

Helicobacter pylori-associated disease burden in a northern Canadian community: comparing medical records and community-based screening

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Introduction

Aklavik is an Aboriginal community with a population of approximately 600 in the Northwest Territories, Canada. In recent years, many Aklavik residents have been concerned about *Helicobacter pylori* infection and its association with gastric cancer. In addition, local health care providers have noticed a high occurrence of *H. pylori* infection and complaints about dyspeptic symptoms (1,2). However, little is known about how well health care utilization for *H. pylori*-related symptoms reflects the actual disease burden in the population. This analysis aimed to estimate the burden of *H. pylori*-related disease captured by the health care system and compare this to the occurrence observed in population screening conducted for the community-based *H. pylori* project carried out in Aklavik.

Methods

The Aklavik *H. pylori* Project brought together researchers, community leaders and local health authorities to address community concerns about *H. pylori* infection and develop effective management strategies. During 2008–2010, project participants were screened for *H. pylori* by urea breath test (UBT), and information on the frequency of dyspeptic symptoms was collected via structured interviews using items from a questionnaire validated for this purpose (3). Ascertained symptoms included upper abdominal symptoms (overall), epigastric pain/discomfort/burning, feeling full for a long time, feeling full soon after starting eating, heartburn, acid reflux, upper abdominal bloating/belching and nausea. A clinical chart review abstracted information about previous *H. pylori* diagnostic tests and history of dyspeptic symptoms during the 5 years preceding project participation. Since the community has only 1 health centre and the local health records document referrals to regional and territorial hospitals in Inuvik and Yellowknife, the

chart review captured a fairly complete medical history of most Aklavik residents.

We compared estimates of *H. pylori* prevalence from 3 sources: community-wide UBT screening carried out by the Aklavik *H. pylori* Project; self-report of having previously tested positive in regular health care; and medical chart records of *H. pylori* diagnostic tests during the 5 years before project participation. We also compared the prevalence of dyspeptic symptoms reported by participants during the preceding 6 months to the prevalence of dyspeptic symptoms recorded in medical records for the same time period. To compare prevalence estimates, we report proportion differences and 95% confidence intervals.

Results

Two hundred and ninety participants (age range: 0–79 years, 54% female, 88% aboriginal) had data from 3 sources: project-based UBT screening; questionnaire; and chart review. Of the 290 participants tested by UBT, 58% were positive for *H. pylori* by project-based screening. Chart review documented 56 participants having been tested for *H. pylori* during regular health care, either by serology or UBT at the Aklavik Health Centre, or evaluation of biopsies taken during endoscopy at the regional or territorial hospital. Of these 56, the proportion that tested positive for *H. pylori* was 61%, which was 3% (95% CI: 12%, 16%) higher than the prevalence estimated by project-based screening. In the survey, 47 respondents reported having been tested previously for *H. pylori*, with 66% reporting a positive result; this was 8% (95% CI: –7%, 22%) higher than the prevalence estimated by project-administered screening.

About 53% of participants reported having dyspeptic symptoms in the past 6 months, which was 45% (95% CI: 39%, 52%) higher than the 8% of participants who had sought health care for dyspeptic symptoms in the same

Table 1. Frequency of dyspeptic symptoms by self-report and health centre chart review

| Number (Column percentage) | Self-reported dyspeptic symptoms in the past 6 months | | Total |
|---|---|-----------|-------|
| | No | Yes | |
| Dyspeptic symptoms captured by health centre chart review | | | |
| No | 128 (96%) | 136 (88%) | 264 |
| Yes | 5 (4%) | 18 (12%) | 23 |
| Total | 133 | 154 | 287* |

*3 participants with missing data on self-reported dyspeptic symptoms were excluded.

time period. Only 12% of participants who reported any dyspeptic symptoms had sought health care for these symptoms (Table 1). Among participants who reported any moderate or severe dyspeptic symptoms, 20% had sought health care for these symptoms. In the regular health care setting, most people who were tested for *H. pylori* had the test due to complaints of dyspeptic symptoms. Among those who were *H. pylori* positive by project-based screening, 43% had no self-reported symptoms.

Conclusion

The observed *H. pylori* prevalence was similar by community-based UBT screening, chart review and self-report. Many *H. pylori*-infected individuals in Aklavik were asymptomatic and many symptomatic people with *H. pylori* infection did not seek care for their symptoms. Primary care centre medical chart review provided reasonable estimates of *H. pylori* prevalence in the local population, but it greatly underestimated the frequency of dyspeptic symptoms.

References

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