



Contents available at ScienceDirect

Diabetes Research
and Clinical Practice

journal homepage: www.elsevier.com/locate/diabres



International
Diabetes
Federation



Type 2 diabetes hospitalisation and mortality in Vietnamese immigrants in Australia

Duong Thuy Tran ^{a,*}, Louisa R. Jorm ^{a,b}, Maree Johnson ^c,
Hilary J. Bambrick ^a, Sanja Lujic ^a

^aCentre for Health Research, Building 3, Campbelltown Campus, University of Western Sydney, Locked Bag 1797, Penrith, NSW 2751, Australia

^bThe Sax Institute, PO Box K617, Haymarket, NSW 1240, Australia

^cSchool of Nursing and Midwifery, University of Western Sydney, Locked Bag 1797, Penrith, NSW 2751, Australia

ARTICLE INFO

Article history:

Received 19 August 2013

Received in revised form
3 January 2014

Accepted 8 January 2014

Available online 18 January 2014

Keywords:

Australia

Hospital readmission

Immigrants

International Statistical

Classification of Diseases

Mortality

Vietnamese

ABSTRACT

In comparison to Australia-born patients with type 2 diabetes ($n = 14,197$), Vietnam-born patients ($n = 152$) had significantly higher risks of mortality (any-cause and diabetes-specific) while experiencing similar rates of readmission for diabetes and co-morbidities. The findings may reflect delays in seeking care and suboptimal diabetes care in Vietnamese immigrants. Further investigation into quality of diabetes care in Vietnamese immigrant populations is needed.

© 2014 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

In developed countries, certain ethnic communities bear a greater burden of type 2 diabetes than others [1–3]. The ethnic disparities may relate to variations in socio-economic status (SES), lifestyles and obesity [2], genetic preposition [4,5] and culture-driven factors including health perceptions and health care seeking behaviours [1,6,7].

In Australia in 2011, Vietnamese Australians ($n = 180,000$) were the 4th largest overseas-born ethnic group and they comprise the second largest Vietnamese community settled in

developed countries. The prevalence of diabetes in Vietnam-born people is higher than in native-born populations in Australia and some other countries [2,5–7]. Vietnamese immigrants also have inadequate levels of knowledge about diabetes and self-management of diabetes [8,9] and a lack of compliance with treatment and management plans [9–11]. However, little is known about experiences of diabetes-related hospitalisation and mortality in this population. This study aimed to investigate the pattern of readmissions to hospital for diabetes and co-morbidities and the risk of mortality in a cohort of Vietnam-born Australians in comparison to their Australia-born counterparts.

* Corresponding author. Tel.: +61 246203442; fax: +61 246203299.

E-mail addresses: D.Tran@uws.edu.au (D.T. Tran), L.Jorm@uws.edu.au (L.R. Jorm), M.Johnson@uws.edu.au (M. Johnson), H.Bambrick@uws.edu.au (H.J. Bambrick), S.Lujic@uws.edu.au (S. Lujic).

0168-8227/\$ – see front matter © 2014 Elsevier Ireland Ltd. All rights reserved.

<http://dx.doi.org/10.1016/j.diabres.2014.01.013>

2. Methods

2.1. Data sources

We obtained hospital morbidity data (7/2000–6/2008) from the New South Wales (NSW) Admitted Patient Data Collection (APDC) which are routinely linked to the NSW Registry of Births, Deaths, and Marriages (RBDM) and mortality data. The APDC is a mandatory data collection of all discharges from all hospitals and day procedure centres in NSW. The APDC data contain up to 55 diagnoses coded according to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), procedures undertaken, and a number of patient demographic and SES details [12]. The APDC data available to this study included more than 17 million admission episodes in NSW, relating to approximately 5 million people of all ages. Validation studies have shown good-to-excellent recording of diagnoses, procedure and country of birth in Australian hospital data [13,14].

The RBDM compiled deaths registered in the same period, providing date of death. Mortality data contained underlying and associated causes of death assigned according to the ICD-10-AM, and were available later (7/2000 to 6/2007) due to the time required for coding of causes of death [12].

The datasets were linked by the NSW Centre for Health Record Linkage. As Australia does not have a unique registration number for citizens, the linkage process used the privacy preserving approach and probabilistic matching method (false positive links <0.5% and false negative <0.1%) [12]. Only de-identified data were provided to the researchers.

2.2. Study populations and measures

Patients born in Vietnam and Australia were identified from the recording of country of birth in the most recent admission. Diabetes was ascertained based on the presence of E11 codes (“Type 2 diabetes”) in all diagnosis fields, provided that patients’ age was ≥ 31 years [5]. The first admission in the study period, for which diabetes and/or its complications was the non-surgical principal diagnosis, formed the baseline (‘index admission’) of the cohort. A total of 152 Vietnam- and 14,197 Australia-born patients who had their index admission between 7/2000 and 6/2007 and survived at least 30 days following the index admission were selected. Follow-up was to 30 June 2008 or death, whichever came first.

Primary outcomes included readmissions for diabetes and co-morbidities (cardiovascular diseases, renal disease, eye and vision disorders, neuropathy, chronic skin problems and cellulitis, excluding dialysis) as the principal diagnoses [3,15], time to death due to any causes and time to death due to diabetes (underlying or associated cause of death).

Potential confounding determinants of hospitalisation were grouped into predisposing, enabling, and need factors according to the Andersen and Newman’s Behavioural Model of Health Service Use [16]. Predisposing factors included gender, age and marital status. Enabling factors comprised private patient care, quintiles of the Index of Relative Socio-Economic Disadvantage (a SES measure of the residential area

[17], remoteness of the residential area, hospital peer group, public hospital and remoteness of hospital. Need factors included emergency hospitalisation, the Charlson co-morbidity index [18] and health risk factors (hypertension, hyperlipidaemia, smoking, obesity). All confounding variables were derived from the index admission, except the Charlson’s co-morbid conditions and health risk factors being identified from the index and other prior admissions (within 365 days).

2.3. Statistical analyses

Contingency tables were used to describe the characteristics of patients at baseline. Rates of readmissions per 1000 person-years were calculated and compared using Poisson regression models. Risks of any-cause and diabetes-specific mortalities were assessed by Cox proportional hazards regression models. Crude and adjusted rate ratio (RR), hazard ratio (HR) and 95% confidence interval (CI) were calculated. Multivariable models adjusted for predisposing, enabling and need factors. The variables remoteness of residence, public hospital and remoteness of hospital were highly correlated with hospital peer group, thus were excluded from the multivariable models.

We acknowledge that the index admission might not be the patient’s first hospitalisation, which possibly predated the study period [19]. To assess the robustness of findings, we conducted sensitivity analyses, using a 30-month ‘clearance’ period (a preceding period without an event of interest) [20]. In particular, patients who had the index admission between 7/2000 and 1/2003 were excluded from the initial cohort. The two sets of cohort yielded similar patterns of results. In this paper, we reported findings based on the initial cohort. All analyses were carried out in SAS version 9.3, using 5% level of significance. Ethical approval was granted by the NSW Population and Health Services Research Ethics Committee.

3. Results

At baseline, Vietnam-born patients were significantly more likely to live in low SES areas, use public patient care, have emergency admission, Charlson index ≥ 1 , hypertension and hyperlipidaemia but less likely to smoke cigarettes and have obesity than Australia-born patients (Table 1).

Eighty-three (54.6%) Vietnam- and 8217 (57.9%) Australia-born patients were readmitted for diabetes and co-morbidities, with 216 and 26,132 readmission episodes, respectively. Principal diagnoses of these readmissions included cardiovascular diseases (37.5% and 44.2%), nephropathy complications and chronic kidney diseases (32.4% and 7.5%), retinopathy complications and other eye or vision disorders (13.8% and 10.3%), acute complications and hypoglycaemia (6.0% and 8.2%), poor control (4.6% and 6.6%), diabetic foot ulcer and chronic skin problems (2.3% and 13.8%) and others (3.2% and 9.3%), respectively ($p < 0.001$). Readmission rate in Vietnam-born patients (450.7, 95%CI 394.4–515.0) was lower than in Australia-born patients (528.5, 95%CI 522.2–535.0) but the difference was not statistically significant (crude RR 0.85, 95%CI 0.67–1.09, $p = 0.20$; adjusted RR 0.81, 95%CI 0.64–1.03, $p = 0.09$).

Download English Version:

<https://daneshyari.com/en/article/5899795>

Download Persian Version:

<https://daneshyari.com/article/5899795>

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