

SOCRATES

SOCRATES 1 (synopsis of Cochrane reviews applicable to emergency services)

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*“Upon this gifted age, in its dark hour,
Rains from the sky a meteoric shower
Of facts.... they lie unquestioned, uncombined.
Wisdom enough to leech us of our ill
Is daily spun, but there exists no loom
To weave it into fabric”.*
Edna St Vincent Millay. *Millay ESTV. Collected sonnets.*
New York: Harper and Row, 1988:140

Archibald Cochrane said “It is surely a great criticism of our profession that we have not organised a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomised controlled trials”.¹ It was in answer to this “criticism” that the Cochrane Collaboration was set up.

The modern practice of medicine necessitates that where feasible our practice should be based on the best available information. We can search for this ourselves, but where a rigorously conducted systematic review has been undertaken by a group of people with a specific knowledge and interest in the question you seek to answer, it would seem foolhardy to ignore it or under estimate its significance. This Cochrane Database of systematic reviews is a rapidly expanding collection of regularly updated systematic reviews of research on the effectiveness of health care.

At the time, our work was undertaken there were 52 Collaborative Review groups.

Each group being made up of institutions and individuals who share an interest in generating reliable up to date evidence relevant to the prevention, treatment, and rehabilitation of particular health problems. These groups had produced 1750 articles.

Each of these in turn is a complete review or protocol (that is, review in preparation) of studies that have met rigorous inclusion criteria by the international Cochrane Collaboration.

The desirability of an evidence base for good practice is self evident. The Cochrane Collaboration has painstakingly pulled together a database of evidence that we ignore at our patients’ peril. This review, in keeping with the principles expounded by the Collaboration, used enthusiasm, team work, a desire to keep up to date, and a search for articles of relevance to our specialty. This the first paper in the SOCRATES series is aimed primarily at disseminating a synopsis of the output of the Cochrane Database of Systematic reviews in neurology that are of particular relevance to emergency physicians.

Methodology

The members of the SOCRATES working party were each assigned Cochrane groups.

Each reviewer then searched through the output of the group and selected the articles that were relevant to emergency medicine. An article was deemed relevant if the information was regarded as applicable to the practice

of emergency medicine. The SOCRATES reviewer then summarised the article using a format that had previously been agreed by the team. The full text of the article was then given to another group member and the accuracy of the synopsis assessed. Only completed reviews were considered for summarising as protocols could not be used to give a definitive answer.

The structure of each synopsis is as follows:

- Title
- Background—information about the condition and question addressed by the review.
- Results—number of studies, number of patients.
- SOCRATES says—the answer to the clinically relevant question where available.
- Authors of the Cochrane Review

The number of summaries performed by the working party has resulted in a volume of work entitled SOCRATES (Synopsis of Cochrane Reviews Applicable to Emergency Services). In this article, we present the first half of the reviews relating to neurology. We hope that our synopsis of the Cochrane reviews applicable to emergency services will help to disseminate some of the invaluable information available in the Cochrane Database of Systematic Reviews.

REFERENCE

- 1 Cochrane A. Evidence based medicine reviews—Cochrane Database of Systematic Reviews. *Cochrane Library*. Issue 4. Oxford: Update Software, 2001.

THROMBOLYSIS (DIFFERENT DOSES, ROUTES OF ADMINISTRATION AND AGENTS) FOR ACUTE ISCHAEMIC STROKE

The effectiveness of thrombolysis in acute myocardial infarction has led to research into its use in acute ischaemic stroke. A recent systematic review of randomised control trials comparing thrombolysis with control in acute ischaemic stroke showed an excess of early and total deaths and symptomatic intracerebral haemorrhage with thrombolysis. However, there is a trend in favour of thrombolysis in the combined outcomes of death or disability at the end of the follow up period. The objectives of this review were to assess the effect and safety of different thrombolytic agents, and different regimens in acute ischaemic stroke.

Results

Eight papers were reviewed including 1334 patients. Only papers comparing different doses were identified and not different routes.

SOCRATES says

There is not enough evidence to determine whether lower doses of thrombolytic agents might be safer or more effective than higher doses in acute ischaemic stroke.

▲ **Liu M**, Wardlaw J. Thrombolysis (different doses, routes of administration and agents) for acute ischaemic stroke. *Cochrane Library*. Issue 4. Oxford: Update Software, 2000.

THROMBOLYSIS FOR ACUTE ISCHAEMIC STROKES

Most strokes are attributable to the blockage of a cerebral artery by a blood clot. Thrombolysis may reduce brain damage from the stroke but can also cause serious bleeding in the brain. The objectives of this review were to assess the safety and efficacy of thrombolytic agents in patients with acute ischaemic stroke.

Results

Seventeen papers including 5216 patients were reviewed. Thrombolytic treatment significantly increased the risk of early death (7–10 days) and at the end of follow up (1–6 months). Thrombolysis significantly increases the risk of both fatal and symptomatic intracranial haemorrhage, this is partially offset by a reduction in disability in survivors. Data from trials using rTPA are most promising.

SOCRATES says

The use of thrombolytic therapy in routine clinical practice for acute ischaemic stroke cannot be supported but may be justified in specialist centres.

▲ **Wardlaw JM**, del Zoppo G, Yamaguchi T. Thrombolysis for acute ischaemic stroke. *Cochrane Library*. Issue 2. Oxford: Update Software, 2001.

ANTIPLATELET THERAPY FOR ACUTE ISCHAEMIC STROKE

In patients with acute ischaemic stroke there is activation of platelets. Antiplatelet therapy may reduce the volume of brain damaged by ischaemia and reduce the risk of early, recurrent ischaemic stroke. However, this treatment may increase the risk of intracranial haemorrhage. The objective of this review was to assess the net result of antiplatelet therapy in acute ischaemic stroke.

Results

Eight trials with 41 325 patients were included. Ninety eight per cent of data from two trials testing aspirin 160–300 mg within 48 hours of onset. There is a significant decrease in death or dependency with 13 more patients alive and independent at the end of follow up for every 1000 treated. There are 10 patients making an absolute recovery for every 1000 patients treated. However, there are two symptomatic intracranial haemorrhages for every 1000 patients treated but this is offset by a reduction of seven early recurrent ischaemic strokes for every 1000 patients treated.

SOCRATES says

Aspirin 160–300 mg per day improves long term outcome for patients with acute ischaemic stroke.

▲ **Gubitz G**, Sandercock P, Counsell C. Antiplatelet therapy for acute ischaemic stroke. *Cochrane Library*. Issue 4. Oxford: Update Software, 2000.

ANTITHROMBOTIC DRUGS FOR CAROTID ARTERY DISSECTION

Internal carotid artery dissection can lead to ischaemic stroke by occlusion of the artery. This is the second leading cause of

stroke in the under 45 year age group. Antithrombotic agents may prevent arterial thrombosis but this benefit may be offset by increased bleeding. The objectives of this review were to determine whether antithrombotic drugs are effective and safe in the treatment of patients with extracranial internal carotid artery dissection.

Results

No randomised trials were included. Twenty four non-randomised, observational studies with 286 patients who received antiplatelet or anticoagulation treatment were included. There was no significant difference in odds of death or odds of being alive but disabled when comparing antiplatelet drugs with anticoagulants.

SOCRATES says

There is no evidence to support or refute the use of antiplatelet or anticoagulant treatment.

▲ **Lyrer P**, Engelter S. Antithrombotic drugs for carotid artery dissection. *Cochrane Library*. Issue 4. Oxford: Update Software, 2000.

THEOPHYLLINE, AMINOPHYLLINE, CAFFEINE, AND ANALOGUES FOR ACUTE ISCHAEMIC STROKE

Theophylline causes potent cerebral vasoconstriction, which decreases blood flow in the non-ischaemic areas of the brain and increases collateral blood flow surrounding the ischaemic area. The objectives of this review were to assess the effect and safety of theophylline and its analogues in people with acute ischaemic stroke.

Results

Two small, randomised trials with 119 patients were included both testing aminophylline compared with control. There was no significant difference in early mortality rates. There were insufficient data to assess late mortality or quality of life.

SOCRATES says

Theophylline or aminophylline should not currently be used in the routine management of acute ischaemic stroke.

▲ **Mohiuddin AA**, Bath FJ, Bath PMW. Theophylline, aminophylline, caffeine and analogues for acute ischaemic stroke. *Cochrane Library*. Issue 4. Oxford: Update Software, 2000.

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