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Interventions for heartburn in pregnancy

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Abstract

Background—Heartburn is a common symptom in pregnancy affecting up to 80% of women in the third trimester. The reasons for the increase in symptoms in pregnancy are not well understood, but the effects of pregnancy hormones on the lower oesophageal sphincter and gastric clearance are thought to play a part. A range of interventions have been used to relieve symptoms including advice on diet and lifestyle, antacids, antihistamines, and proton pump inhibitors. The safety and effectiveness of these interventions to relieve heartburn in pregnancy have not been established.

Objectives—To assess the effect of interventions to relieve heartburn in pregnancy.

Search methods—We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (April 2008). We updated this search on 10 November 2012 and added the results to the awaiting classification section of the review.

Selection criteria—We included randomised controlled trials evaluating interventions to relieve heartburn.

Data collection and analysis—We assessed eligibility for inclusion and extracted data independently.

Main results—Three studies were eligible for inclusion, together they included a total of 286 women. All three were placebo controlled trials, each examining a different medication to relieve heartburn (intramuscular prostigmine, an antacid preparation and an antacid plus ranitidine). All three produced positive findings in favour of the intervention groups. It was not possible to pool findings from studies to produce an overall treatment effect.

Authors' conclusions—There was little information to draw conclusions on the overall effectiveness of interventions to relieve heartburn in pregnancy.

[Note: the two citations in the awaiting classification section of the review may alter the conclusions of the review once assessed.]

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Medical Subject Headings (MeSH)

Heartburn [* therapy]; Pregnancy Complications [* therapy]; Randomized Controlled Trials as Topic

MeSH check words

Female; Humans; Pregnancy

BACKGROUND

Heartburn

Heartburn is a common symptom in pregnancy affecting more than two-thirds of women (Richter 2005). Although serious complications are rare, symptoms may be frequent, severe and distressing.

Diagnosis

Heartburn (gastro-oesophageal reflux disease) is unpleasant. Women experience a burning or painful sensation around the sternum (breastbone) which may extend up into the throat (Marrero 1992). Discomfort arises from a reflux of acidic gastric contents into the oesophagus. Unlike the stomach, the oesophagus has no protective lining to prevent the corrosive effects of gastric acids. Symptoms tend to be worse after eating and when stooping or lying down (Christopher 2005; Hart 1978). Some women may change their eating and sleeping patterns, or resort to self-medication to relieve symptoms (Richter 2005).

Diagnosis is usually made on symptoms alone; women with more severe illness may undergo diagnostic tests such as upper gastro-intestinal endoscopy (Cochrane 1982). Women with pre-pregnancy heartburn are more at risk of developing symptoms. Heartburn does not seem to be related to other common pregnancy symptoms such as nausea and vomiting. The condition usually resolves after delivery (Richter 2005).

Prevalence

Heartburn is so common amongst pregnant women that it has been regarded as a normal part of a healthy pregnancy (Richter 2005). However, women may not regard the problem as minor. Symptoms tend to become both more severe and frequent as pregnancy progresses (Knudsen 1995; Marrero 1992). While a minority of women suffer heartburn in the early stages of pregnancy, in one study more than 80% of women reported symptoms in the third trimester (Weyermann 2003). Heartburn is more likely to occur in older women (it increases with age in the general population) and in women experiencing their second or subsequent pregnancies, independent of age (Knudsen 1995; Marrero 1992). There may be differences in prevalence in different racial groups, although the evidence here is mixed (Audu 2006; Bassey 1977; Marrero 1992). It is not clear whether heartburn relates to obesity, lifestyle or social factors in pregnant women although such factors may exacerbate symptoms in the general population (Nebel 1976).

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Physiology

The reason for the increase in heartburn in pregnancy is complex and is likely to be multi-factorial; the precise causal mechanisms are not proven (Marrero 1992). In the past it was thought that increased risk was primarily due to increased pressure in the abdomen exerted by the expanding uterus. This, in turn, was thought to affect the pressure of the lower oesophageal sphincter causing it to relax, thereby allowing gastric contents to flow back into the oesophagus. The logic of this explanation has been questioned (Van Thiel 1981). Alternatively or additionally, higher abdominal pressure may delay gastric emptying and affect gut motility, and these abnormal functions may increase the likelihood of reflux. Pregnancy hormones are also thought to play a part. High levels of circulating progesterone in the presence of oestrogen may affect the general pressure, or pattern of relaxation, of the lower oesophageal sphincter allowing acid reflux. By acting upon smooth muscle, progesterone may also affect gut motility and delay gastric clearance (Brock-Utne 1982; Feeney 1982; Fisher 1978; Van Thiel 1977).

Aims of treatment

A range of interventions have been used to relieve symptoms. These include advice on diet and lifestyle, and medication. For example, women may be advised to eat smaller meals; to avoid food before bed, and certain types of acidic or spicy food along with tobacco and alcohol; to avoid certain postural changes that may exacerbate symptoms; and to sleep in a more upright position. Such strategies are intended to either reduce acid production, or avoid reflux associated with postural change (Richter 2005).

A range of medications affecting different physiological processes have been used to treat symptoms. These include antacids such as alkali aluminium, magnesium and calcium salts which neutralise stomach acid or protect the lining of the stomach and oesophagus; drugs which act to reduce the secretion of gastric acids including antihistamines such as ranitidine (known as histamine$_2$ receptor antagonists); drugs which inhibit stomach enzymes involved in acid production (proton pump inhibitors such as omeprazole); and drugs to promote gastric emptying and gut motility, or to enhance sphincter pressure (for example, metoclopramide) (Brucker 1988; Christopher 2005; Richter 2005). It has also been proposed that heartburn sometimes results from bile reflux due to the failure of the pyloric sphincter (located between the stomach and duodenum). Hence, treatment with dilute acid to neutralise the effects of bile has been suggested (Atlay 1978; Hart 1978).

Several of the drugs used to treat heartburn in pregnancy have side effects. Antacids may cause constipation, diarrhoea or muscle cramps, and may interfere with the absorption of some foods and supplements.

Serious adverse effects from the use of drugs to treat heartburn are rare, but life-threatening maternal and fetal complications have been recorded particularly where drugs have been used in high doses; these include hypercalcaemia and metabolic alkalosis (Brucker 1988; Gordon 2005; Richter 2005). Some drugs are not recommended for use in pregnancy; sodium bicarbonate, for example, can cause fluid overload (Richter 2005). Further, the data establishing the safety in pregnancy of many of the drugs used to treat heartburn are limited

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and have mainly been derived from case reports and observational studies. Where drugs have been investigated, results suggest that they are not associated with serious risk to the mother or fetus (Diav-Citrin 2005: Garbis 2005; Kallen 2001; Nikfar 2002; Ruigomez 1999). Nevertheless, there remain concerns about the use of antacids and other heartburn treatments in early pregnancy (Nelson 1971; Nielsen 1999). Given such doubts, a conservative approach to treatment throughout pregnancy is generally recommended (Baron 1992; Bracken 1990). Richter 2005 recommends a step-up approach to therapy, with advice on lifestyle modification being the first level of treatment, with antacids and other drugs only being introduced to treat more intractable symptoms, and with proton pump inhibitors being reserved for those women with the most severe disease.

While several review articles discuss the clinical management of heartburn in pregnancy, there seems to be little information about what actually happens in everyday practice. The proportions of women with heartburn seeking formal help and receiving different forms of intervention are likely to vary considerably across settings.

Rationale for a review

While heartburn rarely leads to serious consequences for the mother or developing baby, symptoms are very common and the condition has health service implications. There are a broad range of possible interventions, and the aim of the review is to systematically examine and evaluate evidence on their effectiveness. The lack of research evidence on safety means that it is particularly important to establish the effectiveness of treatments in order to avoid exposing pregnant women to unknown risks unless this is outweighed by clear benefits from treatment. It was anticipated that the review might add to the body of evidence on the safety of some of the medications used to treat heartburn in pregnancy.

OBJECTIVES

To assess the effect of interventions to relieve heartburn in pregnancy.

METHODS

Criteria for considering studies for this review

Types of studies—Randomised controlled trials, cluster-randomised trials and quasi-randomised trials evaluating interventions to relieve heartburn. Cross-over trials were to be included provided data were available for the first stage of such studies.

Types of participants—Pregnant women.

Types of interventions—Studies examining interventions to relieve heartburn including advice and medication. We would include studies examining single interventions, multiple interventions, or comparing different interventions.

Types of outcome measures

Primary outcomes

(1) Relief from heartburn (pain/discomfort)

Secondary outcomes

(2) Serious adverse effects (maternal and fetal)

(3) Insomnia

(4) Diarrhoea

(5) Constipation

(6) Muscle cramps

(7) Maternal satisfaction

(8) Psychological distress

(9) Compromised social function

(10) Health service use

(11) Compromised nutrition

(12) Level of self medication

Search methods for identification of studies

Electronic searches—We searched the Cochrane Pregnancy and Childbirth Group's Trials Register by contacting the Trials Search Co-ordinator (April 2008). We updated this search on 10 November 2012 and added the results to Studies awaiting classification.

The Cochrane Pregnancy and Childbirth Group's Trials Register is maintained by the Trials Search Co-ordinator and contains trials identified from:

1. monthly searches of the Cochrane Central Register of Controlled Trials (CENTRAL);
2. weekly searches of MEDLINE;
3. weekly searches of EMBASE;
4. handsearches of 30 journals and the proceedings of major conferences;
5. weekly current awareness alerts for a further 44 journals plus monthly BioMed Central email alerts.

Details of the search strategies for CENTRAL, MEDLINE and EMBASE, the list of handsearched journals and conference proceedings, and the list of journals reviewed via the current awareness service can be found in the 'Specialized Register' section within the editorial information about the Cochrane Pregnancy and Childbirth Group.

Trials identified through the searching activities described above are each assigned to a review topic (or topics). The Trials Search Co-ordinator searches the register for each review using the topic list rather than keywords.

We did not apply any language restrictions.

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Data collection and analysis

Selection of studies—We assessed for inclusion all of the studies identified by the search strategy above. Both review authors independently examined the abstracts of all studies identified to ascertain which met the inclusion criteria. For those studies where there was any uncertainty about eligibility, we examined the full study report. We resolved any disagreements regarding eligibility for inclusion by discussion. We have recorded reasons for excluding studies (*see* 'Characteristics of excluded studies' table).

Data extraction and management—Both authors were involved in the design of the data extraction form. We piloted and revised the form before use. Both authors extracted data from the study reports independently. We resolved any disagreement between authors by discussion. After checking, we entered data into Review Manager software (RevMan 2008) and re-checked them.

When information regarding any of the above was unclear, we attempted to contact authors of the original reports to provide further details. We received helpful additional information from the author of one of the trials (Rayburn 1999).

Assessment of methodological quality of included studies—We assessed the methodological quality of each study using the criteria outlined in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2008). Methods used for generation of the randomisation sequence have been described for each included trial.

(1) Selection bias (allocation concealment): We assessed the quality of each trial using the following criteria:

- adequate concealment of allocation: such as telephone randomisation, consecutively numbered sealed opaque envelopes;
- unclear whether adequate concealment of allocation: such as list or table used, sealed envelopes, or study does not report any concealment approach;
- inadequate concealment of allocation: such as open list of random-number tables, use of case record numbers, dates of birth or days of the week.

(2) Attrition bias (loss of participants, e.g. withdrawals, dropouts, protocol deviations): We assessed completeness to follow up recording reasons for dropouts, exclusions or other loss to follow up.

Where loss to follow was greater than 20%, we noted any reasons for attrition recorded by the study authors. Where, in the judgement of review authors, attrition levels seriously compromised the interpretation of results, studies were excluded.

(3) Performance bias (blinding of participants, researchers and outcome assessment): We assessed blinding using the following criteria:

- blinding of participants (yes/no/unclear);
- blinding of caregiver (yes/no/unclear);

- blinding of outcome assessment (yes/no/unclear).

Measures of treatment effect—We carried out statistical analysis using the Review Manager software (RevMan 2008). In the case of interventions for heartburn there are a broad range of possible interventions and it was necessary to analyse and present results separately for different types of treatment. We had intended that where there was a number of trials comparing the same type of intervention, we would use fixed-effect meta-analysis for combining data in the absence of significant heterogeneity. In the event, the trials identified for inclusion were not sufficiently similar to allow us to perform any meta-analyses.

Dichotomous data: For this review the primary outcome is the presence or absence of heartburn. For such dichotomous data, we presented results as summary risk ratio with 95% confidence intervals.

Continuous data: For continuous data, we used the mean difference to compare findings in the intervention and comparison groups. Again, we were not able to pool results from a number of trials as none of the included studies examined the same intervention.

Unit of analysis issues

Cluster-randomised trials: We did not identify any cluster-randomised trials relating to this topic. In the event of any such trials being identified in updated versions of this review, we will use the analysis methods described by Gates 2005.

Cross-over trials: Cross-over trials were examined for eligibility. We had decided that if such studies were to be included in the review, we would use data only from the first stage of trials (Elbourne 2002). We were concerned that the possible impact of treatment order effects, carry-over effects and other biases associated with this type of study design would make results difficult to interpret.

A number of cross-over trials were identified by the search strategy but it was not possible to use data from any of them, as results from the first stage were not reported separately. These studies were all conducted more than ten years ago, so we did not think it was feasible to obtain the relevant study data from authors. Several trials were excluded for this reason.

Available case analysis—We intended to analyse data on all participants with available data in the group to which they were randomised, regardless of whether or not they received the allocated intervention. If in the original trial reports it was not clear that authors had carried out an intention-to-treat analysis, this has been indicated.

Assessment of heterogeneity—It was not possible to combine the results of trials in this review.

Subgroup analysis and investigation of heterogeneity—We had planned to conduct subgroup analyses classifying whole trials by interaction tests as described by Deeks 2001.

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For the primary outcome, we had planned to carry out the following subgroup analyses.

- Maternal age (where possible as a dichotomous variable; women under 30 or 30 or over)
- Parity (nulliparous versus multiparous)
- Singleton versus twin pregnancy

However, the included studies did not present data in a way that allowed such analyses.

Sensitivity analysis—We did not combine results from trials in this review.

RESULTS

Description of studies

See: Characteristics of included studies; Characteristics of excluded studies; Characteristics of studies awaiting classification.

Fifteen studies were identified by the search strategy. Of these, only three were eligible for inclusion (Bower 1961; Rayburn 1999; Reisfield 1971), and one study is awaiting assessment (Marks 1997). Studies were excluded for a number of reasons. One study (Hey 1978) did not focus on study outcomes; four studies used cross-over designs but did not report findings for the first stage of the trial (Atlay 1978; Briggs 1972; Carne 1964; Larson 1997); the remaining studies were excluded because they had high attrition rates or did not present usable data on review outcomes. In the study by Lang 1989 attrition rates at two weeks' follow up were 38%; for the Shaw 1978 study attrition rates were 24%, with greater loss to follow up in the control group; and in the Brunclik 1988 study 20% of women were excluded after randomisation, the reason for half of the exclusions was that women were not fully compliant with the study protocol. (One report from an updated search on 10 November 2012 has been added to Studies awaiting classification.)

Risk of bias in included studies

The three included studies were placebo controlled trials with blinding of participants and clinical staff. None of the studies provided information on how the randomisation sequence was generated. The sample sizes in the three studies were small, ranging from 30 to 156. One of the studies was carried out almost 50 years ago (Bower 1961) and examined a treatment rarely used nowadays.

Effects of interventions

The three studies together included a total of 286 women. All three studies found a positive effect associated with interventions. In a study comparing women receiving intramuscular (IM) prostigmine versus an IM placebo more women had symptoms alleviated by the intervention (risk ratio (RR) 0.40, 95% confidence interval (CI) 0.23 to 0.69) (Bower 1961). Results from a trial examining the effect of a calcium based antacid plus ranitidine versus antacid alone also produced positive results in favour of the intervention group, although results did not reach statistical significance. Thus, heartburn intensity scores were lower in

the ranitidine group (mean difference (MD) at one week −0.31, 95% CI −1.89 to 1.27; MD at two weeks −2.13, 95% CI −4.37 to 0.11) (Rayburn 1999). A study examining the effectiveness of a magnesium and aluminium based antacid with simethicone also reported positive findings, with women in the intervention group being more likely to report relief from symptoms (RR 1.41, 95% CI 1.18 to 1.68) (Reisfield 1971).

There was very little information on other review outcomes, or on any adverse effects associated with these heartburn relief preparations. The trial examining the use of ranitidine with an antacid reported that there were no side effects associated with the intervention and that birth outcomes were ‘favourable’ (Rayburn 1999). The Reisfield 1971 study described side effects in both the intervention and the comparison/placebo group (seven of the twelve women with side effects including constipation, headache, cramps and dry mouth were receiving the placebo preparation).

The three included studies focused on different interventions, so it was not possible to pool the results from trials. One of the studies focused on the use of IM prostigmine, and we are not aware that this intervention is currently used in the treatment of pregnancy heartburn (Bower 1961). In view of the very limited information available, it is not possible to draw conclusions on the overall effectiveness of interventions to treat heartburn in pregnancy.

DISCUSSION

Given the large number of women affected by heartburn in pregnancy, it is of concern that there is so little information available to guide practice. While there are several review papers outlining therapy options, the approaches suggested are based on only limited evidence from randomised trials and, consequently, caution is advised (Christopher 2005; Richter 2005). The causes of heartburn in pregnancy are not well understood, and while there is considerable evidence that commonly used drugs for heartburn (including antacids and H_2 receptor antagonists) are effective and safe in the treatment of heartburn in the general population, it cannot be assumed that these drugs are safe in pregnancy. Animal studies and observational and cohort studies have suggested that most drugs are not associated with serious risk; however, many heartburn preparations are not approved by the United States Food and Drug Administration (FDA) for use in pregnancy and, under these circumstances, it is unlikely that large randomised trials will be conducted. Richter 2005 has suggested that ‘lifestyle modification is the key for treating mild symptoms’ and trials of advice on lifestyle modification is a possible a way forward for research in this area.

AUTHORS’ CONCLUSIONS

Implications for practice

There is not enough information on interventions to relieve heartburn in pregnancy to draw any conclusions on their effectiveness or safety.

Implications for research

There is a need for further research in this area. This is particularly urgent given the large numbers of pregnant women suffering heartburn symptoms, and in view of the fact that

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many of the drugs available to treat heartburn are available across the counter without prescription. Changes in diet and life-style may alleviate symptoms in those women suffering from milder symptoms. We did not find any studies examining such approaches and this may be a useful area for future research.

[Note: the two citations in Studies awaiting classification may alter the conclusions of the review once assessed.]

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Thanks to Lynn Hampson for her help identifying studies for inclusion in the review, Sonja Henderson and Denise Atherton for their assistance in preparing the review for publication, and to the editor and other referees for their helpful feedback on drafts.

As part of the pre-publication editorial process, this review has been commented on by two peers (an editor and referee who is external to the editorial team), a member of the Pregnancy and Childbirth Group's international panel of consumers and the Group's Statistical Adviser.

SOURCES OF SUPPORT

Internal sources

- The University of Liverpool, UK.

External sources

- National Institute for Health Research, UK.

NIHR NHS Cochrane Collaboration Programme Grant Scheme award for NHS-prioritised centrally-managed, pregnancy and childbirth systematic reviews: CPGS02

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Bower 1961

Methods	RCT - methods not described.	
Participants	100 women attending a hospital antenatal clinic with heartburn that was not relieved by antacids	
Interventions	Intervention group: intramuscular prostigmine. Comparison group: intramuscular water.	
Outcomes	Heartburn relief.	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Unclear risk	No information provided.
Allocation concealment (selection bias)	Unclear risk	Not stated.
Blinding (performance bias and detection bias) Women	Low risk	Placebo controlled study.

Blinding (performance bias and detection bias) Clinical staff	Low risk	Placebo controlled study.
Blinding (performance bias and detection bias) Outcome assessors	Unclear risk	Not stated.
Incomplete outcome data (attrition bias) All outcomes	Low risk	No loss to follow up.

Rayburn 1999

Methods	RCT. No information on how randomisation was carried out.
Participants	30 pregnant women with 4 or more moderate to severe episodes of heartburn per week
Interventions	Intervention group: calcium carbonate antacids and H2receptor antagonist (Ranitidine) Control group: calcium carbonate antacid and placebo.
Outcomes	Heartburn intensity.
Notes	Relatively large numbers of eligible women withdrew (already had relief with antacids alone) before randomisation
Risk of bias	

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Unclear risk	No information provided.
Allocation concealment (selection bias)	Unclear risk	No information provided.
Blinding (performance bias and detection bias) Women	Low risk	Placebo controlled study.
Blinding (performance bias and detection bias) Clinical staff	Low risk	Placebo controlled study.
Blinding (performance bias and detection bias) Outcome assessors	Unclear risk	Not stated.
Incomplete outcome data (attrition bias) All outcomes	Low risk	Data available for all women randomised.

Reisfield 1971

Methods	RCT. Not clear how randomisation was carried out.
Participants	156 pregnant women attending hospital clinic complaining of heartburn
Interventions	Intervention group - magnesium and aluminium hydroxide and simethicone (tablets and liquid preparation) (MYLANTA) Comparison group - placebo tablet and liquid preparations of an identical appearance
Outcomes	Heartburn relief.
Notes	
Risk of bias	

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Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	No information provided, described as predetermined random basis
Allocation concealment (selection bias)	Low risk	Not stated.
Blinding (performance bias and detection bias) Women	Low risk	Placebo controlled study.
Blinding (performance bias and detection bias) Clinical staff	Low risk	Placebo controlled study.
Blinding (performance bias and detection bias) Outcome assessors	Unclear risk	Not stated.
Incomplete outcome data (attrition bias) All outcomes	Low risk	Data available for most participants.

RCT: randomised controlled trial

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Atlay 1978	Cross-over design. No data reported for the first stage of the study
Briggs 1972	Cross-over design. No usable data.
Brunclik 1988	High post-randomisation exclusion rates (20%). Half of the exclusions were for reasons of non-compliance
Carne 1964	Cross-over design. No data reported for the first stage of the study
Hey 1978	Study focusing on gastric sphincter pressure. No data reported for review outcomes
Kovacs 1990	No usable data on review outcomes.
Lang 1989	High post-randomisation attrition rates (38% lost to follow up by 2 weeks)
Larson 1997	Cross-over design. No data for the first stage of the study.
Ranchet 1990	Not clear whether this was a RCT. No information on how randomisation was achieved and intervention and control group sizes were very different
Shaw 1978	High attrition rates (24%). Symptoms were only assessed up to 60 minutes after treatment

RCT: randomised controlled trial

Characteristics of studies awaiting assessment *[ordered by study ID]*

Da Silva 2009

Methods
Participants
Interventions
Outcomes
Notes

Marks 1997

Methods	Described as randomised clinical trial.
Participants	Women with heartburn.
Interventions	Chewing gum to relieve heartburn symptoms.
Outcomes	Heartburn intensity.
Notes	Abstract only, author contacted for more information.

DATA AND ANALYSES

Comparison 1

Heartburn relief

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Heartburn relief: Prostigmine versus placebo	1	100	Risk Ratio (M-H, Fixed, 95% CI)	0.4 [0.23, 0.69]
2 Heartburn relief: Mylanta (antacid - magnesium and aluminium hydroxide and simethicone) versus placebo preparation	1	156	Risk Ratio (M-H, Fixed, 95% CI)	1.41 [1.18, 1.68]
3 Pain intensity after one week: Antacid plus ranitidine versus antacid alone	1	30	Mean Difference (IV, Fixed, 95% CI)	−0.31 [−1.89, 1.27]
4 Pain intensity after two weeks: Antacid plus ranitidine versus antacid alone	1	30	Mean Difference (IV, Fixed, 95% CI)	−2.13 [−4.37, 0.11]

WHAT'S NEW

Last assessed as up-to-date: 30 April 2008.

Date	Event	Description
10 November 2012	Amended	Search updated. One new report added to Studies awaiting classification (Da Silva 2009). Information about the updating of this review added to Published notes.

References to studies included in this review

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NOTES: The update for this review will be prepared by a new review team following a new protocol.

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PLAIN LANGUAGE SUMMARY

Interventions for heartburn in pregnancy

Heartburn affects more than two-thirds of women in late pregnancy. Usually it is not serious, but symptoms can be very distressing to pregnant women. There are many different interventions to relieve heartburn including advice on diet and lifestyle and a range of medicines (many of which are available over the counter without prescription). The review authors identified three randomised controlled trials including a total of 286 women focusing on three different heartburn medications. While the results of the individual trials were positive (women described some relief from symptoms), overall it was concluded that there is little information on the safety or effectiveness of drugs used to treat heartburn in pregnancy. More information is needed on this common and distressing condition.