A comparative analysis of antidepressants and stimulants for the treatment of adults with attention-deficit hyperactivity disorder

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Authors' objectives
To determine whether antidepressants are as effective as stimulants in the treatment of adults with attention-deficit hyperactivity disorder (ADHD).

Searching
MEDLINE was searched for English language articles (years and search terms not listed). Reference lists of other pertinent studies were scanned.

Study selection
Study designs of evaluations included in the review
Controlled and uncontrolled, retrospective and prospective studies. Open-label and double blind designs were included. Details of whether studies were controlled, and what the control groups were, were unclear.

Specific interventions included in the review
Stimulants: methylphenidate/ Ritalin (MPH); pemoline/ Cylert.

Antidepressants: deprenyl; pargyline/ Eutonyl; desipramine/ Norpramine; bupropion/ Wellbutrin; venlafaxine/ Effexor; fluoxetine/ Prozac; sertraline/ Zoloft; tomoxetine.

Studies which combined treatments (e.g. an antidepressant and a stimulant) were excluded.

Some studies were placebo controlled, it is not clear what other controls were used.

Participants included in the review
Adults with ADHD. It is not clear whether the trial participants were self-diagnosed or whether the diagnosis of ADHD was confirmed by clinicians. All fulfilled the criteria for ADHD but these criteria varied over the 22 year span of the articles.

Outcomes assessed in the review
Response, no further details given.

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

Assessment of study quality
The author does not state that they assessed validity.

Data extraction
The author does not state how many of the reviewers extracted the data or how any disagreements were resolved. Data were extracted on blinding, whether the trial was a crossover trial, number of participants, medication given in the active group and number of responders.

Methods of synthesis
How were the studies combined?
Not stated. The study details are presented in tables and discussed narratively but the results do not seem to be combined. One indirect comparison of stimulants and antidepressants was undertaken.

How were differences between studies investigated?
Aspects of study design are discussed in the text but not applied to the results.

Results of the review
Nine studies on stimulant medication (n=280) and eleven studies on antidepressant medication (n=216).

Stimulants: The range of positive responders was 25% to 100% and results in the placebo-controlled studies were inconclusive. Childhood history of ADHD was associated with response in one study but not in another.

Antidepressants: The range of positive responders was 0% to 75%. Desipramine, bupropion, venlafaxine and tomoxetine appeared to be equally effective and fluoxetine and sertraline produced no response. The results of the indirect comparison from two trials showed that groups treated with 1.0mg/kg/day MPH and 200mg/day desipramine had similar responses as measured by the ADHD scale.

Authors' conclusions
Antidepressants and stimulants seem to be equally effective for adults with attention-deficit hyperactivity disorder (ADHD). Recent controlled studies suggest that desipramine (an antidepressant) may be as effective as methylphenidate (a stimulant) for improving symptoms of adult ADHD. Although few good controlled studies exist, the available research suggests that certain antidepressants and stimulants are equally effective for adults with ADHD. Antidepressants may offer a safe first-line treatment for adults with ADHD.

CRD commentary
There are many details missing from this review. The research question is clear but the literature search is poor - searching only one electronic database is likely to lead to publications being missed, as is restricting the search to English language articles. No effort was made to search for unpublished material and the literature search was poorly reported. Few details are given of inclusion criteria and there is no attempt to assess study validity, although more weight is given in the narrative to the results of placebo-controlled trials. It is unclear from the data presented which studies were placebo-controlled and which studies were uncontrolled, or how 'response' was measured, so the results are difficult to interpret. An indirect comparison is presented however there is no discussion of whether participant characteristics and population event rates were similar in the two trials compared and the results are therefore difficult to interpret.

The author's conclusions should be treated with caution given the above methodological limitations.

Implications of the review for practice and research
Practice: The author suggests that physicians treat patients with antidepressants rather than stimulants due to safety concerns. The author states that a good approach is to start with an agent from one class, either noradrenergic agents (desipramine, venlafaxine and tomoxetine) or dopaminergic agents (bupropion) and switch to an agent from another class if the patient fails to respond or has intolerable side effects. It is important to use an adequate dose of an antidepressant (a dose similar to that used to treat depression) before switching to another agent.

Research: The author states that future research should focus on treatment options for adults who have some symptoms of ADHD but fail to meet the full criteria. In particular, would antidepressants help problems with concentration and attention in patients who have a subthreshold ADHD? Future research needs to be conducted in primary care settings.

Bibliographic details

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