

SOCRATES 8 (Synopsis of Cochrane reviews applicable to emergency services)

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In the eighth article of the SOCRATES series we present our synopses of reviews from the *Cochrane Database of Systematic Reviews* relating to cardiology and infection that the working party felt were of particular relevance to emergency medicine practitioners. The methods of our review and the rationale for forming the SOCRATES working party are as have previously been published.

CARDIOLOGY: PRIMARY ANGIOPLASTY VERSUS INTRAVENOUS THROMBOLYSIS FOR ACUTE MYOCARDIAL INFARCTION

Intravenous thrombolysis therapy is the standard care for management of myocardial infarction. However, certain patients may be ineligible for treatment with thrombolytics, and, of those given thrombolytic therapy, 10–15% have persistent occlusion or reocclusion of the infarct related artery. Consequently, primary angioplasty (primary percutaneous transluminal coronary angioplasty (PTCA)) has been advocated as a better treatment for myocardial infarction.

Results

Ten trials including 2573 subjects were identified. Compared with thrombolytic therapy, primary angioplasty was associated with the following:

- significant reduction in short-term mortality at the end of the studies (relative risk reduction (RRR) 32%; 95% CI 5% to 50%)
- significant reduction of the rates of reinfarction (RRR 52%; 95% CI 30% to 67%)
- significant reduction in the rates of recurrent ischaemia (RRR 54%; 95% CI 39% to 66%)
- significant reduction also of frequency of strokes by 66% (95% CI 28% to 84%)
- superiority of primary angioplasty over thrombolysis in terms of the composite endpoint (mortality and reinfarction) was less with accelerated tissue plasminogen activator (tPA) (RR 0.70; 95% CI 0.51 to 0.97) than with streptokinase (RR 0.30; 95% CI 0.17 to 0.53).

SOCRATES says

The meta-analysis suggests that angioplasty provides a short-term clinical advantage over thrombolysis which may not be sustained. Primary angioplasty when available may be considered as the preferred strategy for myocardial reperfusion. However, in most situations, thrombolytic therapy may still be regarded as an excellent reperfusion strategy.

▲ Cucherat M, Bonnefoy E, Tremeau G. Primary angioplasty versus intravenous thrombolysis for acute myocardial infarction (Cochrane review). *Cochrane Library*, Issue 4. Oxford: Update Software, 2000.

INFECTION: ANTIBIOTICS FOR ACUTE BACTERIAL CONJUNCTIVITIS

The aim of this review was to assess the benefit and harm of antibiotic therapy in the management of acute bacterial conjunctivitis.

Results

A total of three randomised controlled trials in 527 patients were included. Acute bacterial conjunctivitis is a self-limiting condition, and clinical remission occurs by day 2–5 in 64% (95% CI 57% to 71%) of those treated with placebo. However, treatment with antibiotics was associated with significantly better rates of remission (days 2–5: relative risk (RR) 1.31; 95% CI 1.11 to 1.55; numbers needed to treat (NNT) 5).

SOCRATES says

Topical antibiotic preparations improve the rates of early clinical remission and early and late microbiological remission in acute bacterial conjunctivitis.

▲ Sheikh A, Hurwitz B, Cave J. Antibiotics for acute bacterial conjunctivitis (Cochrane review). *Cochrane Library*, Issue 1. Oxford: Update Software, 2001.

INFECTION: ANTIBIOTICS FOR SORE THROAT

Sore throat is a common reason for presentation to both primary care and the emergency department. The vast majority of cases will remit spontaneously, but antibiotics are still commonly prescribed. This review assessed the benefits of antibiotics in the management of sore throat.

Results

A total of 25 papers were included in the review. The papers were of variable quality; 17 studies were double blinded, three were single blinded. Earlier studies were randomised by methods which could introduce bias. Four outcome measures were reported.

- Non-suppurative complications

There was a trend for protection against acute glomerulonephritis with antibiotics (not statistically significant). The use of antibiotics significantly reduced the number of cases of acute rheumatic fever when compared with placebo.

- Suppurative complications

Antibiotics reduced the incidence of otitis media to around one quarter, and of acute sinusitis to around one half of that in the placebo group. The incidence of quinsy was also significantly reduced.

- Symptom improvement

The symptoms of headache, sore throat, and fever were reduced by about half in the antibiotic treated group. About

90% of both the antibiotic treated group and the other group were symptom free at one week.

- Subgroup analysis of symptom improvement

There were no significant differences in relation to outcomes between the groups with respect to age, blinded versus unblinded treatment or antipyretic use. Antibiotics were more effective in the patients with a streptococcal positive throat swab than in the controls.

SOCRATES says

The current evidence suggests that the use of antibiotics in the treatment of sore throat is likely to result in only moderate beneficial effects at the expense of treating many patients unnecessarily.

▲ Del Mar CB, Glasziou PP, Spinks AB. Antibiotics for sore throat (Cochrane review). *Cochrane Library*, Issue 4. Oxford: Update Software, 2000.

INFECTION: VACCINES FOR PREVENTING HEPATITIS B IN HEALTHCARE WORKERS

Hepatitis B causes serious liver disease, and vaccines are available for its prevention. The aim of this review was to assess the effectiveness and safety of plasma derived vaccines against hepatitis B infection in healthcare workers.

Results

Four trials were identified, all from the early 1980s. Mean follow up was 14.5 months. The authors report clear evidence in favour of vaccination of "high risk" healthcare workers (for example, haemodialysis unit staff) with an odds ratio for avoided cases of 0.34 (95% CI 0.21 to 0.55). The evidence is equivocal in "low risk" workers but suggests a benefit. Side effects were negligible.

SOCRATES says

Plasma derived vaccines are safe and efficacious in high risk healthcare workers but no long term conclusions can be drawn and there is no clear evidence of benefit in "low risk" workers.

▲ Jefferson T, Demicheli V, Deeks J, *et al.* Vaccines for preventing hepatitis B in health-care workers (Cochrane review). *Cochrane Library*, Issue 2. Oxford: Update Software, 2001.

INFECTION: ANTIBIOTICS FOR LEPTOSPIROSIS

Leptospirosis is an acute infectious disease caused by a spirochete and transmitted by rats, cats, dogs, and other animals to man. It is characterised by severe vasculitis. Adolf Weil in 1886 described the severe classic form of this disease (Weil's disease) characterised by fever, renal failure, jaundice, and haemorrhage and possible progression to disturbance of consciousness. The objective of this review was to summarise the best available clinical evidence of

efficacy and safety of antibiotics versus placebo or other antibiotics in the treatment of leptospirosis.

Results

Three randomised control trials met the inclusion criteria of this review. These included 150 patients of whom 75 received placebo and 75 were treated with antibiotics (61 were treated with penicillin and 14 with doxycycline).

The antibiotic treated group had a 1% mortality rate compared with a 4% mortality rate in the placebo group; risk difference (RD) (random model) -2%; 95% CI -8% to 4%. Thus antibiotics did not significantly affect mortality. Duration of hospital stay was not significantly different between the groups. Penicillin reduced the number of prolonged hospital stays and tetracycline reduced the fever period. Both penicillin and tetracycline significantly reduced the presence of *Leptospira* in the urine. There was no significant increase in the incidence of adverse events in the antibiotic treated group compared with those receiving placebo.

SOCRATES says

The evidence supporting the use of antibiotics for treating leptospirosis is not convincing but two of the three included studies were of low methodological quality. In leptospirosis penicillin or doxycycline treatment may do more good than harm.

▲ Guidugli F, Castro AA, Atallah AN. Antibiotics for leptospirosis (Cochrane review). *Cochrane Library*, Issue 4. Oxford: Update Software, 2000.

CONCLUSION

In this article the SOCRATES working party have summarised the reviews we felt were relevant for emergency practitioners in the *Cochrane Database of Systematic Reviews* relating to cardiology and infection. In the next issue we will present our synopses of reviews relating to obstetrics and gynaecology.

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