Incidence of myocardial and cerebral infarction in Nuuk, Greenland

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ABSTRACT

Introduction. Myocardial and cerebral infarction are held to be rare among the Inuit, whereas cerebral haemorrhage is thought to be frequent. Recent studies have questioned these beliefs. We report data from our institution.

Method. Retrospective data collection and review of all charts from Greenlandic patients from the Nuuk area admitted to the city hospital, Dronning Ingrids Hospital, from 1999 to 2002.

Results. A total of 8 patients with myocardial infarction were found, median age 70 years, 4 with ST elevation MI and 4 with non-ST elevation MI. Two of the former had thrombolysis. Thirty-five patients were admitted with stroke, excluding subarachnoid haemorrhage, median age 65 years. Of these, twenty-nine had a CT. Five scans were reported as being normal, one patient had an intracerebral haemorrhage and twenty-three had cerebral infarctions. Six had no CT. One of these was admitted comatose and died without regaining consciousness, the rest were minor strokes in patients over 70.

Conclusion. Myocardial infarction is a rare disease in Greenlanders, whereas stroke is four times as frequent. The overwhelming majority of strokes are infarctions, whereas intracerebral haemorrhage seems to account only for a small minority.

INTRODUCTION

For many years, it has been stated that ischaemic heart disease is uncommon in Greenland, whereas cerebrovascular disease is more common (1, 2). Recently, these observations have been questioned (3). Most of these studies are based on mortality figures from certificates of death (1, 2). A few in vivo studies have suggested that atherosclerosis is as common in Greenland as in Europe (4, 5), but an autopsy study suggested a low prevalence of coronary arteriosclerosis in Greenland and among Alaska Natives (6).

Previous studies have suggested cerebrovascular death to be more common than cardiovascular death (1), and is has been hypothesised that this could be attributed to an increased bleeding tendency with more intracranial bleeding.

No studies based on hospitalised cases of myocardial infarction have so far been published, and none on stroke based on computerised X-ray tomography (CT scan). We therefore decided to do a retrospective survey in our institution in Greenland on hospitalised cases of myocardial infarction and stroke.

PATIENTS AND METHODS

We studied patients admitted to Queen Ingrid’s Hospital in Nuuk during a three-year period from 1 July 1999 to 30 June 2002. Queen Ingrid Hospital is the main hospital in Greenland, serving as referral centre for 15 small district hospitals all over Greenland (pop 56,124 in 2001) and as the local hospital for Nuuk, the capital of Greenland, with a population of 13,445. Only Greenlanders defined as persons born in Greenland, and only residents of Nuuk were included in the study.

Charts with a discharge diagnosis (alive or dead) of myocardial infarction, unstable angina or
with cerebral infarction, cerebral haemorrhage, stroke or transient ischaemic attacks were selected for review. Subarachnoidal bleeding, a congenital disorder with high prevalence in Greenland has a totally different pathophysiology than stroke and was not included in the study.

Cases were classified as myocardial infarction or stroke according to the following criteria.

Myocardial infarction as defined by WHO (7).

Stroke: the presence of focal neurological deficit of sudden onset without remission in 24 hours, confirmed by two observers.

RESULTS

In the three-year study period, 8 Greenlanders living in Nuuk were discharged with a diagnosis of myocardial infarction (MI) according to the WHO criteria. Their median age was 70 years, and four had ST elevation MI. All were discharged alive.

In the same period, 35 patients were discharged with stroke as defined. Their median age was 65 years. Of these, 29 had a CT scan performed, and infarctions were reported in 23 of these. One had an intracerebral bleeding, whereas 5 scans were normal. Of the remaining, one was admitted comatose and died without regaining consciousness. The residual five patients all had minor strokes.

DISCUSSION

We found that myocardial infarction is a rare condition in Greenland, in accordance with previous reports on the subject. Whether the condition is becoming more common cannot be deduced from the present figures. One of the authors, however, worked in the same department for 12 months during 1984, and during that year only one patient met the present study criteria for MI.

Stroke, on the other hand, is a common disease, and in our study four times as frequent as MI. To our knowledge, this study is the first to report on a series of patients examined in a clinical setting and with present-day standards for examination, including CT to differentiate between bleeding and ischaemic infarction. Somewhat to our surprise, when we first started with CT in 1997 in Queen Ingrid Hospital, the majority of strokes turned out as in the present series to be of non-haemorrhagic origin.

But we also found ischaemic cerebrovascular disease to be much more common than ischaemic cardiovascular disease. We have no explanation for this difference, bleeding obviously not being the cause.

A number of risk factors for atherosclerosis are common in Greenland, including smoking, obesity and diabetes. One might suspect that ischaemic stroke has a different pathophysiology than myocardial infarction.

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