Psychological intervention following implantation of an implantable defibrillator: a review and future recommendations

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CRD summary
The review assess the efficacy of psychological interventions for patients with an implantable cardioverter defibrillator. The authors concluded that evidence from small scale trials suggested interventions were worthwhile, but that more well-designed trials were needed. Methodological limitations of the review mean the authors' conclusions are not likely to be reliable.

Authors' objectives
To assess the efficacy of psychological interventions for patients with an implantable cardioverter defibrillator (ICD).

Searching
PubMed and PsycInfo were searched between January 1980 and April 2007 for peer-reviewed articles published in English; search terms were reported. Reference lists of included studies were searched.

Study selection
Studies of patients who received an ICD and which included an intervention with a psychological component and a comparison group were eligible for inclusion. Studies based on mixed-patient groups were excluded. Most participants in the included studies were men. Mean age ranged from 57 to 66 years (age range 28 to 83 years). Varied interventions were used; most were multifactorial. Four studies used a cognitive behavioural component. Other components included counseling and aerobic exercise. The average duration of intervention (where stated) was three months. All control treatments consisted of usual care (studies often reported few details). Anxiety (using a variety of scales) and quality of life were the most commonly reported outcome measures.

Two reviewers selected studies for inclusion.

Assessment of study quality
The authors did not state that they assessed study quality.

Data extraction
Anxiety outcome data were extracted and Cohen's effect sizes were calculated. The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
Results were pooled in a narrative synthesis grouped by outcome. Differences between studies were discussed in the text. Study details were tabulated.

Results of the review
Nine studies were included in the review: seven randomised controlled trials (n=379) and two observational studies (n=28). Sample sizes ranged from 12 to 168 participants.

Cardiac outcomes: No statistically significant reduction was reported in any of the five studies that examined the rate of shocks. Two cardiac rehabilitation trials both reported that intervention led to a significant improvement in exercise capacity.

Patient-centred outcomes: Effect sizes for changes (pre-post) in anxiety were generally small in the usual care group (although one study reported a large negative effect size), but ranged from small to large in the intervention groups. Only one of the six studies looking at quality of life and two of six studies looking at depression reported improvements favouring intervention.
Authors' conclusions
Preliminary evidence from small-scale trials suggested that psychological intervention was worthwhile in ICD patients; well-designed trials were warranted to substantiate these findings.

CRD commentary
The review addressed a clear question with appropriate inclusion criteria. Only two databases were searched for studies published in English, so it was possible that some relevant studies were missed and language bias may have been introduced. It was unclear whether independent double-assessment of studies was made during the selection process. No details were provided for the data extraction process, so it was possible that the review was subject to reviewer error and bias. It was unclear why the authors presented effect sizes calculated from within-group comparisons (rather than between-group comparisons) and more basic results data were not provided, which made interpretation very difficult. In light of the clinical heterogeneity between studies, the authors appropriately conducted a narrative synthesis. No assessment of study quality was made and sample sizes were generally small, so the reliability of the evidence was unclear. Despite the authors' conclusions, many studies reported no significant treatment effects. This review had several limitations and the authors' conclusions, despite being cautious, are not likely to be reliable.

Implications of the review for practice and research
Practice: The authors recommended that cognitive behavioural therapy and exercise training should form the mainstays of treatment.

Research: The authors stated that future trials should be of interventions that not only appealed to patient needs and concerns but also were logistically feasible (for example, web-based) for patients to attend. Trials should include large enough samples to have adequate power to test the efficacy of the given intervention. Future trials should also examine cost effectiveness and resource use.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.