COCHRANE CORNER

Psychological and pharmacological interventions for depression in patients with diabetes mellitus and depression: a Cochrane Review†

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†This review is the abstract of a Cochrane Review previously published in the *Cochrane Database of Systematic Reviews*, 2012, Issue 12: CD008381, doi: https://doi.org/10.1002/14651858.CD008381.pub2 (see www.cochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and the *Cochrane Database of Systematic Reviews* should be consulted for the most recent version of the review.

We thank the Cochrane Metabolic and Endocrine Disorders Group for their support in publishing this review.

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Background

Depression occurs frequently in patients with diabetes mellitus and is associated with a poor prognosis.

Objectives

To determine the effects of psychological and pharmacological interventions for depression in patients with diabetes and depression.

Search methods

Electronic databases were searched for records to December 2011. We searched CENTRAL in The Cochrane Library, MEDLINE, EMBASE, PsycINFO, ISRCTN Register and clinicaltrials.gov. We examined reference lists of included RCTs and contacted authors.

Selection criteria

We included randomised controlled trials (RCTs) investigating psychological and pharmacological interventions for depression in adults with diabetes and depression. Primary outcomes were depression and glycaemic control. Secondary outcomes were adherence to diabetic treatment regimens, diabetes complications, death from any cause, healthcare costs and health-related quality of life (HRQoL).

Data collection and analysis

Two review authors independently examined the identified publications for inclusion and extracted data from included studies. Random-effects model meta-analyses were performed to compute overall estimates of treatment outcomes.

Main results

The database search identified 3963 references. Nineteen trials with 1592 participants were included. Psychological intervention studies (eight trials, 1122 participants, duration of therapy three weeks to 12 months, follow-up after treatment zero to six months) showed beneficial effects on short (i.e. end of treatment), medium (i.e. one to six months after treatment) and long-term (i.e. more than six months after treatment) depression severity (range of standardised mean differences (SMD) –1.47 to –0.14; eight trials). However, between-study heterogeneity was substantial and meta-analyses were not conducted. Short-term depression remission rates (OR 2.88; 95% confidence intervals (CI) 1.58 to 5.25; $P = 0.0006$; 647 participants; four trials) and medium-term depression remission rates (OR 2.49; 95% CI 1.44 to 4.32; $P = 0.001$; 296 participants; two trials) were increased in psychological interventions compared to usual care. Evidence regarding glycaemic control in psychological intervention trials was heterogeneous and inconclusive. QoL did not improve significantly based on the results of three psychological intervention trials compared to usual care. Healthcare costs and adherence to diabetes and depression medication were examined in only one study and reliable conclusions cannot be drawn. Diabetes complications and death from any cause have not been investigated in the included psychological intervention trials.

With regards to the comparison of pharmacological interventions *v.* placebo (eight trials; 377 participants; duration of intervention three weeks to six months, no follow-up after treatment) there was a moderate beneficial effect of antidepressant medication on short-term depression severity (all studies: SMD –0.61; 95% CI –0.94 to –0.27; $P = 0.0004$; 306 participants; seven trials; selective serotonin reuptake inhibitors (SSRI): SMD –0.39; 95% CI –0.64 to –0.13; $P = 0.003$; 241 participants; five trials). Short-term depression remission was increased in antidepressant trials (OR 2.50; 95% CI 1.21 to 5.15; $P = 0.01$; 136 participants; three trials). Glycaemic control improved in the short term (mean difference (MD) for glycosylated haemoglobin A1c (HbA1c) –0.4%; 95% CI –0.6 to –0.1; $P = 0.002$; 238 participants; five trials). HRQoL and adherence were investigated in only one trial each showing no statistically significant differences. Medium- and long-term depression and glycaemic control outcomes as well as healthcare costs, diabetes complications and mortality have not been examined in pharmacological intervention trials. The comparison of pharmacological interventions *v.* other pharmacological interventions (three trials, 93 participants, duration of intervention 12 weeks, no follow-up after treatment) did not result in significant differences between the examined pharmacological agents, except for a significantly ameliorated glycaemic control in fluoxetine-treated patients (MD for HbA1c –1.0%; 95% CI –1.9 to –0.2; 40 participants) compared to citalopram in one trial.

Authors' conclusions

Psychological and pharmacological interventions have a moderate and clinically significant effect on depression outcomes in diabetes patients. Glycaemic control improved moderately in pharmacological trials, while the evidence is inconclusive for psychological interventions. Adherence to diabetic treatment regimens, diabetes complications, death from any cause, health economics and QoL have not been investigated sufficiently. Overall, the evidence is sparse and inconclusive due to several low-quality trials with substantial risk of bias and the heterogeneity of examined populations and interventions.