
Yohimbine for erectile dysfunction: a systematic review and meta-analysis of randomized clinical trials

Ernst E, Pittler M H

Authors' objectives

To assess the efficacy and safety of yohimbine for the treatment of erectile dysfunction.

Searching

The authors searched the electronic databases of MEDLINE (1966 to 1997), EMBASE (1974 to 1997) and the Cochrane Library (issue 1, 1997) for relevant articles. The authors also asked all manufacturers of yohimbine to contribute published and unpublished trials, and searched their personal files. Bibliographies of the retrieved studies and reviews were scanned. There were no language restrictions.

Study selection

Study designs of evaluations included in the review

Randomised placebo-controlled, double-blind clinical trials (RCTs) of yohimbine with adequate statistical evaluation.

Specific interventions included in the review

Yohimbine (5 to 10 mg, 3 times per day) or yohimbine hydrochloride (5, 5.4 or 6 mg 3, 4, or 8 times per day) orally for a period of 2 to 10 weeks for the treatment groups and placebo for the control groups.

Participants included in the review

Men suffering some form of erectile dysfunction aged 18 to 70 years.

Outcomes assessed in the review

A decrease in erectile dysfunction, assessed by self-report by patient and partner, score on penile erection and interest in sex, derogatis sexual functioning inventory, penile brachial index, daytime arousal test, Clinical Global Impression Scale, positive penile rigidity (by polysonography), inventory of sexual functioning, nocturnal penile tumescence, and waking erectile assessment.

How were decisions on the relevance of primary studies made?

All articles were evaluated independently by both authors.

Assessment of study quality

Trials were scored using the Jadad scale for methodological quality (see Other Publications of Related Interest). Trials were excluded if they scored less than 3 on the Jadad scale. Articles were evaluated independently by both authors.

Data extraction

The authors do not state who, or how many of the reviewers performed the data extraction. Data extraction followed a standardised, predefined procedure.

Methods of synthesis

How were the studies combined?

Pooled odds ratios (ORs) weighted by sample size, with 95% confidence intervals (CIs) were calculated using percentage response rates.

How were differences between studies investigated?

There were no formal tests for heterogeneity, however the authors discuss variability between studies in the text of the

review, including heterogeneity in patients and outcomes.

Results of the review

Seven RCTs were included with 419 participants.

The pooled OR was 3.85 (95% CI: 2.22, 6.67), favouring treatment, which was statistically significant.

Adverse effects necessitated 8 withdrawals across the studies. Adverse events included: hypertension, loss of anti-epileptic action of phenytoin, rash, anxiety, dizziness, increased frequency of urination, chills, headache, sweating, agitation, tachycardia, gastrointestinal disturbances, diarrhea and lethargy.

Authors' conclusions

Yohimbine is clinically more effective than placebo. Furthermore, it is relatively safe, its oral administration has obvious advantages and its costs are low. These characteristics render yohimbine an attractive therapeutic option in the treatment of erectile dysfunction that should be considered as initial pharmacological intervention.

CRD commentary

The authors have clearly stated their research question and some inclusion and exclusion criteria. The literature search appears thorough. The quality of the included studies was formally assessed and the authors have also reported on how the articles were selected, and how many of the reviewers were involved in the data selection and quality assessment.

The data extraction is reported in tables and text. Across studies the effect sizes ranged from 34 to 73% which suggests heterogeneity between studies. The authors suggest that this could be due to differences in the included patients (e.g. patients with different types of erectile dysfunction (organic, non-organic, psychogenic). Because of the variability across results, statistical pooling was not appropriate.

Implications of the review for practice and research

The authors did not state any implications for further research and practice.

Bibliographic details

Ernst E, Pittler M H. Yohimbine for erectile dysfunction: a systematic review and meta-analysis of randomized clinical trials. *Journal of Urology* 1998; 159(2): 433-436

PubMedID

9649257

Other publications of related interest

1. Jadad AR, Moore RA, Carroll D, Jenkinson C, Reynolds DJ, Gavaghan DJ, et al. Assessing the quality of reports of randomized clinical trials: is blinding necessary? *Control Clin Trials* 1996;17:1-12.

Indexing Status

Subject indexing assigned by NLM

MeSH

Adrenergic alpha-Antagonists /therapeutic use; Double-Blind Method; Erectile Dysfunction /drug therapy; Humans; Male; Randomized Controlled Trials as Topic; Yohimbine /therapeutic use

AccessionNumber

11998000212

Date bibliographic record published

31/07/2000

Date abstract record published

31/07/2000

Record Status

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.