



Systematic Review/Meta-analysis

The Risk of Ischemic Heart Disease and Stroke Among Immigrant Populations: A Systematic Review

Qazi Zain Sohail, BSc,^{a,b} Anna Chu, MHSc,^{a,b} Mohammad R. Rezai, MD, PhD,^b
Linda R. Donovan, BScN, MBA,^b Dennis T. Ko, MD, MSc,^{a,b,c} and Jack V. Tu, MD, PhD^{a,b,c}

^a Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada

^b Institute for Clinical Evaluative Sciences, Toronto, Ontario, Canada

^c Schulich Heart Centre, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

ABSTRACT

Background: The increasing frequency of global migration to Canada and other high-income countries has highlighted the need for information on the risk of ischemic heart disease (IHD) and stroke among migrant populations.

Methods: Using the MEDLINE and EMBASE databases, we conducted an English-language literature review of articles published from 2000 to 2014 to study patterns in the incidence of IHD or stroke in migrant populations to high-income countries. Our search revealed 17 articles of interest. All studies stratified immigrants according to country or region of birth, except 2 from Canada and 1 from Denmark, in which all immigrant groups were analyzed together.

Results: The risk of IHD or stroke varied by country of origin, country of destination, and duration of residence. In our review we found that most migrant groups to Western Europe were at a similar or higher risk of IHD and stroke compared with the host population. Those at a higher risk included many Eastern European, Middle-Eastern, and South Asian immigrants. When duration of residence was considered, it appeared that in most migrants the risk of IHD worsened over time. In contrast, immigrants overall were at lower risk of myocardial

RÉSUMÉ

Introduction : L'accroissement de la fréquence de la migration internationale vers le Canada et les autres pays à revenu élevé a fait ressortir le besoin d'information sur le risque de cardiopathie ischémique (CI) et d'accident vasculaire cérébral (AVC) chez les populations migrantes.

Méthodes : À partir des bases de données MEDLINE et EMBASE, nous avons mené une revue de la littérature de langue anglaise des articles publiés de 2000 à 2014 pour étudier les profils d'incidence de la CI ou de l'AVC des populations migrantes vers les pays à revenu élevé. Notre recherche a révélé 17 articles d'intérêt. Dans toutes les études, les immigrants étaient stratifiés selon le pays ou la région de naissance, à l'exception de 2 études du Canada et 1 du Danemark pour lesquelles tous les groupes d'immigrants étaient analysés ensemble.

Résultats : Le risque de CI ou d'AVC variait selon le pays d'origine, le pays de destination et la durée de résidence. Dans notre revue, nous avons observé que la plupart des groupes de migrants vers l'Europe occidentale étaient exposés à un risque similaire ou plus élevé de CI et d'AVC comparativement à la population hôte. Ceux exposés à un risque plus élevé comprenaient plusieurs immigrants de l'Europe

The changing political and economic landscape worldwide has led to increasing global migration.¹ Currently, there are 232 million international migrants, with the United States hosting the highest number, followed by Russia, Germany, Saudi Arabia, United Arab Emirates, United Kingdom, France, Canada, Australia, and Spain.² Migration from Asia, Latin America, and the Caribbean has increased dramatically over the past decade.² As rates of migration continue to increase in Canada and other countries, understanding the health of this

growing sector of the population becomes increasingly important, especially because certain subgroups might be particularly vulnerable to experiencing cardiovascular events. However, health outcomes among immigrants are complicated by various factors, including age at migration, country of origin and/or birth, country of destination, health, social and economic circumstances before migration, level of acculturation, and access to health care in the new environment.

Previous studies, particularly from North America, have found immigrants to be healthier than the host population, a phenomenon known as the “healthy immigrant effect” (HIE).^{3–5} This exists despite immigrants generally having lower socioeconomic status, fewer social supports, language barriers, and occasionally, facing discrimination in their new environments.^{6–8} The HIE might be explained by healthier individuals being more likely to migrate, selective immigrant criteria in destination countries, and less healthy individuals

Received for publication February 11, 2015. Accepted April 28, 2015.

Corresponding author: Dr Jack V. Tu, Institute for Clinical Evaluative Sciences, G106-2075 Bayview Ave, Toronto, Ontario M4N 3M5, Canada. Tel.: +1-416-480-4700; fax: +1-416-480-6048.

E-mail: tu@ices.on.ca

See page 1167 for disclosure information.

infarction and stroke in Ontario compared with long-term residents of Canada.

Conclusions: The risks of IHD and stroke vary widely in immigrant populations in Western Europe. Detailed studies of immigrants to Canada according to country of birth and duration of residence should be undertaken to guide future cardiovascular health promotion initiatives.

returning to their home country, an observation referred to as the salmon-bias effect.⁹ Over time, the immigrant health advantage has been found to dissipate, which might be attributed to acculturation.¹⁰⁻¹²

However, the extent to which the HIE applies to cardiovascular disease and across high-income countries remains unclear. Cardiovascular diseases, particularly, ischemic heart diseases (IHDs), including acute myocardial infarction (AMI) and coronary heart diseases, and stroke, are the leading causes of morbidity and mortality worldwide,¹³ and the World Health Organization estimates that 80% of this burden lies in low- and middle-income countries.¹⁴ Studies also show ethnic differences in the prevalence of cardiac risk factors, cardiovascular morbidity, and mortality.¹⁵⁻¹⁹ With increasing migration from low- and middle-income countries to high-income countries in Western Europe and North America, understanding cardiovascular outcomes in these populations can provide insights into future trends in the burden and management of cardiovascular disease.

The purpose of this review is to identify patterns in the incidence of IHD and stroke among immigrants to high-income countries in Western Europe and North America and how this varies as a function of country of origin. As a secondary objective, we also examined how the risk among immigrants changes over generations and with duration of residence in the destination country. In conducting this review, we sought to identify current gaps in knowledge about immigrant populations that warrant further research, particularly within a Canadian context.

Methods

Literature search

A literature search using MEDLINE and EMBASE was conducted. Search terms included the keyword “immigrant,” and exploding the MeSH terms, “emigrants and immigrants” and “emigration and immigration.” Literature on heart disease/stroke was found using keyword searches for “coronary artery disease,” “ischemic heart disease,” “myocardial infarction,” “coronary heart disease,” “cerebrovascular accident,” and “stroke,” and exploding the MeSH term “cardiovascular diseases.” Search results were combined for immigrant, heart disease, and stroke terms, and limited to English language and human studies published in the years 2000-2014, to capture the most recent information. A summary of the search strategy is shown in [Supplemental Table S1](#).

orientale, du Moyen-Orient et de l'Asie du Sud. Lorsque la durée de résidence était considérée, il semblait que chez la plupart des immigrants le risque de CI s'exacerbait avec le temps. En revanche, les immigrants étaient dans l'ensemble exposés à un risque plus faible d'infarctus du myocarde et d'AVC en Ontario comparativement aux résidents de longue durée du Canada.

Conclusions : Les risques de CI et d'AVC varient grandement entre les populations immigrantes en Europe occidentale. Des études approfondies sur les immigrants du Canada selon leur pays de naissance et la durée de résidence devraient être entreprises pour orienter les futures initiatives de promotion de la santé cardiovasculaire.

Study selection and data abstraction

Q.Z.S. screened the titles and abstracts of studies identified in the literature search and selected articles for full-text review. References of acquired articles were also screened for additional articles. Studies included in this review were limited to peer-reviewed cohort or case-control studies with sample sizes of at least 1000, which reported the incidence or relative risk of IHD or stroke in specific immigrant groups, or immigrants overall, compared with the host population. Host populations were limited to North America and Western Europe because these regions represent most high-income countries and have a high number of immigrants. Only studies that used country of birth, alone or in combination with other measures, to identify immigrants were included. We excluded the use of self-reported ethnicity because we were primarily interested in first-generation immigrants, which could not be determined from ethnicity alone. Results reported for refugees or asylum-seekers were excluded because the factors that influence cardiovascular risk in this population are complex and different from immigrants who migrate for economic or family reasons.

Q.Z.S. reviewed all articles that met the inclusion criteria and abstracted from each the year of publication, population size, age range, immigrants' countries of origin, definition of comparison groups, outcome measures, and years of study. A.C. confirmed the abstracted information. The main results and relative risk ratios reported for IHD or stroke were obtained for immigrant groups compared with the host populations. Because of a high degree of heterogeneity in study design, we chose not to combine study results in a quantitative meta-analysis. Rather, we stratified risk estimates from different studies according to world region of origin, and then quantified relative risk among immigrants compared with the host population by summing the number of subgroups at lower, similar, and higher risk. Risk was considered similar to the host population when the 95% confidence interval (CI) included 1, lower when the upper limit of the CI was < 1, and higher when the lower limit of the CI was > 1.

Results

Our search strategy identified 1725 potentially relevant articles ([Fig. 1](#)), of which 55 were selected for full-text review. Of these, 17 studies met the criteria for inclusion in this review ([Table 1](#) and [Supplemental Table S2](#)) including 4 from The Netherlands,²⁰⁻²³ 5 from Sweden,²⁴⁻²⁸ 2 from Denmark,^{29,30} 1 from Northern Ireland,³¹ 2 from

Download English Version:

<https://daneshyari.com/en/article/2721739>

Download Persian Version:

<https://daneshyari.com/article/2721739>

[Daneshyari.com](https://daneshyari.com)