Interventions to improve antipsychotic medication adherence: review of recent literature
Dolder C R, Lacro J P, Leckband S, Jeste D V

CRD summary
This review assessed interventions aimed at improving antipsychotic adherence in patients with schizophrenia. Greatest improvements in adherence were found for combinations of educational, behavioural and affective interventions. It was unclear whether results reported as ‘improved’ were statistically significant results since the intervention and control groups were not compared using statistical tests. The conclusions are suggestive rather than definitive.

Authors' objectives
To assess the effect of interventions aimed at improving antipsychotic adherence in patients with schizophrenia.

Searching
MEDLINE, HealthSTAR and PsycINFO were searched from 1980 to 2001 for studies published in the English language; the keywords were listed. In addition, the reference lists in the identified studies were checked.

Study selection
Study designs of evaluations included in the review
Studies that included at least 20 patients were eligible for inclusion. The included studies were randomised controlled trials (RCTs), controlled trials and case series.

Specific interventions included in the review
Studies of interventions designed to improve any aspect of drug adherence were eligible for inclusion. The review classified interventions as educational (emphasis on knowledge), behavioural (targeting, shaping or reinforcing specific behaviour patterns), affective (appealing to emotions, feeling, or social relationships and social support), or combinations of these. The included studies used individual and group interventions. The number of sessions varied from one session to every 2 weeks for 2 years.

Participants included in the review
Studies in which the majority of the patients had been diagnosed as having schizophrenia or schizoaffective disorder and had been prescribed antipsychotic medication were eligible for inclusion. In the included studies, 88% of the patients were diagnosed as having schizophrenia or schizoaffective disorder. Most of the patients were young adults (mean age 35 years) and 64% were male (across studies reporting this). The studies were of out-patients, in-patients, or a mix of the two. Where reported, the baseline mean rate of nonadherence was 41% (standard deviation, SD=19).

Outcomes assessed in the review
Studies that reported quantitative results of drug adherence were eligible for inclusion. The review classified measures of adherence as direct measures (using tracer substances or biochemical markers), indirect measures (monitoring of pill or medication use), or subjective measures (view of patient or others). Most of the included studies used one measure of adherence. Some studies used Likert scales to measure the extent of adherence, while others classified the patients as adherent or nonadherent. The secondary outcomes reported in the review included medication knowledge, insight into treatment, hospitalisations, psychopathology and social functioning.

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

Assessment of study quality
Validity was not formally assessed. However, some aspects of validity were discussed in the text, including the
methods used to assess adherence and sample size.

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

The mean nonadherence rate was calculated for the treatment and control groups of controlled studies that reported adequate data.

Methods of synthesis
How were the studies combined?
The characteristics (methods used to assess outcomes, interventions, patient characteristics, study setting and design) of the included studies were summarised in the text of the review. The studies were grouped according to the intervention type and a narrative synthesis was undertaken. The median and mean (with SD) nonadherence rate at baseline and follow-up were calculated for studies reporting adequate data.

How were differences between studies investigated?
The results for the controlled studies were considered separately. The median and mean (with SD) nonadherence rate at baseline and follow-up were calculated separately for each treatment arm in the controlled studies. Differences between the studies were discussed in the text of the review, with reference to date of publication, type of intervention, number of sessions of the intervention, and sample size. The median number of sessions and the median sample size were calculated for studies that reported improved adherence compared with studies reporting no improvement. The authors also discussed other differences among the studies in the text of the review.

Results of the review
Twenty-one studies were included: 17 RCTs (1,829 patients), 2 controlled trials (279 patients) and 2 case series (237 patients). A total of 23 interventions were reported in the included studies.

All but one of the studies used subjective measure to assess adherence. Six studies used indirect objective measures and 3 studies used direct objective measures.

The results for the controlled studies varied. Three of the 6 controlled studies that reported adherence rates at baseline and follow-up found that the interventions improved adherence, 2 studies reported no improvement, and one found mixed results. The mean nonadherence rate at baseline was 37.1% (SD=12.1) for the control group and 33.7% (SD=10.4) for the intervention group; the median values were 32.0% and 28.0%, respectively. The mean nonadherence rate at follow-up was 34.7% (SD=26.4) with the control compared with 24.0% (SD=22.5) with the intervention; the median values were 24.5% and 14.0%, respectively.

Type of intervention: adherence was improved by one of the four educational interventions, by both behavioural interventions, and by four of the five affective interventions. Most combinations of interventions improved adherence (6 out of 10 studies).

Date of publication: combinations of interventions were more commonly used in recent publications. Combinations were used in 2 of the 10 studies published between 1980 and 1990, compared with 10 of the 13 studies published between 1991 and 2001.

Secondary outcomes: educational interventions generally improved medication knowledge and insight into treatment. Interventions combining behavioural, affective and educational therapies improved other outcomes (reduced hospitalisation and psychopathology, and increased social functioning), as well as improving medication knowledge and insight into treatment.

Interventions that improved adherence tended to be longer than interventions reporting no improvement. The median duration was 8 sessions for successful interventions compared with 3 sessions for unsuccessful interventions. Studies
of successful interventions tended to have larger numbers of participants than unsuccessful interventions. The median sample size was 103 patients for successful interventions compared with 55 for unsuccessful interventions.

Authors' conclusions
The greatest improvements in adherence were found for combinations of educational, behavioural and affective interventions. The authors stated that successful interventions tended to be of longer duration and be conducted in studies with larger sample sizes than unsuccessful interventions.

CRD commentary
The review question was clear in terms of the intervention, participants and outcomes. The inclusion criteria were broadly defined in terms of the study design. Three relevant databases were searched and the search terms were stated. By limiting the included studies to those reported in English, some relevant studies may have been omitted. No attempt was made to locate unpublished studies, thus raising the possibility of publication bias. The methods used to select the studies and extract the data were not described; hence, efforts made to reduce errors and bias cannot be judged. Validity was not formally assessed and was discussed only briefly in the text of the review.

Some relevant information on the included studies was tabulated. A narrative synthesis was appropriate given the differences among the studies. However, it was unclear whether results reported as 'improved' were statistically significant results since the intervention and control groups were not compared using statistical tests. In addition, RCTs, controlled studies and case series were given equal weight in the reporting of the results, and better sources of evidence from higher quality studies were not highlighted. The authors discussed some of the limitations of their review in the text. Conclusions based on indirect comparisons of interventions, as is the case in this review, are suggestive rather than definitive.

Implications of the review for practice and research
Practice: The authors stated that clinicians should regularly monitor the patients' adherence to medication using both the patients' self-report and other subjective and objective measures.

Research: The authors stated that research into effective interventions for improving adherence to antipsychotic therapy is required. They stated that adequately powered RCTs should be conducted in a variety of patient groups and treatment settings, and that multiple measures be used to assess the long-term outcomes.

Funding
National Institute of Mental Health, grant numbers MH49671, MH45131, MH43693 and MH51459; Department of Veterans Affairs.

Bibliographic details

PubMedID
12920416

DOI
10.1097/01.jcp.0000085413.08426.41

Indexing Status
Subject indexing assigned by NLM

MeSH
AccessionNumber
12003001721

Date bibliographic record published
31/12/2004

Date abstract record published
31/12/2004

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.