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Best Evidence from the Cochrane Library

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Honey for Acute Cough in Children

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Background: Cough causes concern for parents and is a major cause of outpatient visits. It can impact on quality of life, cause anxiety and affect sleep in parents and children. Several remedies, including honey, have been used to alleviate cough symptoms.

Objective: To evaluate the effectiveness of honey for acute cough in children in ambulatory settings.

Result: We included two RCTs of high risk of bias involving 265 children. The studies compared the effect of honey with dextromethorphan, diphenhydramine and 'no treatment' on symptomatic relief of cough using the 7-point Likert scale.

Honey was better than 'no treatment' in reducing frequency of cough (mean difference (MD) -1.07; 95% confidence interval (CI) -1.53 to -0.60; two studies; 154 participants). Moderate quality evidence suggests honey did not differ significantly from dextromethorphan in reducing cough frequency (MD -0.07; 95% CI -1.07 to 0.94; two studies; 149 participants). Low quality evidence suggests honey may be slightly better than diphenhydramine in reducing cough frequency (MD -0.57; 95% CI -0.90 to -0.24; one study; 80 participants).

Adverse events included mild reactions (nervousness, insomnia and hyperactivity) experienced by seven children (9.3%) from the honey group and two (2.7%) from the dextromethorphan group; the difference was not significant (risk ratio (RR) 2.94; 95% Cl 0.74 to 11.71; two studies; 149 participants). Three children (7.5%) in the diphenhydramine group experienced somnolence (RR 0.14; 95% Cl 0.01 to 2.68; one study; 80 participants) but there was no significant difference between honey versus dextromethorphan or honey versus diphenhydramine. No adverse event was reported in the 'no treatment' group.

Conclusion: Honey may be better than 'no treatment' and diphenhydramine in the symptomatic relief of cough but not better than dextromethorphan. There is no strong evidence for or against the use of honey.

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Household Interventions for Preventing Domestic Lead Exposure in Children

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Background: Lead poisoning is associated with physical, cognitive and neurobehavioral impairment in children and trials have tested many household interventions to prevent lead exposure. This is an update of the original review by the same authors first published in 2008.

Objective: To determine the effectiveness of household interventions in preventing or reducing lead exposure in children as measured by reductions in blood lead levels and/or improvements in cognitive development.

Result: We included 14 studies (involving 2656 children). All studies reported blood lead level outcomes and none reported on cognitive or neurobehavioral outcomes. We put studies into subgroups according to their intervention type. We performed meta-analysis of both continuous and dichotomous data for subgroups where appropriate. Educational interventions were not effective in reducing blood lead levels (continuous: mean difference (MD) 0.02, 95% confidence interval (CI) -0.09 to 0.12, $I^2 = 0$ (log transformed); dichotomous ≥ 10μg/dL (≥ 0.48 μmol/L): relative risk (RR) 1.02, 95% CI 0.79 to 1.30, $I^2=0$; dichotomous ≥ 15μg/dL (≥ 0.72 μmol/L): RR 0.60, 95% CI 0.33 to 1.09, $I^2= 0$). Meta-analysis for the dust control subgroup also found no evidence of effectiveness (continuous: MD -0.15, 95% CI -0.42 to 0.11, $I^2 = 0.9$ (log transformed); dichotomous ≥ 10μg/dL (≥ 0.48 μmol/L): RR 0.93, 95% CI 0.73 to 1.18, $I^2 =0$; dichotomous ≥ 15μg/dL (≥ 0.72 μmol/L): RR 0.86, 95% CI 0.35 to 2.07, $I^2 = 0.56$). When meta-analysis for the dust control subgroup was adjusted for clustering, no statistical significant benefit was incurred. The studies using soil abatement (removal and replacement) and combination intervention groups were not able to be meta-analyzed due to substantial differences between studies.

Conclusion: Based on current knowledge, household educational or dust control interventions are ineffective in reducing blood lead levels in children as a population health measure. There is currently insufficient evidence to draw conclusions about the effectiveness of soil abatement or combination interventions.

Further trials are required to establish the most effective intervention for prevention of lead exposure. Key elements of these trials should include strategies to reduce multiple sources of lead exposure simultaneously using empirical dust clearance levels. It is also necessary for trials to be carried out in developing countries and in differing socioeconomic groups in developed countries.

Hyperbaric Oxygen Therapy for Bell's Palsy

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Background: Bell's palsy is an idiopathic, acute unilateral facial weakness that evolves rapidly and is maximal within two days. Moderate ear discomfort, sensitivity to sound and reduced tearing may occur.

Objective: To assess the effects of hyperbaric oxygen therapy on recovery of facial function in adults with moderate to severe Bell's palsy.

Result: Our searches found no randomized controlled trials or quasi-randomized controlled trials that met the eligibility criteria for this review.

There is very low quality evidence from one randomized trial involving 79 participants with acute Bell's palsy, but this study was excluded as the outcome assessor was not blinded to treatment allocation and thus did not meet pre-defined eligibility criteria. The trial compared 42 people who received hyperbaric oxygen therapy (2.8 atmospheres for 60 minutes twice daily, five days per week until the facial palsy resolved; maximum 30 'dives') and placebo tablets with 37 people who received placebo hyperbaric oxygen therapy (achieving only a normal partial pressure of oxygen) and prednisone (40 mg twice daily, reducing over eight days). Facial function recovered in more participants treated with hyperbaric oxygen therapy than with prednisone (hyperbaric oxygen therapy, 40/42 (95%); prednisone, 28/37 (76%); risk ratio 1.26, 95% CI 1.04 to 1.53). There were no reported major complications and all participants completed the trial.

Conclusion: Very low quality evidence from one trial suggests that hyperbaric oxygen therapy may be an effective treatment for moderate to severe Bell's palsy, but this study was excluded as the outcome assessor was not blinded to treatment allocation. Further randomized controlled trials are needed.

Antibiotics for Gonorrhea in Pregnancy

Peter Brocklehurst

Background: Neisseria gonorrhoeae can be transmitted from the mother's genital tract to the newborn during birth and can cause gonococcal ophthalmia neonatorum as well as systemic neonatal infection. It can also cause endometritis and pelvic sepsis in the mother.

Objective: The objective of this review was to assess the effects of antibiotic regimens in the treatment of genital infection with gonorrhoea during pregnancy with respect to neonatal and maternal morbidity.

Result: Two trials involving 346 women were included. The only outcome included in these trials was the incidence of 'cure' assessed by bacterial culture. Failure to achieve 'microbiological cure'

was similar for each antibiotic regimen: amoxicillin plus probenecid compared with spectinomycin (Peto odds ratio (Peto OR) 2.29, 95% confidence interval (CI) 0.74 to 7.08), amoxicillin plus probenecid compared with ceftriaxone (Peto OR 2.29, 95% CI 0.74 to 7.08) and ceftriaxone compared with cefixime (Peto OR 1.22, 95% CI 0.16 to 9.01). Side effects were uncommon for all the tested regimens.

Conclusion: The number of women included in each of the comparisons is small and therefore, although no differences were detected between the different antibiotic regimens, the trials were limited in their ability to detect important but modest differences. For women who are allergic to penicillin, this review provides some reassurance that treatment with ceftriaxone or spectinomycin appears to have similar effectiveness in producing microbiological cure.

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

Mechanical Methods for Induction of Labor

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Background: Mechanical methods were the first methods developed to ripen the cervix and induce labor. During recent decades, they have been substituted by pharmacological methods. Potential advantages of mechanical methods, compared with pharmacological methods, may include simplicity of preservation, lower cost and reduction of the side effects.

Objective: To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.

Result: For this update we have included a further 27 studies. The review includes 71 randomized controlled trials (total of 9722 women), ranging from 39 to 588 women per study. Most studies reported on caesarean section, all other outcomes are based on substantially fewer women. Four additional studies are ongoing.

Mechanical methods versus no treatment: one study (48 woman) reported on women who did not achieve vaginal delivery within 24 hours (risk ratio (RR) 0.90; 95% confidence interval (CI) 0.64 to 1.26). The risk of caesarean section was similar between groups (six studies; 416 women, RR 1.00; 95% CI 0.76 to 1.30). There were no cases of severe neonatal and maternal morbidity.

Mechanical methods versus vaginal PGE2 (17 studies;1894 woman): The proportion of women who did not achieve vaginal delivery within 24 hours was not significantly different (three studies; 586 women RR 1.72; 95% CI 0.90 to 3.27); however, for the subgroup of multiparous women the risk of not achieving delivery within 24 hours was higher (one study; 147 women RR 4.38, 95% CI 1.74 to 10.98), with no increase in caesarean sections (RR 1.19, 95% CI 0.62-2.29). Compared with

intracervical PGE2 (14 studies; 1784 women and misoprostol there was no significant difference in the proportion of women not achieving vaginal delivery within 24 hours.

Mechanical methods reduced the risk of hyperstimulation with fetal heart rate changes when compared with vaginal prostaglandins: vaginal PGE2 (eight studies; 1203 women, RR 0.16; 95% CI 0.06 to 0.39) and misoprostol (3% versus 9%) (nine studies; 1615 women, RR 0.37; 95% CI 0.25 to 0.54). Risk of caesarean section between mechanical methods and prostaglandins was comparable. Serious neonatal and maternal morbidity were infrequently reported and did not differ between the groups.

Mechanical methods compared with induction with oxytocin (reduced the risk of caesarean section (five studies; 398 women, RR 0.62; 95% CI 0.42 to 0.90). The likelihood of vaginal delivery within 24 hours was not reported. Hyperstimulation with fetal heart rate changes was reported in one study (200 participants), and did not differ. There were no reported cases of severe maternal or neonatal morbidity.

Conclusion: Induction of labour using mechanical methods results in similar caesarean section rates as prostaglandins, for a lower risk of hyperstimulation. Mechanical methods do not increase the overall number of women not delivered within 24 hours, however the proportion of multiparous women who did not achieve vaginal delivery within 24 hours was higher when compared with vaginal PGE2. Compared with oxytocin, mechanical methods reduce the risk of caesarean section.

Hyperbaric Oxygen Therapy for Chronic Wounds

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Background: Chronic wounds are common and present a health problem with significant effect on quality of life. Various pathologies may cause tissue breakdown, including poor blood supply resulting in inadequate oxygenation of the wound bed. Hyperbaric oxygen therapy (HBOT) has been suggested to improve oxygen supply to wounds and therefore improve their healing.

Objective: To assess the benefits and harms of adjunctive HBOT for treating chronic ulcers of the lower limb.

Result: We included nine trials (471 participants). Eight trials (455 participants) enrolled people with a diabetic foot ulcer: pooled data of three trials with 140 participants showed an increase in the rate of ulcer healing (risk ratio (RR) 5.20, 95% confidence interval (CI) 1.25 to 21.66; P = 0.02) with HBOT at six weeks but this benefit was not evident at longer-term follow-up at one year. There was no statistically significant difference in major amputation rate (pooled data of five trials with 312 participants, RR 0.36, 95% CI 0.11 to 1.18). One trial (16 participants) considered venous ulcers and reported data at six weeks (wound size reduction) and 18 weeks (wound size reduction and number of ulcers healed) and suggested a significant benefit of HBOT in terms of reduction in

ulcer area only at six weeks (mean difference (MD) 33.00%, 95% CI 18.97 to 47.03, P < 0.00001). We did not identify any trials that considered arterial and pressure ulcers.

Conclusion: In people with foot ulcers due to diabetes, HBOT significantly improved the ulcers healed in the short term but not the long term and the trials had various flaws in design and/or reporting that means we are not confident in the results. More trials are needed to properly evaluate HBOT in people with chronic wounds; these trials must be adequately powered and designed to minimize all kinds of bias.

Single Dose Oral Aspirin for Acute Postoperative Pain in Adults

Sheena Derry, R Andrew Moore

Background: This review is an update of a previously published review in the Cochrane Database of Systematic Reviews on 'Single dose oral aspirin for acute pain'. Aspirin has been known for many years to be an effective analgesic for many different pain conditions. Although its use as an analgesic is now limited in developed countries, it is widely available, inexpensive, and remains commonly used throughout the world.

Objective: To assess the analgesic efficacy and associated adverse events of single dose oral aspirin in acute postoperative pain.

Result: We included 68 studies in which aspirin was used at doses from 300 mg to 1200 mg, but the vast majority of participants received either 600/650 mg (2409 participants, 64 studies) or 990/1000 mg (380 participants, eight studies). There was only one new study.

Studies were overwhelmingly of adequate or good methodological quality. NNTs for at least 50% pain relief over four to six hours were 4.2 (3.9 to 4.8), 3.8 (3.0 to 5.1), and 2.7 (2.0 to 3.8) for 600/650 mg, 900/1000 mg, and 1200 mg respectively, compared with placebo. Type of pain model had no significant impact on the results. Lower doses were not significantly different from placebo. These results do not differ from those of the earlier review.

Fewer participants required rescue medication with aspirin than with placebo over four to eight hours post dose, but by 12 hours, there was no difference. The number of participants experiencing adverse events was not significantly different from placebo for 600/650 mg aspirin, but for 900/1000 mg the number needed to treat to harm was 7.5 (4.8 to 17). The most commonly reported events were dizziness, drowsiness, gastric irritation, nausea, and vomiting, nearly all of which were of mild to moderate severity.

Conclusion: Aspirin is an effective analgesic for acute pain of moderate to severe intensity. High doses are more effective, but are associated with increased adverse events, including drowsiness and gastric irritation. The pain relief achieved with aspirin was very similar milligram for milligram to that seen with paracetamol. There was no change to the conclusions in this update.