

The changing epidemiology of Acute Rheumatic Fever in Manitoba's paediatric population: results of a 10-year retrospective study.

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Objectives:

Thirty years ago, the incidence of acute rheumatic fever (ARF) in Manitoba was found to be significantly greater in Aboriginal compared to non-Aboriginal children. Although Aboriginal children now make up 25% of Manitoba's paediatric population, ARF epidemiology in Manitoba's paediatric population has not been recently reviewed. In this study we determine incidence rates of ARF in Aboriginal and non-Aboriginal children in Manitoba from 2000-2010, and compare these to rates from 30 years prior.

Methods:

We examined ARF incidence rates in Manitoba, Canada from 2000-2010 for children aged 0-17 years, residing in Manitoba or the Kivalliq region of Nunavut. Study participants were identified from the Variety Heart Centre patient database and the diagnosis of ARF was based on the revised Jones criteria. Incident rates were calculated by ethnicity, gender and location of residence. Rates were compared using rate ratios and 95% confidence intervals.

Results:

59 patients were eligible for this study. From 2000-2010, the incidence rate of ARF in Manitoba's total paediatric population was 1.71 per 100 000 person years. The incidence rate in the Aboriginal population was significantly greater than that in the non-Aboriginal population ($p < 0.0001$) at 4.98 per 100 000 person years and 0.618 per 100 000 person years respectively. Moreover, the Aboriginal population had an 8.07 (95% CI 4.54-14.32) times greater relative risk of acquiring ARF compared to the non-Aboriginal population. While the absolute incidence rates across all population groups fell over 30 years, the relative risk of acquiring ARF as an Aboriginal child compared to a non-Aboriginal child almost doubled in that time. Lack of safe water sources, overcrowding, and poor access to health care were identified as socioeconomic factors that may contribute to the higher incidence of ARF found in Aboriginal children.

Conclusions:

While ARF incidence rates in Manitoba's paediatric population as a whole have decreased over the last 30 years, incidence rates in the Aboriginal population are still unacceptably higher than the non-Aboriginal population. Targeted primary and secondary prevention strategies are needed in order to decrease the direct and indirect burden of ARF in this population.

	1970 – 1979	2000 – 2010	p-value
Entire population (95% CI)	35.89 (32.87-39.20)	1.71 (1.32-2.20)	<0.0001
Aboriginal population (95% CI)	125.75 (105.39-150.04)	4.98 (3.69-6.72)	<0.0001
Non-Aboriginal population (95% CI)	29.02 (26.21-32.13)	0.62 (0.38-1.01)	<0.0001
Relative Risk (95% CI)	4.33 (3.53-5.31)	8.07 (4.54-14.32)	-

*Relative risk of ARF in the Aboriginal compared to Non-Aboriginal population