Review: some evidence suggests that cognitive behaviour therapy may reduce chest pain in the short term in patients with non-specific chest pain and normal coronary anatomy


Are psychological treatments effective for patients with non-specific chest pain and normal coronary anatomy?

**METHODS**

Data sources: Cochrane Review Group Specialised registers (November 2002); Cochrane Library (Issue 3, 2002); Medline (1966–2002); CINAHL (1982–2002); EMBASE/Excerpta Medica (1980–2002); Psychinfo (1887–2002); Biological Abstracts BIOSIS (1990–2002); reference lists of relevant studies and reviews; abstracts from cardiology, psychiatry, and psychology conferences; and personal communication with authors.

Study selection and assessment: randomised controlled trials (RCTs) that compared psychological interventions (cognitive behaviour therapy [CBT], relaxation therapy, hyperventilation control, or other psychotherapy, talking, or counselling therapy) with standard care, an attention placebo, or no intervention in patients with non-specific chest pain, atypical chest pain, or syndrome X and normal coronary anatomy. Patients receiving drug treatment for psychiatric disorders were excluded. Individual study quality was assessed based on randomisation, allocation concealment, blinding, and loss to follow up.

Outcomes: significant reduction in chest pain (pain intensity measured by categorical or visual analogue scales; or mean difference in pain scores or frequency of exacerbation).

**MAIN RESULTS**

8 RCTs (403 outpatients) met the selection criteria. Interventions assessed were CBT, brief nurse intervention, relaxation training, and breathing retraining. Follow up ranged from 3–36 months, and 5 trials had >80% follow up.

Meta-analysis using a fixed effects model showed that more patients who received psychological interventions (specifically CBT) had reductions in chest pain than those in the control group at 3 months and at 3–9 months (table). Similar results were found using a random effects model. Meta-analysis of 2 trials (n = 81) also showed that patients who received psychological interventions had a greater increase in chest pain free days at ≤3 months (standardised mean difference [SMD] 0.83, 95% CI 0.38 to 1.31).

Meta-analysis using a fixed effects model showed that patients who received CBT or guided re-breathing had greater reductions in chest pain frequency than those in the control group at 3 months (5 trials, n = 201, SMD = 0.87, CI –1.18 to –0.57) and at 3–9 months (3 trials, n = 124, SMD = 0.43, CI –0.79 to 0.07). However, analysis using a random effects model did not find significant differences between groups (SMD –0.83, CI –1.77 to 0.12 at 3 mo; –0.36, CI –0.90 to 0.18 at 3–9 mo).

**CONCLUSIONS**

Limited evidence exists on the effectiveness of psychological interventions for patients with non-specific chest pain and normal coronary anatomy. Some evidence suggests that cognitive behaviour therapy may reduce chest pain for up to 3–9 months.

**Commentary**

Considerable published evidence documents the negative effects of chest pain and discomfort in patients with normal coronary anatomy. The review by Kisely et al addresses a major gap in current understanding of the effectiveness of psychological interventions for the management of non-specific chest pain.

8 trials were included in the analysis. Sensitivity analyses were done to mitigate the influence of setting, attrition, and covariates including self-selection and comorbidity. The authors cautioned against generalisation of results because of incomplete reporting in original studies that precluded detailed examination of key differences between those willing and not willing to participate and heterogeneity of intervention format and duration.

Although the results of this comprehensive review suggest some positive effects of psychological interventions at 3 months, the clinical utility of these data for nursing management of non-specific chest pain is limited given the methodological problems noted. Moreover, perception of pain can be modulated centrally through descending central nervous system mechanisms, which are influenced by past pain experience, attention, and emotion. Pain experience and response are therefore highly variable. Given the variable and subjective nature of pain and response, the correlation between chest pain frequency, intensity, and duration, and level of pain-related psychological distress and disability may be robust for some patients but not for others. The appropriateness of chest pain frequency as a primary outcome warrants critical examination as frequency and intensity of pain symptoms can be unreliable predictors of pain-related disability, function, or psychological distress.

The review by Kisely et al emphasises the need for continued research on the effectiveness of psychological interventions for patients with non-specific chest pain in the longer term. Further research is required to examine the benefits of replicable, standardised nursing interventions wherein nurses can help patients to address individual priorities in order to enhance health-related quality of life and daily functioning, regardless of the frequency and severity of non-specific chest pain.

Michael McGillion, RN, PhD candidate
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**Cognitive behaviour therapy (CBT) v control in patients with non-specific chest pain and normal coronary anatomy**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Number of trials</th>
<th>CBT</th>
<th>Control</th>
<th>RRR [95% CI]</th>
<th>NNT [CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest pain at 3 months</td>
<td>3 (1/72)</td>
<td>64%</td>
<td>93%</td>
<td>32% (19 to 43)</td>
<td>4 (3 to 6)</td>
</tr>
<tr>
<td>Chest pain at 3–9 months</td>
<td>2 (111)</td>
<td>54%</td>
<td>93%</td>
<td>42% (24 to 55)</td>
<td>3 (2 to 5)</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary; weighted event rates, RRR, NNT, and CI calculated from data in article.*