



SYSTEMATIC REVIEWS

Systematic review is defined as:-

“A type of review article that uses explicit methods to comprehensively analyze and qualitatively synthesize information from multiple studies”

Here is a collection of the summaries of some of the practically useful systematic reviews. These have been taken from the Cochrane Library, a very reliable source of Evidence Based Medicine on the internet.

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Antibiotic duration for treating uncomplicated symptomatic lower urinary tract infection in elderly women

As people age (especially women), they become more prone to infections in the bladder (UTI - urinary tract infections). Older people are more likely to have adverse reactions to drugs. Up to the present time older women with uncomplicated UTI were treated longer than younger patients - without any scientific evidence and with an increased risk of adverse drug reactions. We defined three groups of treatment durations: single-dose, short (3 to 6 days) and longer courses (7 to 14 days).

We identified 15 studies (1644 elderly women) comparing single dose, short-course (3 to 6 days) and long course (7 to 14 days) antibiotic treatment for uncomplicated symptomatic UTI in elderly women. Our review suggests that single dose treatments are less effective than short or long courses, but better accepted by the patients. On the other hand longer courses may have more side effects. On the basis of the evidence available at present, an antibiotic treatment of 3 to 6 days could be sufficient for treating uncomplicated UTIs in elderly women, although more studies on specific, commonly prescribed antibiotics are needed.

Adrenaline for the emergency treatment of anaphylaxis

Anaphylaxis is a serious allergic reaction that is rapid in onset and may cause death. It is commonly triggered by a food, insect sting, medication, or natural rubber latex. The reaction occurs without warning and can be a frightening experience for those at risk and for their families and friends. Adrenaline (epinephrine) is widely advocated as the main treatment in those individuals experiencing anaphylaxis. There is no other medication with a similar effect on the many body systems that are potentially involved in anaphylaxis. The evidence base in support of the use of adrenaline is unclear. We therefore conducted a systematic review of the literature searching key databases for high quality published and unpublished material on the use of adrenaline for emergency treatment; in addition, we contacted experts in this area and the relevant pharmaceutical companies. Our searches retrieved no randomized controlled trials on this subject. We concluded that the use of adrenaline in anaphylaxis is based on tradition and on evidence from fatality series in which most individuals dying from anaphylaxis had not received prompt adrenaline treatment. Adrenaline appears to be life saving when injected promptly, however, there is no evidence from randomized controlled trials for or against the use of adrenaline in the emergency treatment of anaphylaxis. Given the infrequency of anaphylaxis, its unpredictability and the speed of onset of reactions, conducting such trials is fraught with ethical and methodological difficulties.

Antibiotic treatment reduces duration and severity of travellers' diarrhoea.

Diarrhoea is a common problem for travellers, particularly travellers going from developed to less developed nations. The illness is frequently caused by a bacterial infection. Although the illness is unlikely to result in death, diarrhoea can disrupt travel plans and lead to severe or incapacitating symptoms. The review showed that antibiotic treatment shortens the duration and severity of diarrhoea. Persons taking antibiotics reported more side effects, but most side effects were minor, or resolved on stopping the antibiotic.

Not enough evidence on whether antibiotics given to people with acute asthma (without evidence of infection) is effective

Patients with acute asthma who require admission to hospital are often treated with antibiotics, in case the underlying cause of the attack is a bacterial infection. This review examines the evidence regarding this therapy and whether it is justified in patients where x-rays and other diagnostic parameters do not indicate a bacterial infection. A limited number of studies were identified by searches conducted and data from them were extracted and analysed. The review concludes that whilst there may be little evidence to support the use of antibiotics in the treatment of acute asthma, more work is required for specific patient subgroups, notably older patients.

Antibiotics for asymptomatic bacteriuria in pregnancy

Antibiotics can reduce the risk of kidney infections in pregnant women who have a urine infection but no symptoms of infection. A urine infection without any of the typical symptoms associated with an acute urine infection (asymptomatic bacteriuria) occurs in 2% to 10% of pregnancies. It may lead to kidney infection (pyelonephritis) in the mother and may possibly contribute to low birthweight babies and preterm birth (before 38 weeks). The review of trials on antibiotic treatment for these women with no symptoms but high bacterial counts in their urine found 14 studies involving 2302 women. Most of the trials were of poor quality. Antibiotics were effective in clearing asymptomatic bacteriuria and reducing the incidence of symptomatic kidney infection in the mother. The incidence of low birthweight seemed also to be reduced. None of the studies adequately assessed adverse effects of treatment. More research is needed.

Bed rest for acute low-back pain and sciatica

People with acute low-back pain who are advised to rest in bed have more pain and are less able to perform every day activities, on average, than those who are advised to stay active.

As many people get some relief from low back pain and sciatica (pain down the back and leg) by lying down, bed rest is often recommended. However, this review found that, for people with acute low-back pain, advice to rest in bed is less effective in reducing pain and improving an individual's ability to perform every day activities than advice to stay active. For people with sciatica, there were no important differences in the effects of advice to stay in bed compared with advice to stay active.

Clopidogrel plus aspirin versus aspirin alone for preventing cardiovascular disease

Low-dose aspirin as antiplatelet therapy is still the drug of choice for preventing cardiovascular events, but the protection aspirin gives to people at high risk of cardiovascular events is only relatively modest. This review of 28,165 people in two trials found that in patients with acute coronary syndromes the benefit - a reduction in cardiovascular events - outweighs the harm of major bleeding. However, clopidogrel plus aspirin has no clear positive risk-benefit profile in people at high risk of cardiovascular events (multiple atherothrombotic risk factors) or in people with established cardiovascular disease (known coronary disease, ischemic cerebrovascular disease or peripheral arterial disease) but not presenting with an acute coronary syndrome, and the combination should not be prescribed routinely to prevent cardiovascular disease.

Colchicine for acute gout

This summary of a Cochrane review presents what we know from research about the effect of colchicine for gout. The review shows that:

There is silver level evidence (www.cochranemsk.org) that to treat gout, 1 mg of colchicine followed by 0.5 mg every two hours taken within 12 to 24 hours of an attack may decrease pain, swelling, redness and tenderness. Colchicine may cause side effects such as nausea, vomiting and diarrhea. It is not known whether colchicine is better than other treatments for gout.

What is gout and how can it be treated?

Gout is a type of arthritis in which there is a build up of crystals from uric acid in the joints of the body. In gout, the body either makes too much uric acid or it is not able to flush out excess uric acid from the body fast enough. When it builds up, the uric acid forms into crystals and can deposit in joints (especially in the big toe). In the joint, the deposits can cause pain, swelling and tenderness. An attack of gout may occur suddenly and go away on its own after 7 to 10 days or the pain and swelling can come on slowly and last for long periods. Non-steroidal anti-inflammatory drugs (NSAIDs), such as indomethacin or naproxen, are often used first to decrease the pain and swelling. In people who cannot take NSAIDs because of side effects or when NSAIDs are not working, there are other treatments such as corticosteroids or colchicine. Colchicine, however, may cause stomach problems.

What are the results of this review?

People took either colchicine pills or a placebo (fake pill) for an attack of gout. When the attack began, people took 1 mg of colchicine and then 0.5 mg every 2 hours until the attack stopped or people felt too ill to continue taking colchicine.

Benefits of colchicine

In people who had an attack,

colchicine may improve pain more than placebo

* pain may improve by 34 more points on a scale of 0 to 100 with colchicine

colchicine may improve the symptoms of gout overall (such as pain, swelling, redness and tenderness) more than placebo

* symptoms may improve by 3.6 more points on a scale of 0 to 12 with colchicine

colchicine may improve the symptoms of gout faster

There were no studies that compared colchicine to other treatments for gout.

Harms of colchicine in people who had an attack, colchicine may cause nausea, diarrhea or vomiting more than placebo * 0 out of 100 people had diarrhea or vomiting with placebo (but 24 had nausea) * 100 out of 100 people had diarrhea or vomiting with colchicine

Corticosteroid injections for shoulder pain

Corticosteroid injections may be of limited short-term benefit for shoulder pain

The available evidence from randomized controlled trials supports the use of subacromial corticosteroid injection for rotator cuff disease, although its effect may be small and short-lived, and it may be no better than non-steroidal anti-inflammatory drugs. Similarly, intra-articular steroid injection may be of limited, short-term benefit for adhesive capsulitis. Further trials investigating the efficacy of corticosteroid injections for shoulder pain are needed. Important issues that need clarification include whether the accuracy of needle placement, anatomical site, frequency, dose and type of corticosteroid influences efficacy.

Using ear drops to remove impacted ear wax is better than no treatment, but no particular sort of drops can be recommended over any other

Impacted ear wax is one of the most common reasons that people visit their general practitioners (family doctors) with ear problems, as it can cause reduced hearing, discomfort, and sometimes pain and dizziness. Ear drops (either oil- or water-based) are often prescribed to clear the wax or to aid subsequent ear syringing if necessary. The review of trials found that ear drops (of any sort) can help to remove ear wax, but that water and saline drops appear to be as good as more costly commercial products. The quality of the trials was generally low, however, and more research is needed.

Gabapentin for the treatment of acute and chronic pain in adults

Anticonvulsants (of which gabapentin is one) are a group of medicines commonly used for treating 'fits' or epilepsy, but which are also effective for treating pain. The type of pain which responds well is neuropathic pain, e.g., postherpetic neuralgia (persistent pain experienced in an area previously affected by shingles) and painful complications of diabetes. Approximately two-thirds of patients who take either carbamazepine or gabapentin can expect to achieve good pain relief. There is no evidence of benefit in acute pain.

H1-antihistamines for the emergency treatment of anaphylaxis

Anaphylaxis is a rare, but potentially life-threatening emergency. Evidence from the United Kingdom suggests that incidence may be increasing rapidly. Common triggers of anaphylaxis include a variety of foods, drugs and insect venoms.

H1-antihistamines are commonly used for the emergency treatment of anaphylaxis although the evidence underpinning this treatment is unclear. We therefore conducted a systematic review of the literature searching key databases for high quality published and unpublished material on this subject; in addition, we contacted experts in this area and relevant pharmaceutical companies.

Our searches failed to retrieve any randomized controlled trials on this subject. We conclude there is no evidence from randomized controlled trials to support the use of H1-antihistamines in the emergency management of anaphylaxis.

Strategies to encourage hand washing can reduce the incidence of diarrhoea by about one third

Diarrhoea is a serious global public health problem, particularly in low-income and middle-income countries. The World Health Organization estimates that over three million episodes occur each year, with many people dying, especially children aged less than five years in low- and middle-income countries. Persistent diarrhoea can also contribute to malnutrition, reduced resistance to infections, and sometimes impaired growth and development. The organisms causing diarrhoea can be transmitted from infected faeces to people through food and water, person-to-person contact, or direct contact. Hand washing after defecation and handling faeces, and before preparing and eating food can reduce the risk of diarrhoea. This review looked at trials of interventions to increase the use of hand washing in institutions in high-income countries and in communities in low- or middle-income countries, and found many of the interventions like educational programmes, leaflets, and discussions to be effective.

Treatments for alopecia areata, alopecia totalis and alopecia universalis

There is no good trial evidence that any treatments provide long-term benefit to patients with alopecia areata, alopecia totalis and alopecia universalis.

Alopecia areata is a condition that causes patchy hair loss. The size and number of patches and progress of the disease can vary between people. It can affect the entire scalp (alopecia totalis) or cause loss of all body hair (alopecia universalis). Sometimes the condition will get better on its own, but in some cases it can get worse.

Treatments include a variety of different creams or lotions applied to the scalp such as topical or oral corticosteroids, minoxidil and some light-based therapies. Some of the skin treatments can have unpleasant side effects such as itching or hair growth in areas of the body away from where the cream was applied. Oral steroids may cause serious side effects. Also, there is no guarantee that any hair regrown during treatment will persist once the treatment is finished.

We found 17 randomised controlled trials involving 540 participants. Only one study which compared two topical corticosteroids showed significant short-term benefits. No studies showed long-term beneficial hair growth. None of the included studies asked participants to report their opinion of hair growth or whether their quality of life had improved with the treatment.

Ty21a and Vi polysaccharide vaccines are effective in reducing typhoid fever; new vaccines are promising

Typhoid fever is a bacterial infection found mainly in South and East Asia, Africa, Latin America, and the Caribbean. It is characterized by fever, abdominal symptoms, chills, diarrhoea or constipation, headache, loss of appetite, cough, weakness, sore throat, dizziness, and muscle pains. The infection also sometimes causes psychosis and confusion. Mortality varies and can reach 10% of cases. Treatment is normally with antibiotics, but there are problems with drug-resistant strains. Vaccination is another way of trying to prevent this disease. The review found 17 trials (16 with usable data): four evaluated vaccine efficacy only; five evaluated efficacy and adverse events; and seven provided data only on adverse events. The two major vaccines currently licensed for use, Ty21a and Vi polysaccharide, were both effective in reducing typhoid fever; adverse events such as nausea, vomiting, and fever were rare. A vaccine that could be given to infants would be helpful as they are probably at increased risk of this infection.

Increased water intake may help reduce the risk of recurrence of kidney stones but more studies are needed

Kidney stones (also known as calculi) are masses of crystals and protein and are common causes of urinary tract obstruction in adults. For a long time, increased water intake has been the main preventive measure for the disease and its recurrence. In this review only one trial was found that looked at the effect of increase water intake on recurrence and time to recurrence. Increased water intake decreased the chance of recurrence and increased the time to recurrence. Further studies are needed.

Telephone consultation and triage: effects on health care use and patient satisfaction

Visits to emergency departments and family doctors have increased. One possible way to decrease the demands is to provide telephone helplines, hotlines or consultations. People can speak with health care professionals, such as doctors and nurses, on the telephone and receive medical advice or a referral to an appropriate health service. Nine studies were found and analysed to determine whether telephone consultation was safe and effective. In general, at least half of the calls were handled by telephone only (without the need for face-to-face visits). It was found that telephone consultation appears to decrease the number of immediate visits to doctors and does not appear to increase visits to emergency departments. It is still unclear though, whether it is just delaying visits to a later time. Telephone consultation also appears to be safe and people were just as satisfied using the telephone as going to see someone face-to-face. There are still questions about its effectiveness and more research into the use, cost, safety and satisfaction of telephone consultation is needed.

Tissue adhesives for traumatic lacerations in children and adults

Cuts (lacerations) often need to be closed to ensure proper healing, and prevent infection or unattractive scarring. Wounds may be closed with stitches (sutures), staples, tapes or glue (tissue adhesive). The review found that glue is an excellent substitute for stitches, staples or tapes to close simple cuts. Glue causes less pain, is quicker and needs no follow up for removal. A slightly higher number of cuts may break open (dehiscence) after being glued, compared to cuts closed with stitches, staples or tapes. Though there are a few different types of glue available, no one glue seems to be superior.

Topical treatments for skin warts

Viral warts are one of the most common skin diseases. They are caused by the human papilloma virus and most commonly found on the hands and feet. While warts are not harmful and usually go away in time without any treatment, they are unattractive and can be painful. Warts can be removed with wart paints containing salicylic acid. These are cheap and readily available, but slow to work. Cryotherapy, usually using liquid nitrogen, is often considered more effective than wart paints but is more expensive. The review of trials found that there was not enough evidence to compare treatments and that there was not enough evidence to support the use of cryotherapy (freezing) over wart paints as initial treatment for viral warts. More research is needed.

This review compares the safety and effectiveness of two of the most popular treatments for haemorrhoids, rubber band ligation (RBL) and excisional haemorrhoidectomy (EH).

When conservative treatments like change of diet or ointments do not help, people usually see a doctor for haemorrhoid removal. RBL involves placing rubber bands around haemorrhoids until they eventually fall off. There are other nonsurgical treatments for haemorrhoids but RBL is often considered the best. For more severe haemorrhoids surgical removal of the haemorrhoids (EH) may be necessary. Although it is very effective, it is more painful and invasive. This review is based upon three randomised controlled trials comparing RBL with EH, with a total of 216 patients. The trials showed that with EH, haemorrhoids did not come back as often as with RBL. EH was better for advanced haemorrhoids, known as grade III haemorrhoids. For less severe grade II haemorrhoids, RBL and EH were equally effective. EH caused more pain after the procedure, more minor complications, and required more time off work. Patient satisfaction was similar for both treatments. The review authors conclude that RBL should be the primary treatment used for grade II haemorrhoids, and EH reserved for patients who failed after repeated RBL or grade III haemorrhoids. They recommend more research be done comparing these techniques with the many newer ones, especially stapled haemorrhoidopexy, to determine which treatment is best.

Pain relief for neonatal circumcision

Circumcision is a painful procedure frequently performed on newborn baby boys without using pain relief. Available treatments include dorsal penile nerve block (DPNB), which involves injecting anesthetic at the base of the penis. Ring block is another form of penile block. Locally applied anesthetic creams include EMLA, a water-based cream including lidocaine and prilocaine. Based on 35 clinical trials involving 1,997 newborns, it can be concluded that DPNB and EMLA do not eliminate circumcision pain, but are both more effective than placebo or no treatment in diminishing it. Compared head to head, DPNB is substantially more effective than EMLA cream. Ring block and lidocaine creams other than EMLA also reduced pain but did not eliminate it. Trials of oral acetaminophen, sugar solutions, pacifiers, music, and other environmental modifications to reduce circumcision pain did not prove them effective. DPNB can cause minor bruising, bleeding, or swelling at the injection site. EMLA and other lidocaine creams can cause skin color changes or local skin irritation. There is a rare risk with lidocaine creams of causing methaemoglobinaemia (blue-baby syndrome, where the baby's blood lacks sufficient oxygen). However, two trials of EMLA for circumcision pain relief measured methaemoglobin levels and found them normal. The circumcision procedure itself, especially without pain relief, can cause short term effects such as choking, gagging, and vomiting. Long term effects of circumcision without pain relief are not well understood. Strict comparability between trials was rare. Trials used a variety of indicators to measure baby's pain. Crying time, facial expression, and sweating palms can indicate infant pain, as can increased heart rate, breathing rate, and blood pressure. Levels of chemical indicators that can be part of a pain or stress response and are present in the blood or saliva are another gauge of pain levels. Also, procedures were not generally performed in just the same way in different trials. Type of clamp used (using a Mogen clamp can shorten the duration of the procedure), length of wait time after injection or application of anesthetic and procedure techniques varied.