Selections from the Cochrane Library

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مختارات من مكتبة كوكرين

فيل ويفين، مها الخضوري، خضرة جلال

Editor's Note

This is the first of what we hope will be a regular feature in the SQUMJ. For each issue, we will scan the Cochrane Library for what is new and aim to select five or six reviews which we think will be of interest to readers. We hope you will find this a valuable resource. Feedback and suggestions for topics to cover will be welcomed. The Cochrane Library of Systematic Reviews is published quarterly as a DVD and monthly online. The March 2012 on-line issue contained 5,010 complete reviews, 2,153 protocols for reviews in production and 16,773 short summaries of systematic reviews published in the general medical literature. In addition, there are citations of 670,000 randomized controlled trials, and 15,000 cited papers in the Cochrane methodology register. The impact factor of the Cochrane Library stands at 6.186.

Introduction

This article comments on six reviews covering a range of topics including childbirth, cancer care, pneumonia and the newborn. We describe the findings of these reviews and discuss implications for practice, draw out any learning points, and are critical where we feel that is justified. Readers are encouraged to access the full report for any articles of interest as only a brief commentary is provided.

Medications for increasing milk supply in mothers expressing breast milk for their preterm hospitalised infants

Most authorities recognise that breast milk is the optimal form of nutrition for term and preterm infants. Often mothers of preterm infants may have to express their breast milk which may prove difficult. This review looked for evidence of medicines that could be used to increase breast milk supply and the authors looked for randomised controlled trials (RCTs) that might answer this question. They only found two trials with a total of 59 participants. Both trials used domperidone at a dose of 10 mg for three times a day; it was used for seven days in one trial and fourteen days in the other. When the numbers were combined in meta-analysis, there was a small increase in milk volume expressed of just under 100 ml but with wide confidence intervals. There were no long term benefits but also no adverse effects. These studies are too small to be reliable and suggest any benefit may be small. More studies are needed to confirm the result. This is not an uncommon finding in Cochrane reviews.

This article should be cited as: Donovan TJ, Buchanan K. Medications for increasing milk supply in mothers expressing breast milk for their preterm hospitalized infants. Cochrane Database Syst Rev 2012, Issue 3. Art. No.: CD005544. DOI: 10.1002/14651858.CD005544.pub2.

Oxygen therapy for pneumonia in adults

The authors state that although oxygen therapy is widely used in lung diseases its effectiveness as a treatment for pneumonia is not well known. They looked for RCTs of oxygen therapy in adults with community or hospital acquired pneumonia being treated in intensive care units. Three RCTs (151 participants) met the inclusion criteria. The results showed that non-invasive ventilation can reduce the risk of death in the intensive care unit (ICU), with an odds ratio (OR) 0.28, 95% confidence interval (CI) 0.09 to 0.88; lessen the need for endotracheal intubation, OR 0.26, 95% CI 0.11 to 0.61; lower the rate of complications, OR 0.23, 95% CI 0.08 to 0.70; and shorten ICU length of stay. Non-invasive ventilation and standard oxygen supplementation via a Venturi mask were similar when measuring mortality in hospital (OR 0.54, 95% CI 0.11 to 2.68); two-month survival (OR 1.67, 95% CI 0.53 to 5.28); duration of hospital stay (mean duration [MD] - 1.00, 95% CI 2.05 to 0.05); and duration of mechanical ventilation, standard (MD - 0.26, 95% CI -0.66 to 0.14). Some outcomes and complications of non-invasive ventilation varied according to different participant populations. What does this mean?

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The first figure above: odds ratio (OR) 0.28, 95% confidence interval (CI) 0.09 to 0.88 means that the intervention reduced the risk of death by 72% (1 minus 0.28). However, the confidence intervals mean this could be as good as a 91% reduction or as poor as a 12% reduction. This result comes from one study of 52 patients. 10/26 died in the non-invasive group and 18/26 in the standard treatment group. This gives a relative risk of 56% which is not quite as impressive as 72%. Based on this small amount of evidence, we can say that non-invasive ventilation can reduce the risk of death in the ICU, lessen the need for endotracheal intubation, and shorten both the ICU stay and length of intubation.

This article should be cited as: Zhang Y, Fang C, Dong BR, Wu T, Deng JL. Oxygen therapy for pneumonia in adults. Cochrane Database Syst Rev 2012, Issue 3. Art. No.: CD006607. DOI: 10.1002/14651858.CD006607.pub4.

Enteral iron supplementation in preterm and low birth weight infants

The authors state that it is common practice to give enteral iron supplementation to preterm and low birth weight infants on order to prevent iron deficiency anaemia. We do not know whether such supplementation improves growth and neurodevelopment. It may in fact do more harm than good. RCTs were sought that compared prophylactic iron supplementation by mouth with either no iron or with a different regime of iron in preterm and low birth weight infants. The authors found twenty-six studies (2,726 infants) for their analysis. The heterogeneity of participants, methods and results precluded an extensive quantitative synthesis. Of the 21 studies comparing iron supplementation with controls, none evaluated neurodevelopmental status as an outcome. When looking at haematological outcomes, no benefit for iron supplementation was seen in the first 8.5 weeks of postnatal life (16 trials), except by two poor quality studies. After 8.5 weeks most studies reported higher mean haemoglobin in those given iron supplementation. Despite the quantity of data, we can conclude that the results are uncertain.

This article should be cited as: Mills RJ, Davies MW. Enteral iron supplementation in preterm and low birth weight infants. Cochrane Database Syst Rev 2012, Issue 3. Art. No.: CD005095. DOI: 10.1002/14651858.CD005095.pub2.

Hyperbaric oxygenation for tumour sensitisation to radiotherapy

Cancer is a common disease and radiotherapy is one well-established treatment for some solid tumours. Hyperbaric oxygenation (HBO) may improve the ability of radiotherapy to kill hypoxic cancer cells, so the administration of radiotherapy while breathing HBO may result in a reduction in mortality and recurrence. Randomised and quasi-randomised studies comparing the outcome of malignant tumours following radiation therapy while breathing HBO versus air were sought. Nineteen trials contributed to this review (2,286 patients). With HBO, there was a reduction in mortality for head and neck cancers at both one year and five years after therapy (relative risk (RR) 0.83, $P = 0.03$, and in the number needed to treat (NNT) = 11 and RR 0.82, $P = 0.03$, NNT = 5 respectively), as well as improved local tumour control at three months (RR with HBOT 0.58, $P = 0.006$, NNT = 7). The effect of HBO varied with different fractionation schemes. We saw above the importance of Cis, but unfortunately these are not reported in the abstract. The authors state that "There is some evidence that HBO improves local tumour control and mortality for cancers of the head and neck, and local tumour recurrence in cancers of the head and neck, and uterine cervix." However, this needs to be put in context. HBO chambers cost around US $150,000 (c. Omani riyals 57,750) per chamber supplied and installed. With an NNT of 11, eleven patients have to be exposed to HBO to see one more person alive at one year, or 5 patients have to be exposed to HBO to see one more person alive at 5 years. The upper CI is around 20 in which case 20 would need to be exposed to HBO for one to benefit at 5 years. In addition, with a number needed to harm of 8, for every 8 exposed to HBO, one more will suffer from severe radiation tissue injury compared to those not exposed.

This article should be cited as: Bennett MH, Feldmeier J, Smee R, Milross C. Hyperbaric oxygenation for tumour sensitisation to radiotherapy. Cochrane Database Syst Rev 2012, Issue 4. Art. No.: CD005007. DOI: 10.1002/14651858.CD005007.pub3.

Centralisation of services for gynaecological cancer

Gynaecological cancers are the second most common cancers among women. It has been suggested that centralised care improves outcomes but consensus is lacking. This review aimed to assess the effectiveness of centralisation of care for patients with gynaecological cancer. They looked for RCTs, quasi-RCTs, controlled before-and-after studies, interrupted time series studies, and observational studies. Five studies met the inclusion criteria but all were retrospective observational studies and therefore at high risk of bias. This type of study is not as reliable as an RCT. When the authors combined three studies assessing over 9,000 women, it was found that institutions with gynaecological oncologists on site may prolong survival in women with ovarian cancer, compared to community or general hospitals: the hazard ratio (HR) of death was 0.90 (95% CI 0.82 to 0.99). This is only a modest improvement. By combining three other studies assessing over 50,000 women, it showed that teaching centres or regional cancer centres may prolong survival in women with any gynaecological cancer compared to community or general hospitals (HR 0.91; 95% CI 0.84 to 0.99) Here is evidence, but of rather low quality, to suggest that women with gynaecological cancer who received treatment in specialised centres lived longer.

This article should be cited as: Woo YL, Kyrgiou M, Bryant A, Everett T, Dickinson HO. Centralisation of services for gynaecological cancer. Cochrane Database Syst Rev 2012, Issue 3. Art. No.: CD007945. DOI: 10.1002/14651858.CD007945.pub2.

Pain management for women in labour: an overview of systematic reviews

This review is of a new type—an overview that summarises the evidence from other reviews. Normally, this type of review is based on existing Cochrane reviews but in this case the authors also included other published reviews. The authors looked at all pain management strategies include non-pharmacological interventions (coping with pain) and pharmacological interventions (pain relief).To summarise the evidence from Cochrane systematic reviews on the efficacy and safety of non-pharmacological and pharmacological interventions to manage pain in labour, the authors considered findings from non-Cochrane systematic reviews if there was no relevant Cochrane review. Fifteen Cochrane reviews (255 included trials) and three non-Cochrane reviews (55 included trials) were included. The authors divided the results into 3 sections: ***What works?*** The authors state that epidural, combined spinal epidural (CSE) and inhaled analgaesia effectively manage pain in labour, but may give rise to adverse effects. Combined-spinal epidurals relieve pain more quickly than traditional or low dose epidurals. Women receiving inhaled analgaesia were more likely to experience vomiting, nausea and dizziness. Women receiving epidural analgaesia were more likely to experience hypotension, motor blockade, fever or urinary retention. Less urinary retention was observed in women receiving CSE than in women receiving traditional epidurals. ***What may work?*** There is some evidence to suggest that immersion in water, relaxation, acupuncture, massage and local anaesthetic nerve blocks or non-opioid drugs may improve management of labour pain, with few adverse effects. Evidence was mainly limited to single trials. These interventions relieved pain and improved satisfaction with pain relief (immersion, relaxation, acupuncture, local anaesthetic nerve blocks, non-opioids) and childbirth experience (immersion, relaxation, non-opioids) when compared with placebo or standard care. Relaxation was associated with fewer assisted vaginal births and acupuncture was associated with fewer assisted vaginal births and caesarean sections. ***Insufficient evidence.*** The authors stated there was insufficient evidence to answer effectiveness questions for hypnosis, biofeedback, sterile water injection, or aromatherapy. The authors were hampered by the lack of standard assessment methods for pain and pain relief in these studies.

This article should be cited as: Jones L, Othman M, Dowswell T, Alfirevic Z, Gates S, Newburn M, Jordan S, Lavender T, Neilson JP. Pain management for women in labour: an overview of systematic reviews. Cochrane Database Syst Rev 2012, Issue 3. Art. No.: CD009234. DOI: 10.1002/14651858.CD009234.pub2.