Noncompliance with ocular hypotensive treatment in patients with glaucoma or ocular hypertension: an evidence-based review

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CRD summary
This review concluded that small but significant improvements in patient compliance are associated with interventions to reduce noncompliance with ocular hypotensive treatment, in patients with glaucoma or ocular hypertension. However, the poor quality and small size of the included studies suggest that these findings may not be reliable, therefore the reviewers’ conclusions should be interpreted with caution.

Authors' objectives
To investigate noncompliance with ocular hypotensive treatment in patients with glaucoma or ocular hypertension. This abstract focuses only on the assessment of the effectiveness of interventions to improve compliance.

Searching
MEDLINE, CINAHL, EMBASE, PsycINFO and the Cochrane Library were searched up to February 2004; the search terms were reported. In addition, the reference lists of relevant articles and the authors' personal collections of articles were screened for additional studies. Only studies written in English, German, French or Dutch were included in the review.

Study selection
Study designs of evaluations included in the review
Quantitative studies were eligible for inclusion in the review of intervention studies. Both comparative studies and before-and-after studies were included. Follow-up periods ranged from 20 days to 6 months.

Specific interventions included in the review
Studies assessing any intervention aimed at improving patient compliance with ocular hypotensive treatment were eligible for inclusion. Studies of interventions aimed at reducing other forms of noncompliance such as excessive use of medication, involuntary noncompliance, noncompliance with follow-up appointments, or a combination of different forms of noncompliance, were excluded from the review. Studies comparing compliance with different types of drugs were also excluded. The interventions included in the review varied but were aimed at either educating or counselling patients, aiding their memory, or both. The control groups, where applicable, were no treatment; one trial compared counselling and a memory aid with counselling alone.

Participants included in the review
Studies of patients with glaucoma or ocular hypertension who required ocular hypotensive treatment were eligible for inclusion. The majority of trials included only glaucoma patients with either open-angle or chronic simple glaucoma; one trial included glaucoma and ocular hypertensive patients.

Outcomes assessed in the review
Eligible studies had to report some measure of the level of treatment compliance, defined as the degree of correspondence between the prescribed treatment regimen and the patient's actual dosing history. Studies that assessed other forms of noncompliance without reporting separate data for treatment compliance were excluded from the review. The outcomes assessed in the review included: amount of drug used; patient's own estimate of compliance; percentage of time patients remembered to take their medication; mean number of repeat prescription refill requests; proportion of missed doses; the proportion of time exceeding the recommended 8-hour dose interval; and intraocular pressure.

How were decisions on the relevance of primary studies made?
Two reviewers independently assessed the relevance of studies and any disagreements were resolved through discussion.
Assessment of study quality
The studies were assessed using an extended version of the Delphi list, of which the following criteria were considered to be the most important: randomisation, blinding and the use of an objective assessment method for noncompliance. Study quality was then rated as poor, moderate or good, based on the findings from the aforementioned criteria. The authors did not state how many reviewers performed the assessment or how any discrepancies were resolved.

Data extraction
Two reviewers independently extracted the data from the included studies. The outcome data appear to have been reported as in the original study report.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative summary.

How were differences between studies investigated?
Some differences were evident from the text and tables of the review. The authors stated that they did not pool the study data as the interventions and outcome measures were not clinically comparable.

Results of the review
Four studies (n=346) evaluated interventions to improve compliance: one randomised controlled trial (RCT), one randomised crossover trial, and two before-and-after studies (one controlled and one uncontrolled). Twenty-nine studies in total were included in the review.

Only one study was judged to be good quality; the remaining three studies were reported as satisfying only a small number of quality criteria. The four studies all showed small but significant (p<0.05) differences in compliance favouring the intervention group; the specific outcome measures varied between each study. The interventions included a medication alarm device; a memory aid in the form of the ‘C Cap Compliance Cap’; counselling and the ‘C Cap Compliance Cap’; and an education-and-tailoring programme. The RCT of the education-and-tailoring programme was judged to be of a good quality and to provide the most convincing evidence to support effectiveness.

Authors’ conclusions
Significant but small improvements in patient compliance were observed with all of the interventions aimed at improving treatment compliance. One study of an education-and-tailoring programme was considered to provide the most convincing evidence.

CRD commentary
This review answered a clear research question that was supported by a reasonable literature search of electronic databases and other sources. However, some relevant studies might have been missed as only studies written in a limited number of European languages were eligible for inclusion. It is also unclear how extensive any efforts were to locate unpublished data. Efforts were made to reduce the risk of error and bias when selecting and extracting the study data, and the quality of the studies was assessed using published criteria, though it is not clear whether similar efforts were made to reduce bias and error when making these assessments. Given the differences between the included studies in terms of their design, patient populations, interventions and outcome measures, the use of a narrative synthesis appears appropriate. However, the poor quality and small size of the majority of the included studies suggest that the small differences in effect size may not be reliable and the reviewers’ conclusions should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors stated that attempts to enhance compliance should focus on the patients’ knowledge and understanding of glaucoma, patient forgetfulness and reducing dose frequency.

Research: The authors stated that further good-quality research is required on what are the relevant issues associated with improving the patients’ knowledge. In addition, further theory-based intervention studies are needed to develop useful measures to enhance patient compliance. An absence of data on the cost-effectiveness of interventions to
improve patient compliance with ocular hypertensive treatment was also noted.

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