



Centre for Clinical Effectiveness

Enhancing patient outcomes through clinical application of the best available evidence

EVIDENCE CENTRE
CRITICAL APPRAISAL
Series 2002: Therapy

Lavender oil for perineal healing following childbirth

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SUMMARY STATEMENT

Disclaimer - please refer to Appendix 1 for information.

Copyright – please refer to Appendix 1 for information.

Publication of materials – please use the following format when citing this article:

Bernath, V. (2002). Lavender oil for perineal healing following childbirth. [Online].
Available from <http://www.med.monash.edu.au/healthservices/cce>

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REQUEST

Is lavender oil effective in promoting perineal healing in women following childbirth?

REQUESTED BY

Fiona Brown, MAS, Birth Centre, Women's and Children's Health, Monash Medical Centre, Moorabbin.

METHODOLOGY

Search Strategy

The Centre for Clinical Effectiveness defines the 'best available evidence' as that research we can identify that is least susceptible to bias. We determine this according to pre-defined National Health and Medical Research Council (NHMRC, 2000) criteria (see Appendix 1).

First, we search for systematic reviews, evidence based clinical practice guidelines, health technology assessments and randomised controlled trials. If we identify sound, relevant material of this type, the search stops. Otherwise, our search strategy broadens to include studies that are more prone to bias, less generalisable or have other methodological difficulties. We include case-control and longitudinal cohort studies in our critical appraisal reports. While we cite observational and case series studies, and narrative reviews and consensus statements, in our reports we do not critically appraise them. Such studies can produce accurate results but they are generally too prone to bias to allow determination of their validity beyond their immediate setting.

Details of Evidence Request

Patients (Subjects): Women following childbirth

Intervention: Use of lavender oil

Comparisons: No use of lavender oil, use of other oils

Outcomes: Rate of perineal healing, level of perineal discomfort, incidence of perineal infections

Search terms

(see Appendix 2 for exact search strategy)

Patient (Subject): perineum, perineal, episiotomy, childbirth, child birth, birth

Intervention: lavender, lavendula, lavandula

Resources Searched

We searched the following databases:

Australasian Medical Index (INFORMIT)- December 2001

Biological Abstracts (OVID)- 1980 to December 2001

CINAHL (OVID)- 1982 to December Week 2 2000

Cochrane Controlled Trials Register (CCTR, OVID)- 4th Quarter 2001

Cochrane Database of Systematic Reviews (OVID)- 4th Quarter 2001

Current Contents (OVID)- 1993 Week 26 to 2002 Week 04

Database of Abstracts of Reviews of Effectiveness (OVID)- 4th Quarter 2001

Medline (OVID)- 1966 to January Week 1 2002

PREMEDLINE (OVID)- January 21, 2002

Refinements, Searching & Reporting Constraints

Our search was performed on 22 January 2002.

RESULTS

From our sources we identified 2 potentially relevant articles.

After examination of the two records, one was excluded as follows:

| Reason for exclusion | Number |
|---------------------------------------|---------------|
| Summary of previously published trial | 1 |
| Total | 1 |

1 article then remained for appraisal. This study is classified as follows:

| Study Design | Number included |
|------------------------------------|------------------------|
| Randomised controlled trial | 1 |
| Total | 1 |

Based on our refinements, searching and reporting constraints we are reasonably confident that this article represents the most relevant findings published to date.

The randomised controlled trial studied the use of lavender oil compared with synthetic lavender oil and with an inert compound, all used daily in the bath for 10 days. Visual analogue scales were used to measure the degree of perineal discomfort. No significant difference was found between mean discomfort scores of the three groups over the 10-day period. However due to several potential sources of bias in the methodology of the trial, it is difficult to interpret the results reliably.

EVIDENCE SUMMARIES

Format

Evidence summaries are presented as spreadsheets attached to this report. Each spreadsheet contains the article citation, details of the study design, patient description, scientific validity of the article, results, and pertinent remarks from the authors and Centre for Clinical Effectiveness reviewer.

REFERENCES

ARTICLE CRITICALLY APPRAISED FOR THIS REPORT

Dale A & Cornwell S (1994). The role of lavender oil in relieving perineal discomfort following childbirth: a blind randomized clinical trial. *Journal of Advanced Nursing* 19: 89-96.

ARTICLE NOT CRITICALLY APPRAISED

Summary of previously published trial

Cornwell S & Dale A (1995). Lavender oil and perineal repair. *Modern Midwife* 5: 31-33.

APPENDIX 1

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Levels Of Evidence

Based on "How to use the evidence: assessment and application of scientific evidence" (National Health & Medical Research Council, Canberra, 2000):

Level I Evidence obtained from a systematic review (or meta-analysis) of all relevant randomised controlled trials.

Level II Evidence obtained from at least one randomised controlled trial.

- Level III
- 1 Evidence obtained from pseudorandomised controlled trials (alternate allocation or some other method).
 - 2 Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case control studies or interrupted time series with a control group.
 - 3 Evidence obtained from comparative studies with historical control, two or more single-arm studies or interrupted time series without a parallel control group.

Level IV Evidence obtained from case series, either post-test or pretest/post-test.

APPENDIX 2

Search strategy

| | Search terms for Biological Abstracts, CINAHL, Cochrane Database, CCTR, Current Contents, DARE, MEDLINE, PREMEDLINE |
|----|--|
| 1 | lavender.mp |
| 2 | lavendula.mp |
| 3 | lavandula.mp |
| 4 | or/1-3 |
| 5 | perine\$.mp |
| 6 | childbirth.mp |
| 7 | child birth.mp |
| 8 | birth.mp |
| 9 | or/6-8 |
| 10 | episiotomy.mp |
| 11 | 4 and 5 |
| 12 | 4 and 9 |
| 13 | 4 and 10 |
| 14 | 11 or 12 or 13 |

| | |
|--|---|
| <p style="text-align: center;">Evidence Summary Therapy/Intervention</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Lavender oil for perineal healing following childbirth</p> </div> | <p style="text-align: center;">Study 1</p> <p>Dale A & Cornwell S (1994). The role of lavender oil in relieving perineal discomfort following childbirth: a blind randomized clinical trial. <i>Journal of Advanced Nursing</i> 19: 89-96.</p> |
| <p>STUDY DESIGN & NHMRC LEVELS OF EVIDENCE</p> | <p>Level II – Randomised controlled trial</p> |
| <p>DESCRIPTION: Patients (subjects), Intervention, Comparisons, Outcomes, Inclusion & Exclusion Criteria</p> | <p>Patients (subjects): Women giving birth at a particular hospital in England. Total numbers are unclear as the numbers reported for returned data are sometimes less than total numbers reported for individual outcome variables.</p> <p>Intervention: 6 drops of extract of lavender oil in bath daily to postnatal day 10.</p> <p>Comparisons: 6 drops of synthetic laboratory-produced oil for same period as intervention, or 6 drops of a “generally regarded as safe compound” (GRAS) for the same period as intervention.</p> <p>Outcomes: Daily visual analogue scale (VAS) score for perineal discomfort.</p> <p>Incl & Excl Criteria: Women entered during trial period if they gave birth vaginally. Excluded if: delivery by Caesarian section, with active skin disorders such as eczema or psoriasis, having stillbirths or neonates who were critically ill, without bathing facilities at home, not wishing to participate.</p> |
| <p>VALIDITY: Methodology, rigour, selection</p> | <p>Randomisation: Random allocation, method not stated.</p> <p>Blinding: Staff and mothers were blinded to the specific intervention but the GRAS control could be identified by smell.</p> <p>All patients accounted for: Unclear, as dropouts from initial randomisation were replaced to maintain size of groups.</p> <p>Patients treated equally: No control for this, as the trial period included postdischarge days at home.</p> <p>Similar groups: Similar for initial variables reported: parity, instruments used in birth, episiotomy, use of sutures.</p> |
| <p>RESULTS: Generally favourable or unfavourable, specific outcomes of interest, estimate of experimental effect and precision if appropriate</p> | <p>No statistically significant difference was found between mean discomfort scores of the three groups over the 10-day period. Analysis of the size of the effect of the intervention over time for the lavender oil and GRAS groups also indicated no difference between the groups. Examination of measures for individuals within groups, rather than groups as a whole, although not possible for all participants due to missing data or no discomfort on first day of measurement, also revealed no difference between groups.</p> |
| <p>AUTHOR(S) CONCLUSIONS: Limitations, implications for practice and research</p> | <p>“The study provides no evidence to support the practice as it stands. However, comments collected show that most mothers using the oil found it a pleasant experience.” Further research on varying the amount of oil used an additive and/or the mode of application is recommended.</p> |
| <p>OUR COMMENTS: Opportunity for bias, weakness and strength</p> | <p>Potential for bias: The high rate of non-returned data and the replacement of women not returning data with new recruits without analysing the earlier entrants on an intention-to-treat basis, the difference in the number of women for whom initial and outcome data is available, the possible baseline differences in the women enrolled (eg, health status,) the possible difference in treatment of the women (eg use of analgesics, diet, rest, amount of bath water, length of bath time,) and the higher rate of non-compliance in the GRAS group, the distinguishable and less-pleasant smell of GRAS compared with lavender oil all provide concern about potential for bias.</p> <p>Weakness/es: Due to the potential for bias noted, it is difficult to interpret the results accurately.</p> |

EXPLANATION OF TERMINOLOGY USED IN SPREADSHEET

Level of evidence: A hierarchy of study evidence that indicates the degree to which bias has been eliminated in the study design.

Intervention: A therapeutic procedure such as treatment with a pharmaceutical agent, surgery, a dietary supplement, a dietary change or psychotherapy.

Randomisation: A process of allocating participants to treatment or control group within a controlled trial by using a random mechanism, such as coin toss, random number table or computer-generated random numbers. Study subjects have an equal chance of being allocated to an intervention or control group; thus, the two groups are comparable. Randomisation ensures that the results are not biased by the selection of particular types of patients to receive a specific therapy.

Blinding: Blinding or masking is a process used in epidemiological studies and clinical trials in which the observers and the subjects have no knowledge as to which treatment groups subjects are assigned. It is undertaken in order to minimise bias occurring in patient response and outcome measurement.

All patients accounted for: Once patients are randomly allocated to a specific group and withdraw before study conclusion, they have to be accounted for in order to ensure that patients withdrawing from the study are not significantly different from those continuing in the study. The final analysis should be conducted on an intention-to-treat basis, which includes the results of withdrawn patients in the analysis.

Patients treated equally: To be able to attribute any difference in the observed outcome to the intervention, study patients need to be treated equally in every way except for the intervention being evaluated.

Similar groups: Baseline characteristics of patients that are also likely to affect results should be evenly distributed between the intervention and control groups. Following proper randomisation, patients' attributes would be expected to be equally distributed between groups.

Validity:

Of measurement: an expression of the degree to which a measurement measures what it purports to measure; it includes construct and content validity.

Of study: the degree to which the inferences drawn from the study are warranted when account is taken of the study methods, the representativeness of the study sample, and the nature of the population from which it is drawn (internal and external validity, applicability, generalisability).

Potential for bias: Bias is a systematic deviation of a measurement from the 'true' value leading to either an over (or under) estimation of the treatment effect. Bias can originate from many different sources (including allocation of patients, measurement, interpretation, publication and review of data).