity at both laboratories were done by conventional microbiological techniques.^{4,5}

The results of serogrouping of meningococcal isolates and testing for sulphonamide resistance at Tygerberg Hospital and the Orange Street Laboratory are combined in Table I and illustrate a fall in the relative predominance of serogroup B isolates, an increase in serogroup C isolates and a dramatic decline in sulphonamide sensitivity. In 1987 71% of the serogroup A isolates, 72% of serogroup B isolates and only 54% of serogroup C isolates were from patients aged under 4 years. Also in 1987 a total of 178 cases of meningococcal disease were notified to the regional office of the Department of Health and Population Development, of which 70% were in children under 4 years of age.

TABLE I. *N. MENINGITIDIS* SEROGROUPING AND SULPHONAMIDE SENSITIVITY, 1980-1987

	Serogroup								Isolates resistant to sulphonamides (%)
	A		B		C		Others		
	No.	%	No.	%	No.	%	No.	%	
1980	0	76	97	2	3	0	0	18	
1981	3	4	70	88	3	4	4	3	27
1982	2	7	24	89	1	4	0	0	26
1983	0	50	96	1	2	1	2	38	
1984	12	5	63	76	7	8	1	1	14
1985	12	10	112	78	15	10	4	3	32
1986	16	10	121	76	16	10	5	3	34
1987	15	10	102	67	26	17	8	5	56

In the south-western Cape the serogroup B meningococcus has been dominant for the past decade and remains so despite the decline documented in this study. Since no effective vaccine against the serogroup B meningococcus is available, the emergence of one of the other serogroups to a position of dominance would be of some importance, offering the possibility of vaccination should a further epidemic outbreak occur.

During the 1978 - 1981 epidemic in the south-western Cape, prophylactic sulphonamides were used on a large scale by local health authorities and hospitals. It is possible that this has led to the decline in sulphonamide sensitivity. Rifampicin is at present prescribed locally for meningococcal prophylaxis, but is capable of rapid induction of resistance in meningococci.⁶ Since rifampicin is already used on a large scale for the treatment of tuberculosis in Cape Town, the situation will have to be watched closely. Data from the Orange Street Laboratory indicate that there are no rifampicin-resistant meningococci in circulation at present.

It has been suggested that a shift in the age distribution of patients with meningococcal disease may be of importance in predicting the occurrence of an epidemic.⁷ It is therefore of interest that the decline in the proportion of notified patients aged under 4 years from 77% in 1978 - 1980 to 70% in 1987 appears to have occurred in conjunction with an increase in the relatively older group C cases, supporting the contention that a change in age distribution of patients may predict a change in the prevalent serogroups rather than the onset of an epidemic.⁸

Since the completion of this report it has become evident that a further epidemic phase may have commenced. In 1988, 485 cases of meningococcal disease with 63 deaths were notified to the regional office of the Department of Health and Population Development.

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Dementia-aluminium — a weak link?

To the Editor: The item entitled 'Study supports dementia-aluminium link'¹ requires comment. Although no reference is quoted, it is obviously based on a report in *The Lancet* by Martyn *et al.*²

Briefly, this work examined the relationship between aluminium concentration in drinking water and a diagnosis of probable Alzheimer's disease. The report elicited a considerable amount of comment both in the editorial pages of *The Lancet*³ and in the correspondence columns. It was criticised on a number of grounds, including: (i) the extreme difficulty in obtaining sound epidemiological evidence of an association between aluminium and any illness;³ (ii) no account was taken of the fact that drinking water is a relatively unimportant source of aluminium ingestion compared with food or food additives;^{3,4} (iii) the use of information on computed tomography request forms as a basis for making the