Best Evidence from the Cochrane Library

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Antioxidants for Male Subfertility

Showell MG, Brown J, Yazdani A, Stankiewicz MT, Hart RJ

Oxidative stress may cause sperm cell damage. This damage can be reduced by the body's own natural antioxidant defenses. Antioxidants can be part of our diet and taken as a supplement. It is believed that in many cases of unexplained subfertility, and also in instances where there may be a sperm-related problem, taking an oral antioxidant supplement may increase a couple's chance of conceiving when undergoing fertility treatment. This review identified 34 randomised controlled trials involving 2876 couples. Pooled findings support increases in live births and pregnancy rates with the use of antioxidants by the male partner. Further work is recommended to confirm these findings.

Conclusion

The evidence suggests that antioxidant supplementation in subfertile males may improve the outcomes of live birth and pregnancy rate for subfertile couples undergoing ART cycles. Further head to head comparisons are necessary to identify the superiority of one antioxidant over another.

Antifibrinolytic Drugs for Acute Traumatic Injury

Roberts I, Shakur H, Ker K, Coats T

Injury is the second leading cause of death for people aged five to 45 years. Over three million people worldwide die of injuries, usually because of extensive blood loss. Antifibrinolytic drugs promote blood clotting by preventing blood clots from breaking down. Some examples of antifibrinolytic drugs are aprotinin, tranexamic acid (TXA) and epsilon-aminocaproic acid (EACA). Doctors sometimes give these drugs to patients having surgery to prevent blood loss. They appear to have few complications. These drugs might also stop blood loss in seriously injured patients and, as a result, save lives.

The authors of this review searched for randomised trials assessing the effects of antifibrinolytics in trauma patients. When the review was first done in 2004 the results of the research were inconclusive. Since then, two new trials of TXA, one involving over 20,000 patients, have been completed. The results of this new research show that TXA reduces the risk of death compared to patients who receive no treatment without increasing the risk of adverse events.

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Two small trials of aprotinin were also found although they provided no reliable data. Furthermore, since May 2008 aprotinin has been withdrawn from world markets in light of safety concerns.

The authors conclude that TXA can safely reduce death in bleeding trauma patients. They suggest that future trials should explore the effects of TXA in patients with traumatic brain injury with no other trauma.

Conclusion
TXA safely reduces mortality in bleeding trauma patients without increasing the risk of adverse events. Further trials are needed to determine the effects of TXA in patients with isolated traumatic brain injury.

Anti-fibrinolytic Use for Minimizing Perioperative Allogeneic Blood Transfusion

Henry DA, Carless PA, Moxey AJ, O'Connell D, Stokes BJ, Fergusson DA, Ker K

Aprotinin, although effective in reducing bleeding, had a higher rate of death than tranexamic acid and aminocaproic acid, which appeared free of serious side-effects. Aprotinin has been withdrawn from world markets because of safety concerns. This review of over 250 clinical trials found that anti-fibrinolytic drugs used at the time of major surgery reduce bleeding, the need for transfusions of red blood cells and the need for repeat surgery because of bleeding. With the exception of aprotinin the drugs appear safe.

Conclusion
Anti-fibrinolytic drugs provide worthwhile reductions in blood loss and the receipt of allogeneic red cell transfusion. Aprotinin appears to be slightly more effective than the lysine analogues in reducing blood loss and the receipt of blood transfusion. However, head to head comparisons show a lower risk of death with lysine analogues when compared with aprotinin. The lysine analogues are effective in reducing blood loss during and after surgery, and appear to be free of serious adverse effects.

Probiotics for Treating Acute Infectious Diarrhea

Allen SJ, Martinez EG, Gregorio GV, Dans LF

Episodes of acute infectious diarrhea remain a major disease burden throughout the world, especially in developing countries. They are due to infection by many different organisms. Most episodes are self-limiting and usually investigations are not done to identify the infectious agent. The main risk to health is dehydration and management aims to improve and maintain hydration status. However, rehydration fluids do not reduce the stool volume or shorten the episode of diarrhea. Probiotics are "friendly" bacteria that improve health and are not harmful. A number of randomized controlled trials have been done to see whether probiotics are beneficial in acute infectious diarrhea. We have searched for as many of these trials as possible and collected the data in a systematic way to try to discover whether probiotics are beneficial in acute diarrhea. We identified 63 trials, which included a total of 8014 people - mainly infants and children. Probiotics were not associated with any adverse effects. Nearly all studies reported a shortened duration of diarrhea and reduced stool frequency in people who received probiotics compared to the controls. Overall, probiotics reduced the duration of diarrhea by around 25 hours, the risk of diarrhea lasting four or more days by 59% and resulted in about one fewer diarrheal stool on day 2 after the intervention. However, there was very marked variability in the study findings and so these estimates are

approximate. We concluded that these results were very encouraging but more research is needed to identify exactly which probiotics should be used for which groups of people, and also to assess the cost effectiveness of this treatment.

Conclusion
Used alongside rehydration therapy, probiotics appear to be safe and have clear beneficial effects in shortening the duration and reducing stool frequency in acute infectious diarrhea. However, more research is needed to guide the use of particular probiotic regimens in specific patient groups.

Statins for the Primary Prevention of Cardiovascular Disease

Taylor F, Ward K, Moore THM, Burke M, Davey Smith G, Casas J-P, Ebrahim S

Cardiovascular disease (CVD) is ranked as the number one cause of mortality and is a major cause of morbidity worldwide. Reducing high blood cholesterol which is a risk factor for CVD events is an important goal of medical treatment. Statins are the first-choice agents.

Since the early Statin trials were reported, several reviews of the effects of statins have been published highlighting their benefits particularly in people with a history of CVD. However for people without a past history of CVD (primary prevention), the evidence is less clear.

The aim of this systematic review is to assess the effects, both in terms of benefits and harms of statins for the primary prevention of CVD. We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE until 2007. We found 14 randomised control trials with 16 trial arms (34,272 patients) dating from 1994 to 2006. All were randomised control trials comparing statins with usual care or placebo. Duration of treatment was minimum one year and with follow up of a minimum of six months. All cause-mortality, coronary heart disease and stroke events were reduced with the use of Statins as was the need for revascularizations. Statin treatment reduced blood cholesterol. Taking statins did not increase the risk of adverse effects such as cancer. Few trials reported on costs or quality of life. This current systematic review highlights the shortcomings in the published trials and we recommend that caution should be taken in prescribing statins for primary prevention among people at low cardiovascular risk.

Conclusion
Although reductions in all-cause mortality, composite endpoints and revascularizations were found with no excess of adverse events, there was evidence of selective reporting of outcomes, failure to report adverse events and inclusion of people with cardiovascular disease. Only limited evidence showed that primary prevention with statins may be cost effective and improve patient quality of life. Caution should be taken in prescribing statins for primary prevention among people at low cardiovascular risk.

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