Can J Diabetes 40 (2016) 17–30

Contents lists available at ScienceDirect

Canadian Journal of Diabetes

journal homepage: www.canadianjournalofdiabetes.com

Original Research

Diabetes Management in Long-Term Care: An Exploratory Study of the Current Practices and Processes to Managing Frail Elderly Persons with Type 2 Diabetes

Osman Osman MSc [a], Diana Sherifali RN, PhD, CDE [b,c,*], Paul Stolee PhD [a], George Heckman MD, MSc [a,d]

[a] School of Public Health and Health Systems, University of Waterloo, Waterloo, Ontario, Canada
[b] School of Nursing, McMaster University, Hamilton, Ontario, Canada
[c] Diabetes Care and Research Program, Hamilton Health Sciences, Hamilton, Ontario, Canada
[d] Schlegel University of Waterloo Research Institute for Aging, Waterloo, Ontario, Canada

ARTICLE INFO

Article history:
Received 23 July 2015
Accepted 20 October 2015

Keywords:
diabetes
elderly
frail
long-term care
management

ABSTRACT

Objectives: There is limited evidence for the management of diabetes in frail elderly residents living in long-term care (LTC) settings. The purpose of this study was to explore the current practices of glycemic management in frail elderly persons with diabetes living in LTC settings.
Methods: Using a mixed-methods convergent parallel design, this study surveyed medical directors and attending physicians of long-term care centres through an online questionnaire and one-on-one semistructured interviews.
Results: A total of 39 questionnaires were completed, representing a variety of LTC settings, including private and public settings. Diabetes management practices varied across the participating settings with respect to glucose targets, with 69% of respondents selecting glycated hemoglobin levels of 8% or greater as being appropriate for LTC residents. Blood glucose monitoring, pharmacotherapy, presence of comorbidities, frailty and life expectancy were highlighted as variables for consideration in diabetes management in LTC. Interviews with attending physicians further illustrated the variability of opinions related to the use of clinical practice guidelines, glucose target levels and intensity of management (i.e. blood glucose monitoring and pharmacotherapy).
Conclusions: The findings of this study were triangulated with both the quantitative survey and the qualitative interviews. The implications of these findings suggest a disparity between what physicians feel should be achieved for diabetes management and what is actually done for frail elderly adults in LTC settings. Further research needs to be completed to assess the distinct needs and considerations of this unique population and healthcare setting.

Mots clés :
diabète
personne âgée
fragilité
soins de longue durée
la gestion

RÉSUMÉ

Objectifs : Les données scientifiques sur la prise en charge du diabète chez les résidents âgés fragiles qui vivent dans des établissements de soins de longue durée (SLD) sont peu nombreuses. L'objectif de la présente étude était d'explorer les pratiques actuelles de prise en charge de la glycémie chez les personnes âgées fragiles souffrant de diabète qui vivent dans des établissements de SLD.
Méthodes : À l'aide de méthodes mixtes selon un devis parallèle convergent, la présente étude a été menée auprès des directeurs médicaux et des médecins traitants des centres de SLD au moyen d'un questionnaire en ligne et d'entrevues individuelles semi-structurées.
Résultats : Les 39 questionnaires remplis représentaient divers types d'établissements de SLD, dont les établissements privés et publics. Les pratiques de prise en charge du diabète en ce qui concerne les valeurs cibles de la glycémie variaient entre les établissements participants, parmi lesquels 69 % des répondants choisissaient des taux d'hémoglobine glyquée de 8 % ou plus comme taux appropriés pour les résidents en SLD. La surveillance de la glycémie, la pharmacothérapie, la présence de comorbidités, la fragilité et l'espérance de vie étaient apparues comme des variables à considérer dans la prise en charge du diabète en SLD. Les entrevues avec les médecins traitants illustraient davantage la variabilité des opinions liées

* Address for correspondence: Diana Sherifali RN, PhD, CDE, HSC-3N28F, McMaster University, 1280 Main Street West, Hamilton, Ontario L8S 4K1, Canada.
E-mail address: dsherif@mcmaster.ca

1499-2671
http://dx.doi.org/10.1016/j.jcjd.2015.10.005

à l'utilisation des lignes directrices de pratique clinique, des taux de glycémie cibles et de la complexité de la prise en charge (c.-à-d. la surveillance de la glycémie et la pharmacothérapie).
Conclusions : Les résultats de la présente étude étaient triangulés à l'enquête quantitative et aux entrevues qualitatives. Les conséquences de ces résultats suggèrent une disparité entre ce que les médecins estiment devoir être réalisé en matière de prise en charge du diabète et ce qui est réellement fait pour les personnes âgées fragiles dans les établissements de SLD. D'autres recherches devront être réalisées pour évaluer les besoins distincts et les spécificités de cette population et de cet environnement hospitalier particuliers.

Introduction

Type 2 diabetes mellitus represents the majority of diabetes, accounting for about 90% to 95% of cases. Previously known as adult-onset diabetes, type 2 diabetes has a high incidence in mid to later life and is strongly correlated with increasing age (1). According to 2008 data by the National Diabetes Surveillance System, the prevalence of diabetes from 2005 to 2006 was 7.6% in Canada. Furthermore, the current risk in Canada for developing diabetes is projected to be 8.9%, with about 1.9 million expected cases of diabetes between 2007 and 2017 (2,3). The prevalence of diabetes is highest in adults within the age groups of 75 to 79 years, 80 to 84 years and 70 to 74 years, with rates of 22%, 22% and 21%, respectively (1). Incidence is also highest in this age range, with 22.2 per 1000 individuals in the 75- to 79-year age group, followed by the 70- to 74-year and 65- to 69-year age groups, with 21 and 21 per 1000, respectively (1). The prevalence of diabetes in Ontario also increases with age and is highest in the 75 + age group, at approximately 20% in men and 16% in women in 1999 (4). Using data from the Continuing Care Reporting System maintained by the Canadian Institute of Health Information, Hirdes and colleagues found the prevalence of diabetes in Ontario long-term care (LTC) homes to be about 25% (in 2011), with approximately 90% to 95% of diabetes cases in people in LTC attributable to type 2 diabetes (5). Newly admitted older adults in Ontario LTC homes are becoming increasingly frail, with 56.8% of newly admitted older adults to LTC having high prevalence scores of health instability (5). Older adults with diabetes in LTC are at increased risks for adverse outcomes. Among 64 589 Ontario residents of LTCs admitted to hospital emergency departments in 2005, 13.8% of the residents had diagnoses of diabetes, and 4.1% of emergency visits were directly related to diabetes (6). These residents are frail, a state of increased vulnerability to adverse outcomes that arises from the accumulation, with age, of deficits across a variety of physiological systems, and they are at increased risk for adverse effects resulting from polypharmacy and antihyperglycemic therapy, such as hypoglycemia (7), a key consideration in the care plan of LTC residents who have diabetes.

Although there is growing national and international dialogue regarding glycemic management in long-term care, research on current practices in Canada is lacking. To our knowledge, Clement and Leung are the only researchers who have a published assessment of current diabetes practices for older adults in Canadian LTC homes (8). Their survey of LTC facilities in British Columbia showed that residents had average glycated hemoglobin (A1C) levels of 6.5%; 82% of residents had levels ≤7% (8). Barriers to care identified by Clement and Leung were assessed through chart audits, surveys and interviews with the nursing and physician staff, and work observations in 2009. Through a pilot project in a 254-bed LTC facility in Toronto, Clement and Leung found that staff was overwhelmed by the resident-to-staff ratio, that practices within the nursing home were outdated and that pharmacologic management did not conform to national guidelines (9).

Recently, there has been an interest in geriatric and diabetes research into using more individualized approaches to glycemic control in frail older adults, involving less stringent glycemic targets. However, little research of this kind has been conducted in Canada. The purpose of this study was to explore the current practices and processes in managing frail elderly people with type 2 diabetes who are living in LTC homes.

Methods

This study was a convergent, parallel mixed-methods design study featuring a cross-sectional survey and a qualitative interview phase. Full ethics clearance was received from the Office of Research Ethics of the University of Waterloo.

Survey development

A survey questionnaire was developed for the purpose of the study. Following a comprehensive literature review that did not identify any surveys relevant to diabetes management in the LTC environment, a survey was derived from a number of sources, including constructs from the literature and face validity from clinical experts. The survey was developed for medical directors and physicians because they are involved in medical care in LTC facilities, as well as for those involved in the managing medical staff (i.e. policy compliance, resident coverage, reviewing management reports) and the planning of resident care. Please refer to the Appendix for survey questions.

Twenty questions were used to grade, prioritize and/or rate importance of items related to diabetes management, using 5-point Likert scales. The questionnaire contained 5 sections: 1) LTC Policies; 2) Blood Glucose Testing and Management; 3) Pharmacotherapy; 4) Prioritizing Care; 5) Potential Barriers to Care. Each section provided a comments box, allowing respondents to express comments specific to each section. To assess face and content validity, an expert panel of diabetes experts across various healthcare settings evaluated the survey. Further testing (n=24) was conducted at a provincial LTC conference, gathering responses from 17 medical directors and 7 physicians attending a workshop related to diabetes management in LTC. The finalized survey was used for the remainder of the study.

Data collection

Distribution of the survey was originally implemented through the Ontario Long Term Care Association (OLTCA). The OLTCA has a formal application process, which facilitates distribution of research projects across all LTC facilities within Ontario. Approximately 425 LTC facilities are registered with the OLTCA, representing about 68% of LTC facilities in Ontario. A promotional ad was included in the OLTCA newsletter, which is electronically distributed to subscribers. However, response rate was low (3 respondents) with the newsletter. Further efforts were made to distribute the survey across the Ontario Long Term Care Physicians (OLTCP) mailing list. The OLTCP mailing list provided the remaining survey respondents (n=?). There are about 300 LTC physicians within the OLTCP mailing lists. In addition to the original distribution of the survey, 2 reminders were sent in order to increase response rates. Data were collected between March 2013 and late November 2013.