CRD summary
This review concluded that the findings from one favourable study were not sufficient to justify the allocation of NHS resources on multi-compartment medication compliance devices and further research is required. Although the review had limitations, this conservative conclusion is appropriate given the paucity of evidence available.

Authors' objectives
To determine whether multi-compartment medication compliance devices are effective in promoting adherence among non-adherent adults living at home.

Searching
MEDLINE (1966 to March 2003) and International Pharmaceutical Abstracts (1970 to December 2002) were searched; the search terms were reported. The bibliographies of retrieved articles were screened. Only English language articles were included.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) of both parallel and crossover design were eligible for inclusion. Follow-up had to be a minimum of 3 months, and loss to follow-up had to be less than 20%.

Specific interventions included in the review
Studies comparing multi-compartment devices with standard packaging were eligible for inclusion. Studies that investigated the effectiveness of compliance devices in combination with additional interventions were excluded.

Participants included in the review
Studies of community-based adult populations were eligible for inclusion. The participants had to be receiving at least one medication daily for an ongoing condition, and to have had problems with compliance identified. The included studies recruited patients with either hypertension or type 2 diabetes.

Outcomes assessed in the review
Studies had to report pill counts, biological assays or clinical response to be eligible. The outcomes reported included changes in diastolic blood-pressure (DBP) and glycated haemoglobin (HbA1c).

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

Assessment of study quality
Study quality was assessed in terms of randomisation, blinding, similarity at baseline between the groups, and the reporting of a power calculation. The author did not state how many reviewers performed the quality assessment.

Data extraction
The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction. Data on the mean change in HbA1c and the mean change in DBP were extracted.

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

How were differences between studies investigated?
The two studies were described in detail separately.

Results of the review
Two RCTs were included in the review.

One RCT (n=68) of patients with type 2 diabetes had appropriate methods of randomisation, blinding of the carers, general practitioner and outcome assessors, and groups similar at baseline. There was a significant reduction in HbA1c (intervention: 0.95%, standard deviation (SD) 0.22; control: 0.15%, SD 0.25) and DBP (intervention: -5.8 mmHg, SD 1.5; control: +0.1 mmHg, SD 1.9) in patients using multi-compartment devices at 8 months’ follow-up.

One study (n=165) of patients with hypertension did not describe the methods used, and the treatment group had better blood-pressure than controls at baseline. There was a non significant reduction in mean DBP (intervention: -3.2 mmHg; control: -2.8 mmHg).

Authors’ conclusions
Findings from one favourable study are not sufficient to justify the allocation of NHS resources on multi-compartment medication compliance devices. Further research is required.

CRD commentary
The author addressed a clear research question, with inclusion criteria defined for all areas. A limited search was undertaken and only English language studies were included, therefore there is a potential for publication and language bias. Since the review methodology was not described, it is not clear whether methods were used to reduce error or bias. Describing the studies separately was appropriate given the differing populations. The author’s conclusions are appropriate given the paucity of evidence available.

Implications of the review for practice and research
Practice: The author suggested that there was insufficient evidence to justify the introduction of multi-compartment medication compliance devices.

Research: The author recommended further research to evaluate the effectiveness of multi-compartment medication compliance devices in promoting adherence in non-adherent adults living at home.

Bibliographic details

PubMedID
15284670

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Drug Administration Schedule; Humans; Medication Systems /organization & administration; Patient Compliance; Reminder Systems; Self Administration
AccessionNumber
12005005067

Date bibliographic record published
31/01/2008

Date abstract record published
31/01/2008

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.