

A dietitian-led intervention reduced weight and waist circumference in obese patients with type 2 diabetes

Wolf AM, Conaway MR, Crowther JQ, et al. *Translating lifestyle intervention to practice in obese patients with type 2 diabetes: Improving Control with Activity and Nutrition (ICAN) study*. *Diabetes Care*. 2004;27:1570-6.

QUESTION

In obese patients with type 2 diabetes mellitus, is a registered dietitian-led case management (RDCM) intervention more effective than usual care (UC) for improving health indicators?

METHODS

Design: Randomized controlled trial (Improving Control with Activity and Nutrition [ICAN] study).

Allocation: Concealed.*

Blinding: Unblinded.*

Follow-up period: 12 months.

Setting: A tertiary care center in Charlottesville, Virginia, USA.

Patients: 147 patients ≥ 20 years of age (mean age 52 y, 59% women) who had type 2 diabetes (International Classification of Diseases, 9th Revision codes, and confirmation by a physician), were taking diabetes medications, had a body mass index ≥ 27 kg/m², were able to comprehend English, and were members of the Southern Health Services plan. Exclusion criteria were pregnancy, cognitive impairment, or medical reasons precluding dietary and physical activity modifications.

Intervention: 74 patients were allocated to the RDCM intervention (6 individual meetings [totaling 4 h]; 6 one-h small-group sessions; and telephone contact with the RD case manager to assess weight and waist circumference measurements, monitor labora-

tory results, discuss patient care issues with physicians [if appropriate], set goals [tailored but based on national dietary recommendations for type 2 diabetes and obesity], and provide education and support). 73 patients were allocated to UC (receipt of educational material and freedom to join other weight management or diabetes care programs).

Outcomes: Weight, waist circumference, glycemic control (HbA_{1c}), fasting lipid levels, use of prescription medications, and health-related quality of life (HRQOL) (Medical Outcomes Study Short Form-36).

Patient follow-up: 98% (intention-to-treat analysis).

MAIN RESULTS

At 12 months, patients who received the RDCM intervention lost more weight and had greater reduction in waist circumference than did those who received UC (Table). Patients in the RDCM group took fewer prescription medications per day ($P = 0.03$) and

improved in 7 of the 9 HRQOL domains ($P < 0.05$) compared with the UC group. The groups did not differ for HbA_{1c} ($P = 0.45$), total cholesterol ($P = 0.23$), low-density lipoprotein cholesterol ($P = 0.99$), high-density lipoprotein cholesterol ($P = 0.73$), or triglyceride levels ($P = 0.31$).

CONCLUSION

In obese patients with type 2 diabetes mellitus, a registered dietitian-led case management intervention was better than usual care for reducing weight, waist circumference, use of prescription medications, and improved health-related quality of life.

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For correspondence: Dr. A.M. Wolf, University of Virginia School of Medicine, Charlottesville, VA, USA. E-mail amw6n@virginia.edu. ■

*See Glossary.

Registered dietitian-led case management (RDCM) intervention vs usual care (UC) for patients with type 2 diabetes mellitus and obesity at 12 months†

Outcomes	Mean change from baseline		Difference in mean change from baseline (95% CI)
	RDCM	UC	
Weight (kg)	-2.4	0.6	3.0 (0.6 to 5.4)
Waist circumference (cm)	-5.5	-1.4	4.2 (1.6 to 6.8)

†CI defined in Glossary.

COMMENTARY

Given the dramatic worldwide increase in type 2 diabetes, initiatives that can reduce the incidence or burden of disease are welcome. 2 landmark diabetes prevention studies, the American Diabetes Prevention Program (DPP) (1) and the Finnish Diabetes Prevention Study (DPS) (2), showed that lifestyle interventions for patients with impaired glucose tolerance can result in weight loss, dramatically reducing conversion to diabetes (relative risk reduction 58%).

Nonetheless, the generalizability of these successful interventions (especially the DPP study) has been questioned because of the substantial cost of the lifestyle interventions that were used. In contrast, the approach by Wolf and colleagues (using dietitians as case managers, with an estimated cost of \$350/patient) resulted in significant reductions in body weight and waist circumference. Although HbA_{1c} was not reduced at the final 12-month follow-up, patients in the intervention group received substantially fewer oral hypoglycemic agents. It should

also be noted that the observed beneficial effects might have been even greater if the study had included a physical activity component.

The study by Wolf and colleagues is important because it shows that a modestly priced dietitian-led case management intervention can result in substantial weight reduction at 12 months. However, it leaves open the question: Who will pay for such an intervention?

Lawrence A. Leiter, MD, FRCPC
St. Michael's Hospital and University of Toronto
Toronto, Ontario, Canada

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