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Original Research

Gender-Related Differences in the Control of Cardiovascular Risk Factors in Primary Care for Elderly Patients with Type 2 Diabetes: A Cohort Study

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Key Messages

- Female patients with type 2 diabetes have higher relative risk (attributable to diabetes) to develop cardiovascular disease when compared to male counterparts.
- In this longitudinal study, we found that type 2 diabetes and hypertension were treated and controlled similarly in both genders.
- LDL cholesterol levels were significantly better controlled in elderly men with type 2 diabetes than in their female counterparts, regardless of statin therapy.

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ABSTRACT

Objective: The aim of this study was to estimate the association between gender and control of diabetes and other cardiovascular risk factors in elderly patients with type 2 diabetes mellitus.
Methods: The sujets âgés cohort is an observational study whose main objective was to describe the real-life management of elderly patients with type 2 diabetes mellitus in France. Nine hundred eighty-three patients with diabetes (517 men and 466 women) were recruited by 213 general practitioners and were followed up prospectively every 6 months for 3 years. Diabetes, hypertension and dyslipidemia were considered controlled if the glycated hemoglobin (A1C) was ≤7%, blood pressure was <140/90 mm Hg and low-density lipoprotein (LDL) cholesterol was ≤100 mg/dL. A1C levels and blood pressure measurements were recorded every 6 months for all patients. LDL cholesterol levels were optionally sampled every year.
Results: Women were older than men (77.3±5.72 vs. 76.1±6.01 years), more likely to be alone, less likely to be smokers/ex-smokers and less likely to have cardiovascular disease at baseline. Mean A1C levels of female patients (6.98%±1.03%) did not differ from those of male patients (6.91%±0.96%). Mean blood pressure measurements during follow up were not different between male and female patients. In contrast, female patients had significantly higher LDL cholesterol levels than male counterparts (105.2±32.6 vs. 94.9±29.1 mg/dL), regardless of statin therapy.
Conclusion: Our results suggest no difference in management of cardiovascular risk factors between elderly female patients with type 2 diabetes mellitus and their male counterparts, except for LDL cholesterol, which is significantly higher in women.

Mots clés :
facteurs de risque cardiovasculaire
diabète sucré
différences entre les sexes
soins primaires pour les personnes âgées
complications cardiovasculaires du diabète

RÉSUMÉ

Objectif : L'objectif de la présente étude était de déterminer s'il existe un lien entre le sexe et le contrôle du diabète et des autres facteurs de risque cardiovasculaire chez les patients âgés atteints du diabète sucré de type 2.
Méthodes : L'étude S.AGES est une étude observationnelle dont le objectif principal était de décrire la prise en charge en vie réelle des patients de plus de 65 ans atteints de diabète sucré de type 2 en France. Neuf cent quatre-vingt-trois diabétiques (517 hommes et 466 femmes) recrutés par 213 médecins généralistes ont été suivis de façon prospective tous les 6 mois durant 3 ans. Le diabète, l'hypertension artérielle, le LDL cholestérol étaient considérés comme contrôlés si l'hémoglobine glyquée (A1c) était≤7%, la pression artérielle <140/90mmHg et le LDL cholestérol ≤100 mg/dl. L'A1c et la pression artérielle étaient mesurées tous les 6 mois chez tous les patients. Le LDL cholestérol était mesuré annuellement de façon facultative.
Résultats : A l'inclusion, les femmes étaient plus âgées que les hommes (77,3±5,72 *vs* 76,1±6,01 ans), vivaient plus souvent seules, fumaient ou avaient fumé moins et souffraient moins de maladie cardiovasculaire. Les concentrations moyennes d'A1c des patientes (6,98 %±1,03 %) n'étaient pas différentes de celles des patients (6,91 %±0,96 %). Les valeurs moyennes de pression artérielle durant le suivi n'étaient pas différentes entre les hommes et les femmes. En revanche, les patientes avaient des concentrations de LDL cholestérol significativement plus élevées que leurs homologues masculins (105,2±32,6 *vs* 94,9±29,1 mg/dl), qu'elles soient traitées ou non par statines.
Conclusion : À l'exception du LDL cholestérol, qui est significativement plus élevé chez les femmes, nos résultats ne montrent aucune différence dans la prise en charge des facteurs de risque cardiovasculaire entre les patientes âgées atteintes du diabète de type 2 et leurs homologues masculins.

Introduction

Cardiovascular disease is the major cause of morbidity and mortality in patients with type 2 diabetes (1). Strict glycemic control has yet to show its impact on cardiovascular outcomes of patients with type 2 diabetes (2–8). Although results of studies of newer antidiabetic drugs are promising (9–11), they still need to be validated (12). On the other hand, numerous studies have demonstrated the favourable impact of controlling other modifiable cardiovascular risk factors on cardiovascular outcomes in patients with type 2 diabetes. There is unequivocal evidence that treatment of hypertension actually improves cardiovascular outcomes in patients with type 2 diabetes (13,14). There is also strong evidence that statin therapy to lower low-density lipoprotein (LDL) cholesterol has a significant beneficial effect on cardiovascular outcomes in these patients (15). Therefore it is necessary to address multiple risk factors simultaneously to provide optimal care to patients with type 2 diabetes.

Although being female confers cardiovascular protection in the general population, this advantage is known to diminish or disappear in patients with type 2 diabetes (16). In fact, female patients with type 2 diabetes have a higher relative risk (attributable to type 2 diabetes) of incident coronary heart disease, fatal coronary heart disease, and stroke compared with male patients with type 2 diabetes (17–19). These data suggest that type 2 diabetes affects the risk of cardiovascular disease differentially according to gender. Cardiovascular risk factors clustering in women (20), greater burden of cardiovascular risk factors and relative undertreatment (i.e. female patients with type 2 diabetes being less likely to be treated, or to achieve treatment targets, than their male counterparts) (21) are among the proposed mechanisms to explain the increased cardiovascular risk in female patients with type 2 diabetes compared with male counterparts. The aim of this study was to compare the control of type 2 diabetes and other cardiovascular risk factors between female elderly patients with type 2 diabetes and their male counterparts by looking for an association between gender and glycated hemoglobin (A1C) levels, blood pressure measurements, and low-density lipoprotein (LDL) cholesterol levels.