

Cognitive behaviour therapy relieved depression in type 2 diabetes mellitus

Lustman PJ, Griffith LS, Freedland KE, et al. *Cognitive behavior therapy for depression in type 2 diabetes mellitus: a randomized, controlled trial. Ann Intern Med* 1998 Oct 15;129:613–21.

Question

In patients with type 2 diabetes mellitus, is cognitive behaviour therapy (CBT), added to supportive diabetes education, effective in relieving depression and improving glycaemic control?

Design

10 week randomised controlled trial.

Setting

Academic medical centre in St Louis, Missouri, USA.

Patients

51 patients who were 21–70 years of age and had a diagnosis of type 2 diabetes mellitus confirmed by their primary physician and major depression (diagnostic criteria and score of ≥ 14 on the Beck Depression Inventory [BDI]). Exclusion criteria were suicidal ideation or history of attempted suicide; history of panic disorder; bipolar depression, or any psychotic disorder; substance abuse disorder; or receipt of psychoactive medications. 42 patients (82%) (mean age 55 y, 60% women) completed the treatment.

Intervention

All patients received diabetes education in hourly individual sessions with a certified diabetes educator every 2 weeks. Patients were allocated to CBT ($n = 20$) or no specific antidepressant treatment ($n = 22$). CBT consisted of 1 hour of treatment each week for 10 weeks from a licensed psychologist aimed at involving patients in pleasurable social and physical activities, problem solving procedures to resolve stressful circumstances, and cognitive techniques to identify and modify distorted thought patterns.

Main outcome measures

Remission of depression (BDI post-treatment score of ≤ 9) and improvement in symptoms of depression (decrease of $\geq 50\%$ in BDI score). Glycaemic control was assessed using glycated haemoglobin concentrations.

Main results

More patients who received CBT achieved remission of depression than did control group patients ($p < 0.001$) and more CBT group patients achieved improvement in symptoms of depression ($p < 0.001$) (table). At 6 months of follow up, remission and improvement were maintained in more CBT group patients than control group patients ($p = 0.03$ and $p = 0.04$, respectively) (table). These results were also seen in an intention to treat analysis. Post-treatment glycated haemoglobin concentrations did not differ between groups, but at 6 months glycated haemoglobin concentrations decreased by 0.7% in the CBT group and increased by 0.9% in the control group ($p = 0.04$).

Conclusions

The addition of cognitive behaviour therapy to diabetes education led to both remission and improvement of depressive symptoms in patients with type 2 diabetes. Glycaemic control was also improved.

*Cognitive behaviour therapy (CBT) v no specific antidepressant treatment for depression in type 2 diabetes**

Outcomes at 3 months	CBT	Control	RBI (95% CI)	NNT (CI)
Remission of depression	85%	27%	212% (67 to 558)	2 (1 to 3)
Improvement in symptoms	80%	36%	120% (28 to 317)	2 (2 to 7)
Outcomes at 6 months	CBT	Control	RBI (95% CI)	NNT (CI)
Remission of depression	70%	33%	110% (13 to 326)	3 (2 to 17)
Improvement in symptoms	70%	38%	84% (2.6 to 254)	3 (2 to 101)

*Abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article.

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Commentary

Although most primary care providers readily prescribe the new selective serotonin reuptake inhibitors, most are unaware of effective non-pharmacological approaches for the treatment of depression. Previous studies have shown that CBT is more effective than minimal treatment controls, and at least comparable to pharmacotherapy. Modest evidence also indicates that CBT in conjunction with pharmacotherapy may be more effective than pharmacotherapy alone. Finally, studies indicate that CBT may be more likely than pharmacotherapy in preventing subsequent relapse of depressive symptoms.¹

Lustman *et al* found that CBT effectively treated depression in patients with type 2 diabetes mellitus. These improvements

were maintained at 6 months of follow up. Their results showed that for every 2 patients treated with CBT, there would be 1 remission at 3 months (an impressive number needed to treat of 2 [95% CI 1 to 3]). CBT also improved glycaemic control at 6 months, suggesting a relation between improved mental health and medical outcome. Although this study has some shortcomings such as small sample size, potential selection bias, and less than ideal controls (eg, treatment group was seen for a longer period than control group), the results are promising and consistent with data from previous studies in non-medical patients with depression.

Short term CBT is a useful addition to diabetes education and is not only effective

in treating depression but can also improve glycaemic control in a selected group of patients with diabetes. Although further studies are needed, particularly those comparing CBT with pill placebos and antidepressants,² it is clear that CBT is an inexpensive alternative for the treatment of depression in medically ill patients, and one that is devoid of side effects.

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1 Hollon SD, Shelton RC, Davis DD. *J Consult Clin Psychol* 1993;61:270–5.

2 Jacobson NS, Hollon SD. *J Consult Clin Psychol* 1996;64:104–8.