

THE RELATIONSHIP BETWEEN DIABETES CARE QUALITY AND DIABETES-RELATED HOSPITALIZATIONS AND THE MODIFYING ROLE OF COMORBIDITY (PUBLICATION)



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CONTEXT

Diabetes mellitus mostly occurs commonly in conjunction with other chronic conditions. Of adults with diabetes, 85% have at least 1 comorbid condition, and as many as 40% have 3 or more. Diabetes-concordant conditions are related to diabetes in terms of sharing the underlying predisposing factors and a common management plan. In contrast, diabetes-discordant conditions are not directly related to diabetes in their pathogeneses and are more likely to add to the complexity of clinical decision-making in the management of diabetes. Quality of diabetes care is commonly assessed by receipt of evidence-based monitoring tests for diabetes care, including glycated haemoglobin (A1C), low-density lipoprotein (LDL) cholesterol tests and eye examinations.

OBJECTIVES

This study aims to describe the prevalence and type of comorbid conditions, diabetes testing goals achievement, and diabetes-related hospitalizations; examine the associations between the likelihood of diabetes-related hospitalizations and diabetes testing goals achievement; and test the modifying effects of comorbidity type on the associations between the likelihood of diabetes-related hospitalizations and meeting diabetes testing goals.

METHODS

A population-based cohort study of 861,354 adults with diabetes was conducted in Ontario, Canada. The diabetes cohort was categorized into 4 groups defined by their comorbidity statuses: no comorbidity, diabetes-concordant only, diabetes-discordant only, and both concordant and discordant. Outcome variables were defined as having at least 1 hospitalization for diabetes-related short-or long-term complications between 2009 and 2011. Diabetes-care quality measures included glycated haemoglobin (A1C) and LDL-cholesterol testing and eye examinations between 2007 and 2009. Multivariable logistic regression models were performed to examine the associations between diabetes testing and diabetes-related hospitalizations and the modifying role of comorbidity type.

FINDINGS

Receipt of all 3 recommended monitoring tests in diabetes was higher in patients having diabetes-concordant conditions only (27.5%) or both concordant and discordant conditions (30.2%), compared to those having diabetes-discordant conditions only (19.6%). Compared to patients without comorbidities, patients with diabetes-discordant conditions were significantly less likely to receive recommended diabetes-monitoring tests than were those with diabetes-concordant conditions. There was a higher incidence of hospitalizations for diabetes-related short-term complications (3.3%) than for long-term complications (0.4%). Patients with comorbid conditions who received 4 or more A1C tests were significantly more likely to be hospitalized for diabetes-related short-term complications than those without comorbidities and those who did not complete recommended testing. Patients with and without comorbid conditions who received all 3 monitoring tests were significantly less likely to be hospitalized for diabetes-related long-term complications, compared to those without comorbidities and with fewer tests, after adjusting for other variables.

CONCLUSIONS

Patients with diabetes-discordant conditions need more closely targeted interventions and collaboration among healthcare providers. Diabetes testing alone does not directly prevent hospitalizations for diabetes-related short-term complications. Patient-centered diabetes care, including diabetes testing, along with self-monitoring of blood glucose levels, pharmacologic treatment, patient education and self-management support, are all known approaches to achieving glycemic targets and to lowering risks for diabetes-related complications and subsequent hospitalizations.

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