Psychological treatment of patients with chronic toxic encephalopathy: lessons from studies of chronic fatigue and whiplash
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CRD summary
This review assessed the effectiveness of psychologically based treatments for ‘chronic toxic encephalopathy’ (CTE), chronic whiplash-associated disorder and chronic fatigue syndrome. The authors concluded that cognitive-behaviour therapy plus graded activity may improve symptoms of CTE. The conclusions were based on a small number of studies and study quality was not systematically assessed, so the conclusions may not be reliable.

Authors' objectives
To assess the effect of (neuro)psychological treatments for chronic toxic encephalopathy (CTE) and the comparable syndromes of chronic whiplash-associated disorder (WAD) and chronic fatigue syndrome (CFS).

Searching
PubMed and PsycLIT were searched from inception to June 2000, with the search being updated to August 2002; the keywords were stated. In addition, the reference lists in identified studies were checked.

Study selection
Study designs of evaluations included in the review
The inclusion criteria were not specified in terms of study design. The included studies were randomised controlled trials (RCTs), non-randomised controlled clinical trials, uncontrolled case series and case reports. The review did not describe the case reports in detail.

Specific interventions included in the review
Studies of psychological treatment and cognitive rehabilitation were eligible for inclusion. The included studies used the following components, either alone or in combination: cognitive-behaviour therapy (CBT), cognitive rehabilitation, graded exercise, multi-disciplinary rehabilitation programme, electroencephalogram biofeedback, fasting therapy, patient education, self-hypnosis, vocational therapy, counselling, support groups and relaxation. The treatments were carried out with individuals, groups, or with partners or relatives.

Participants included in the review
Studies of adult patients with CTE, CFS or WAD were eligible for inclusion. All the randomised controlled trials of CFS used the UK or US-CDC (Center for Disease Control) criteria for CFS.

Outcomes assessed in the review
Studies that presented experimental data were eligible for inclusion. The included studies assessed cognitive measures, medical care use, drug use, neurophysiological measures, physical measures, psychological measures, quality of life, patient satisfaction and return to work. The duration of follow-up, where reported, ranged from none to 7 years.

How were decisions on the relevance of primary studies made?
Two reviewers independently selected the studies for inclusion. There was full agreement between reviewers.

Assessment of study quality
The studies were graded using a hierarchy of evidence based on study design. Quality A evidence was provided by RCTs, quality B evidence by non-randomised case-control studies, quality C evidence by case series, and quality D evidence by case reports of single cases. The authors did not state how the papers were assessed for quality, or how many reviewers performed the quality assessment.
Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. Outcomes assessed in the individual studies were tabulated, with significant findings highlighted.

Methods of synthesis
How were the studies combined?
The characteristics of the included studies were summarised in the text of the review with respect to study design, theory underlying the intervention and treatments. The studies were grouped according to the patients' diagnosis (CTE, WAD or CFS) and a narrative synthesis was undertaken.

How were differences between studies investigated?
Some differences between the studies were discussed in the text.

Results of the review
The authors stated that a total of 34 studies were included. However, only data from 28 studies were tabulated in the review. Three case series were of CTE (33 patients). One non-randomised controlled study (50 patients), 2 case series (99 patients) and 2 case reports (4 patients) were of WAD. Seven RCTs (810 patients), 2 non-randomised controlled studies (137 patients), 5 case series (115 patients) and 6 case reports (7 patients) were of CFS.

CFS: only the results of the 7 RCTs were reported in detail in the text of the review. Most of the interventions were broadly based on a multifactorial model for aetiology and symptoms. Four of the 6 RCTs using CBT suggested that CBT was more effective than standard medical care (3 RCTs), guided support groups (1 RCT) and relaxation training (1 RCT). The methodological limitations included a high drop-out rate in one RCT.

WAD (3 uncontrolled studies of psychological treatments, quality C): the studies suggested that a combination of CBT, graded activity and counselling on return to work may increase the likelihood of returning to work.

CTE (3 case series, quality C): the studies showed inconsistent results.

Authors' conclusions
CBT plus graded activity may help reduce fatigue and improve memory and concentration in patients with CTE.

CRD commentary
The review question was clear in terms of the intervention and participants, and the inclusion criteria were broadly defined in terms of outcomes. Only two databases were searched, which may have resulted in the omission of other relevant studies. In addition, it was unclear whether any language limitations were applied. No attempt was made to locate unpublished studies, thus raising the possibility of publication bias. Two reviewers independently selected the studies, which reduces the potential for bias and errors. The methods used to assess quality and extract the data were not described; hence, any efforts made to reduce errors and bias cannot be judged.

Some relevant information on the included studies was tabulated, but the quality assessment was limited to study design. Attrition rates were not consistently reported, there was no comment on the validity of the methods used to assess the outcomes, and the results from individual studies were not reported as values with measures of variance. The narrative synthesis was appropriate given the small number of studies. Conclusions from reviews were reported without a critical evaluation of the review. Without an assessment of the validity of the included studies, it was not possible to assess the strength of the evidence presented. In addition, the evidence was based on only a small number of included studies. In view of these limitations, the authors’ conclusions may not be reliable.

Implications of the review for practice and research
Practice: The authors stated that CBT, which challenges the effectiveness of rest and stimulating graded activity, may
be effective in patients with CTE.

Research: The authors stated that further research is required to assess the effectiveness of cognitive rehabilitation on cognitive deficits in patients with CTE.

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