Variations in mortality of the coloured, white and Asian population groups in the RSA, 1978 - 1982

Part II. Cerebrovascular disease


Summary

An analysis was undertaken of mortality from cerebrovascular disease in the RSA between 1978 and 1982 in whites, coloureds and Asians. This article details the age-specific mortality rates for each group and also comparisons between groups based on age-standardised mortality rates. Marked differences are seen between the various population groups, the rates for Asians and coloureds (particularly females) far exceeding that for whites. Comparison of these data with those published previously by Wyndham suggest that while mortality from this cause may be falling among whites and Asians, the rate is remaining relatively static in the coloured population.

Methods

Using mortality statistics published by Central Statistical Services, Pretoria, as numerator and the 1980 national census population as the denominator, age-specific and age-standardised MRs were calculated for whites, coloureds and Asians as described previously. Blacks were excluded from the analysis because statistics for this group appear extremely unreliable. As there were few deaths from CVD during the time period studied in people less than 25 years of age, and because these may reflect a different pathogenetic mechanism, the initial calculations of rates were based only on deaths occurring at ages older than this. In contrast, the analysis of chronological trends related only to mortality between the ages of 15 and 64 years, since this permitted comparisons with the previously published data.

CVD is coded with rubrics 430 - 438 in chapter 7 of the International Classification of Diseases (9th revision, 1975) (ICD-9) which has been used in the RSA since 1978. Details are given in Table I.

Results

Age-specific MRs

The mean (for the years 1978 - 1982) is shown in Figs 1 and 2. Not unexpectedly there is an increase in the rate with age in all groups, reaching a maximum of over 2000/100 000 among coloureds older than 75 years. Among females, coloureds have the highest and whites the lowest rates at all ages. Among males, again whites have the lowest rates at all ages, but coloureds are only highest until the age of 55 years; between 56 and 74 years Asians exceed the others and after the age of 75 years the rate is again highest for coloureds.

Age-standardised MRs (Table II)

For further comparison, the age-standardised MR was calculated for each sex and population group, using as reference the total
Fig. 1. Age-specific MRs from CVD for males aged > 25 years (mean 1978 - 1982). (Note: The age divisions chosen are not equal and the line drawn joins the discrete values in each age group.)

TABLE II. AGE-STANDARDISED MRs (/100 000) (> 25 years)

<table>
<thead>
<tr>
<th>Sex</th>
<th>No. of deaths*</th>
<th>Population†</th>
<th>ASMR‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>1683.4</td>
<td>2268478</td>
<td>140.4</td>
</tr>
<tr>
<td>Asians</td>
<td>283.0</td>
<td>406682</td>
<td>272.9</td>
</tr>
<tr>
<td>Coloureds</td>
<td>1017.0</td>
<td>1292906</td>
<td>273.5</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>2285.4</td>
<td>2282590</td>
<td>129.7</td>
</tr>
<tr>
<td>Asians</td>
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<td>412520</td>
<td>234.9</td>
</tr>
<tr>
<td>Coloureds</td>
<td>1371.8</td>
<td>1331101</td>
<td>304.1</td>
</tr>
</tbody>
</table>

†Population of each sex and racial classification group according to 1980 census.
‡Mean for 1978 - 1982. This rate is calculated by standardising the age distribution of each population to that of the total white, coloured and Asian population according to the 1980 census (7994277 people).

ASMR = age-standardised MR.

white, coloured and Asian population aged over 25 years in 1980. Among males the mean rate (for 1978 - 1982) is lower for whites than in the other population groups, while those for coloureds and Asians are very similar. In contrast, the rate for coloured females not only exceeds that for other females but is higher than that for coloured males; this population group is the only one in which more females than males die from this cause.

Chronological changes in age-standardised MRs

In order to examine chronological trends, the time period analysed was extended by comparing deaths between the ages of 15 and 64 years with the results published by Wyndham in 1982. This was possible because no change in the classification of CVD took place between the 8th revision of the ICD (as used in the former publication) and the 9th that we used. The data were prepared for this comparison by restandardising the rates, this time to the denominator used by Wyndham, i.e. the white male population in the relevant age groups according to the 1970 South African census.

Mortality rates for males aged 15 - 64 years were available for each individual year between 1968 and 1977, so our data could be compared graphically (Fig. 3). The only values given for females were those for 1970, and a direct comparison of these with the mean of the years 1978 - 1982 is shown, together with the percentage change, in Table III. For comparison, data for males are shown in this table too.

Although conclusions based on a single year's data may well be suspect, it is suggested that a substantial fall in mortality has occurred among both white and Asian females aged 15 - 64 years. The death rate for coloured females has fallen far less during the same period. Among males the greatest decrease is that for Asians, followed by whites, with coloureds showing a negligible change. This is supported by the graph of the individual years (Fig. 3), which shows clearly that there has been no tendency for the MR for coloureds to approach that for whites during the 15-year period. The rate for Asians, on the other hand, started higher than
that for coloureds but appears to have fallen below the latter in recent times.

To put these results in international perspective, the similarly adjusted MR for British males is given in Fig. 3 too (again extracted from Wyndham’s article). While the MR for South African whites only marginally exceeds that in the UK, the other population groups have far higher rates.

**Discussion**

In analysing mortality statistics one must constantly take into account their inherent capacity for error and bias. Yet as one of the few national ‘health’ data bases available, they have a definite place in revealing trends and suggesting foci for detailed research.

Our data have suggested that there are striking differences in the mortality from CVD within the population of the RSA, particularly between whites on the one hand and coloureds and Asians on the other. In interpreting this, one must bear in mind that mortality is the function of both incidence (i.e. the number of new cases) and case-fatality rate (i.e. the number of affected people who die). The determinants of each are different, and if the latter is where the differences lie, then the lower MR for whites may well just reflect their better access to medical care.

If the difference lies in incidence, however, one must consider ‘risk factors’, and several authors have done so in the population groups under discussion. In a comparison of a rural white and an urban coloured population, while cholesterol levels were found to be similar, hypertension was definitely more common among the coloureds (particularly the females), as was smoking. A subsequent, detailed analysis of hypertension in the Cape Peninsula indicated that the prevalence was alarmingly high, particularly among females over 44 years of age. Comparing their data with a study reported from urban Natal, the authors suggested that the prevalences of hypertension among coloured, white and ‘Indian’ men were 23.7%, 22.9% and 12.5% respectively, while those for females (in the same order) were 26.2%, 15.1% and 17.4%. While this may point to reasons for the high MR from CVD among coloured females it raises further questions about the situation in the Asian group (most of whom could be termed ‘Indians’ in South African parlance). They are known to have an excessively high prevalence of diabetes and probably hyperlipidaemia, and while the latter may not have an influence on CVD incidence, the former almost certainly does. The debate is far-reaching; what is needed for its resolution is a detailed analysis of both incidence and case-fatality rates in this country.

Another point of interest is the high MR from CVD in coloured females. In 1981 Haberman et al. reviewed 16 studies of CVD incidence and found that in 15 there was an excess male incidence, the only exception being a study of blacks in Evans County, USA — this review was followed by a report from Israel in 1982 in which a female preponderance was shown, particularly in Israelis of African origin in contrast to those of European, American or Asian birth. This was thought to reflect the higher prevalence of hypertension in this group. The parallels between these data and ours are clear and most interesting.

The fall in CVD mortality in whites and Asians in the 10- and 15-year periods studied is hopeful. It may suggest that in the RSA, as perhaps in the USA and the UK, important risk factors are coming under control, at least in certain population groups. Hypertension is certainly frequently discussed in the lay press and a greater awareness of its importance may be needed if control of the ‘epidemic’ is to continue in some groups and commence in others.

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**REFERENCES**

Variations in mortality of the coloured white and Asian population groups in the RSA, 1978 - 1982

Part III. Rheumatic heart disease


Summary

An analysis was undertaken of mortality from rheumatic heart disease in the RSA between 1978 and 1982 in whites, coloureds and Asians. This article details the age-specific mortality rates (MRs) for each group and also comparisons between groups based on age-standardised MRs. The rates for Asians and coloureds markedly exceed those for whites, particularly in the lower age groups (under 45 years).

On 16 January 1982, an editorial in The Lancet noted that "in global terms rheumatic heart disease is today the commonest form of acquired cardiac disease in children and young adults and one of the most common cardiovascular disorder in adults". In contrast, Di Sciascio and Taronta stated: "The decreasing incidence of rheumatic fever and rheumatic heart disease in the so-called Western World has become an axiom which meets the consensus of the paediatrician, the cardiologist and the epidemiologist ... migrations, urbanisation, industrialisation and the advent of antibiotics have changed the environment and the host".

The RSA, with its socially, genetically and medically heterogeneous society, exemplifies these apparently conflicting views. Wyndham in 1970 showed that mortality due to rheumatic heart disease (RHD) was substantially higher in some groups than others. RHD remains of great importance to health care planners in this country.

The authors are of the opinion that mortality gives an indication of the incidence of rheumatic fever (RF) and/or RHD as well as for the need for health care facilities such as:

(i) primary prevention, for example improved socio-economic conditions and/or health education leading to less overcrowding and early treatment of streptococcal pharyngitis;
(ii) secondary prevention, for example antibiotic prophylaxis of known RF patients; and
(iii) tertiary prevention, for example surgical treatment of valvular lesions due to RF.

To help assess the degree of the problem, mortality rates (MRs) of whites, Asians and coloureds were studied in terms of the latest available data to see if the trends had altered since 1970.

Methods

Details of mortality from RHD in the white, Asian and coloured population groups were obtained for the years 1978-1982. Rates were calculated using the 1980 census to determine the relevant denominators. Blacks were excluded from the analysis because both numerator and denominator population figures are known to be inaccurate. The methodology used to standardise data for comparison has been described in the first article in this series.

RF and RHD are coded in the World Health Organisation International Classification of Diseases (9th revision) with the rubrics 390 - 398.

Results

Mean age-specific MRs

The MR increases with age in all groups (Fig. 1). Coloureds have the highest MR for both males and females at all ages except...