A DIABETES MELLITUS IN THE FIRST NATIONS POPULATION OF BRITISH COLUMBIA, CANADA
Part 1. Mortality

ABSTRACT
Objectives: To describe mortality from diabetes mellitus or related diseases among residents of the province of British Columbia, Canada during the 6-year period 1991-1996, comparing the First Nations population (people with Indian Status) to the population of BC who are not Status Indian. Study Design: A database of all deaths during the 6-year period was created for this purpose. The number of deaths were tabulated using the 3-digit ICD-9 code for diabetes mellitus or a related disease, when they were recorded as the Underlying Cause of Death. Indirect standardization was used to adjust for age and gender differences between the two populations. Results: For diabetes, Status Indian males had a Standardized Mortality Ratio (SMR) of 1.5 compared to other BC males (95% confidence interval 1.0 to 2.6). Status Indian females had an SMR of 2.2 (95% CI 1.5 to 4.5). Age-specific rates of death from diabetes were higher among Status Indian persons, for males aged 50 to 84 and females aged 45 to 84 years. Status Indian persons also experienced higher mortality from cardiovascular and renal disease. Conclusions: In British Columbia, death from diabetes mellitus or a related disease was more common among First Nations people than in the rest of the population. (Int J Circumpolar Health 2002; 61: 251-253)

Key words: Diabetes mellitus (MeSH); Mortality; Indians, North American

The purpose of this report is to describe rates of death from diabetes mellitus or related diseases among residents of the province of British Columbia, Canada during the 6-year period from 1991 to 1996, and to compare the Status Indian population of British Columbia to the population of British Columbia who are not Status Indian.

METHODS

From data extracts provided courtesy of the Vital Statistics Agency of British Columbia we created a database of all grounds of having Indian status as defined by the Indian Act...
of Canada. It may also occur if Vital Statistics Agency personnel had discovered the deceased person’s Indian Status in one of their occasional matches of death records against Indian Status registration records maintained by Indian and Northern Affairs Canada.

For each year in the 6-year period 1991-1996, we obtained counts (in gender and 5-year age categories) of the Status Indian population of British Columbia and the population of British Columbia who were not Status Indian from estimates previously published by the British Columbia Vital Statistics Agency.

To fairly compare death rates, we used indirect standardization to adjust for age and gender differences between the Status Indian population and the larger reference population (British Columbia residents who are not Status Indian) and calculated Standardized Mortality Ratio (SMR) and the corresponding 95% confidence intervals (CI).

RESULTS

The excess mortality from diabetes among Status Indians compared to other residents of British Columbia is evident from the SMR of 1.5 (95% CI: 1.0, 2.6) for men and 2.2 (95% CI: 1.5, 4.5) for women. Comparing specific age categories, rates of death are higher for the Status Indian population, for ages 50 to 84 years for males and 45 to 84 years for females.

Deaths from diabetes mellitus and possibly related causes represented 18% of observed deaths (435 out of 2,438) among Status Indian men and 21% of observed deaths (361 out of 1,746) among Status Indian women. Status Indians experienced excessive mortality from cardiovascular diseases, with an SMR of 1.1 (95% CI: 1.0 to 1.3) for men and an SMR of 1.4 (95% CI: 1.2 to 1.6) for women. An excess is also observed for deaths from renal failure, with an SMR of 2.4 (95% CI: 1.5 to 5.9) for men and an SMR of 2.7 (95% CI: 1.6 to 10.5) for women.

DISCUSSION

The main problem of interpretation has to do with the limited information on the causes of death. Our database
contained only the underlying cause of death, coded to the first three digits of ICD-9. Only one code can be designated as the underlying cause. Although our case definition included codes for disease conditions which could have been diabetes-related, we do not know how many of these additional cases in fact were associated with diabetes mellitus. Also, it is possible that our case definition excluded some diabetes-related deaths, for example, deaths from trauma or infectious disease occurring in older persons weakened by long-standing diabetes. However, these problems of classification applied equally to both the Status Indian population and the reference population, so our comparisons between these two groups are still valid. From the results we cannot say absolutely how many deaths occurred because of diabetes, but we can say with confidence that the death rates were significantly higher among Status Indian persons than among persons who are not Status Indian in British Columbia during the period 1991 to 1996.

The higher mortality experience among Status Indians reflects both the higher frequency of occurrence of diabetes and reduced survival from the disease among those who developed it.

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