Authors' objectives
To review the efficacy and safety of electroconvulsive therapy (ECT) for psychiatric disorders in young people.

Searching
Medical and psychological databases (unspecified) were searched, bibliographies were examined, and relevant literature was handsearched up to March 1996. Non-English language studies were translated and included.

Study selection

Study designs of evaluations included in the review
Any studies designs were considered. Most were single case reports (63%); no controlled trials were found.

Specific interventions included in the review
ECT. The actual nature of the intervention, such as the number and frequency of treatments, is not mentioned in many of the primary studies; however, in 95 patients this information is given, and a mean of 9.6 treatments was obtained. Studies employing unilateral and bilateral electrode placement are included.

Participants included in the review
Patients aged under 18 years with major psychiatric disorders. The age was not given in many of the primary studies, but for 98 patients for whom age was specified, a mean age of 15.4 years was calculated. The youngest was 7 years and approximately half the patients were female. The disorders treated include major depression, psychotic depression, manic episodes, bipolar disorder, schizoaffective disorders, schizophrenia, catatonia, neuroleptic malignant syndrome, and other disorders.

Reliability of diagnosis was not reported in any of the primary studies.

Outcomes assessed in the review
Proportion of patients with remission or marked improvement. This information was often not reported quantitatively, but in an 'impressionistic' way according to the review's authors.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
A quality score was obtained by rating each study according to a checklist (details provided), to derive an overall quality score. The papers were assessed for validity by two independent authors.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
The overall proportion of patients improved was calculated.
How were differences between studies investigated?
Differences between the studies were investigated narratively.

Results of the review
Sixty studies (396 patients) were included.

Effectiveness: overall, 53% of 154 patients for whom data on diagnosis and outcome were available, showed improvement or remission of symptoms. This rose to 67% when patients with mild or moderate response to treatment were included. There were no differences in improvement according to electrode placement, age, or presence of co-morbidity. Cases from reports published after 1980 showed higher response rates than earlier ones. Improvement generally occurred early in the course of treatment.

Safety: no fatalities due to ECT were described. Earlier studies reporting a large number of, or very frequent treatments did not report long-term problems. Other adverse effects are reported, including seizures, but it is difficult to estimate the overall rate of these events as not all studies reported them. However, the authors estimate that the rate of lengthy seizures in the young does not seem to be greater than 1.1%, which has been cited for adults. Headache was reported in 16 cases, though it is difficult to translate this into an overall rate as the denominator is not reported, and the rates of headache and mild side-effects varies widely between studies (from 28 to 100% in studies that report this information). The results are not considered by the review's authors to be subject to publication bias, as survey evidence is cited from Australia to suggest that the primary studies reflect current practice.

Authors' conclusions
Our knowledge about ECT in adolescents and children is deficient, and randomised controlled trials are needed. ECT should be used with caution in this age group because of the lack of knowledge. However, bearing in mind the severity and complexity of illness of the patients treated, and the mild nature of most adverse events, the rate of improvement across disorders of 67% is heartening.

CRD commentary
This is a good quality, thorough review which highlights the absence of any reliable evidence regarding the effectiveness or safety of ECT in this group of patients.

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