Efficacy and safety of traditional medical therapies for chronic constipation: systematic review
Ramkumar D, Rao S S

CRD summary
This review assessed the efficacy and safety of medical therapies in adults with chronic constipation. The authors concluded that there was good evidence for polyethylene glycol, tegaserod, lactulose and psyllium, but few trials assessed other commonly used agents. The limited search and incomplete reporting of the review methods make it difficult to assess the strength of the authors' conclusions.

Authors' objectives
To assess the efficacy and safety of medical therapies in adults with chronic constipation.

Searching
MEDLINE and PubMed were searched from 1966 to 2004 for studies published in English as full manuscripts; the search terms were reported. The bibliographies of identified studies and reviews were screened.

Study selection
Study designs of evaluations included in the review
Parallel group and crossover randomised controlled trials (RCTs) were eligible for inclusion.

Specific interventions included in the review
Studies that compared medical treatments with placebo or other agents were eligible for inclusion. The included studies used polyethylene glycol (PEG), lactulose, irritant and stimulant laxatives, bulk laxatives, cisapride, colchicines, misoprostol, stool softeners and tegaserod. Most of the studies were of short duration (2 weeks or less).

Participants included in the review
Studies of adult patients with chronic constipation were eligible for inclusion. The studies used different definitions for constipation. The included studies were conducted in a variety of participants, including nursing home or long stay geriatric patients, patients on opiates and postpartum patients.

Outcomes assessed in the review
The most commonly used outcomes measures in the included studies were stool frequency and stool consistency. Other outcomes included ease of defecation, use of additional laxatives, stool weight, stool water content and transit times.

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
The studies were assessed and scored using the Jadad scale, which considers the reporting and handling of randomisation, blinding and handling of withdrawals. The maximum possible score was 5 points. Two reviewers independently assessed validity and resolved any disagreements through discussion. The final quality scores were determined by consensus.

Data extraction
The authors stated that the data were extracted into standard forms. It was unclear how many reviewers performed the data extraction. The extracted data included safety data and results expressed as the percentage improvement, or other
measure of change, in individuals and differences between treatment groups.

**Methods of synthesis**

How were the studies combined?

The studies were grouped by medication and graded on their level of evidence, as used by the U.S. Preventive Services Task Force:

- Good evidence (level I) is provided by consistent results from well-designed, well-conducted studies;
- Fair evidence (level II) relates to when there is benefit, but strength is limited by the number, quality or consistency of individual studies;
- Poor evidence (level III) relates to insufficient evidence because of the limited number or power of studies, flaws in design or conduct.

The recommendations were classified as Grade A for good evidence, Grade B for moderate evidence and Grade C for poor evidence.

How were differences between studies investigated?

Study quality was taken into account when assessing the strength of evidence for treatments.

**Results of the review**

There were 8 RCTs (number of patients enrolled, n=777) of PEG, 11 RCTs (n=717) of lactulose, 10 RCTs (n=849) of irritant and stimulant laxatives, 17 RCTs (n=1,217) of bulk laxatives, 3 RCTs (n=293) of cisapride, 1 RCT (n=12) of colchicine, 1 RCT (n=9) of misoprostol, 4 RCTs (n=296) of stool softeners and 1 RCT (n=1,116) of tegaserod. Some studies compared more than two treatments.

Grade A recommendations.

- There was good evidence for the use of PEG (an osmotic laxative) from 5 placebo-controlled RCTs (quality scores ranged from 3 to 5).
- There was good evidence that PEG was superior to lactulose from 2 RCTs (quality scores 4 and 5).
- There was good evidence for the use of tegaserod from 1 large RCT (quality score 5).

Grade B recommendations.

- There was moderate evidence for the use of lactulose (an osmotic laxative) from 3 placebo-controlled RCTs (quality scores 3 or 4).
- There was moderate evidence for the use of psyllium (a bulk laxative) from 3 placebo-controlled RCTs (quality scores 3 or 4).

Grade C recommendations.

- There was limited evidence for other bulk laxatives (calcium polycarbophil, bran and methylcellulose), the wetting agent dioctyl sulfosuccinate, and some stimulant laxatives (senna, bisacodyl and one unnamed irritant laxative).

**Authors' conclusions**

There was good evidence for the use of PEG, tegaserod, lactulose and psyllium, but a lack of trials assessing many other agents in common use.
CRD commentary
The review question was clear in terms of the study design, intervention and participants. Limiting the search to studies published in full in English, listed in one database, might have resulted in the omission of other relevant studies and raises the possibility of publication and language bias. The methods used to select studies and extract the data were not described, so it is not known whether any efforts were made to reduce errors and bias. Methods were used to minimise bias in the assessment of validity. Validity was assessed using established specified criteria, and adequate information was presented on the included studies.

A narrative synthesis, with evidence graded according to the number and quality of studies, was appropriate given the differences among studies. The limited search and lack of reporting of methods used to conduct the review make it difficult to comment on the strength of the evidence underpinning the authors' conclusions.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that there is a need for research comparing new agents with traditional therapies.

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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.