Table 2

Author, date, country	Patient group	Study type	Outcomes	Key results	Study weaknesses
Chen <i>et al</i> , 2000, UK	Combination of 20 000 patients from the Chinese Acute Stroke Trial and 20 000 patients from the International Stroke Trial presenting with acute stroke symptoms	Prospectively planned meta-analysis of data to assess benefits and risks of aspirin in particular subgroups of patients, including those who did not undergo a CT scan	Recurrent ischaemic stroke in all patients; mortality without further stroke; haemorrhagic stroke or haemorrhagic transformation of infarct; benefit/hazard in patients randomised without CT scan; benefit/hazard in patients inadvertently randomised after shown to have had haemorrhagic stroke; combined outcome of further stroke or death	Reduction of 7/1000 patients ($p < 0.001$); reduction of 4/1000 patients ($p = 0.025$); increase of 2/1000 patients ($p = 0.035$); no significant difference in outcome in 9000 patients compared with patients who underwent CT scan before randomisation; no significant difference in outcome in 773 patients; reduction of incidence of 9/1000 patients	
Sandercock <i>et al</i> , 2003, UK	Randomised trials comparing antiplatelet treatment (started within 14 days of stroke) with control in patients with definite or presumed ischaemic stroke; total of 9 trials with 41 399 patients	Review of randomised trials	Outcome of patients with intracerebral haemorrhage, inadvertently randomised to receive aspirin	Significant reduction in odds of poor outcome (OR 0.68; 95% CI 0.49 to 0.94)	

CT, computed tomography.

[aspirin.mp. or exp Aspirin/or acetylsalicylic acid.mp. or ASA.mp.] and [acute.mp. or exp Acute Disease/or emergen\$.mp. or urgent.mp. or immediate.mp.] limit to humans and English language. *Cochrane Library*: (MeSH Cerebrovascular Accident or stroke) and (MeSH Aspirin OR aspirin).

Search outcome

In all, 734 papers were found in Medline and 132 in the Cochrane Database of Systematic Reviews. One paper was a combined analysis and one was a Cochrane systematic review with relevance to the question. Table 2 summarises the contents of these two papers.

Comments

In many hospitals in the UK, patients who attend with symptoms and signs suggestive of a cerebrovascular event will not undergo an immediate computed tomography scan outside of normal working hours. Several patients therefore have to wait for a long time before the underlying diagnosis is made and appropriate treatment is given. Most of these patients will have had a cerebral infarction, and are likely to benefit from antiplatelet treatment. The concern with giving all patients blind treatment is the risk of causing further bleeding in the event of a cerebral haemorrhage.

Most patients from studies reported in the Cochrane review and all patients in the combined analysis were taken from two large randomised trials, the International Stroke Trial and the Chinese Acute Stroke Trial. Although neither of these trials sought to answer the above-mentioned question directly, both trials inadvertently incorporated these patients as a subgroup. It was shown that aspirin improved the outcome in patients who had not undergone computed tomography and also in patients who were shown to have a haemorrhagic stroke.

Although treating patients who present with symptoms of a cerebrovascular event with aspirin increases the risk of intracranial haemorrhage, there is an overall benefit in terms of survival and recurrent stroke rates. Patients shown to have an intracerebral haemorrhage on computed tomography scan were also overall benefited from receiving aspirin.

These studies were based on starting aspirin within 48 h of presentation. No data were available on giving aspirin immediately at the time of presentation.

As a word of caution, an observational study by Toyoda *et al* suggested that prior treatment with aspirin may be an independent predictor of haematoma enlargement in patients with intracranial haemorrhage (odds ratio 5.02, 95% confidence interval 1.42 to 17.7). It may therefore be prudent to withhold aspirin treatment if a computed tomography scan is to be carried out within 48 h of presentation.

► CLINICAL BOTTOM LINE

Administration of aspirin is likely to benefit most patients overall, perhaps even those with haemorrhagic strokes. Available data demonstrate a benefit only to patients starting treatment with aspirin within 48 h of admission, and no data suggest increased benefit with earlier administration. If a computed tomography scan is to be carried out within 48 h of presentation, then it would be prudent to withhold antiplatelet treatment until the underlying pathology is shown. Those patients who are likely to improve the most will still benefit from administration of treatment at this point.

Chen ZM, Sandercock P, Pan HC, *et al*. Indications for early aspirin use in acute ischemic stroke: a combined analysis of 40000 randomized patients from the Chinese Acute Stroke Trial and the International Stroke Trial. *Stroke* 2000;1240-9.

Sandercock P, Gubitz G, Foley P, *et al*. Antiplatelet therapy for acute ischaemic stroke. *Cochrane Database Syst Rev* 2003;2:CD000029.

Toyoda K, Okada Y, Minematsu K, *et al*. Antiplatelet therapy contributes to acute deterioration of intracerebral haemorrhage. *Neurology* 2005;65:1000-4.

Myringotomy in traumatic haemotympanum

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Abstract

A short-cut review was carried out to establish whether myringotomy is of value in cases of haemotympanum. In all, 205 papers were found in Medline and 105 in Cochrane using the reported searches. None presented any evidence to

answer the clinical question. Hence, it is concluded that there is no evidence available to guide this decision and that local expert advice should be followed.

Clinical scenario

A 27-year-old man sustains punches on the face and ear during a drunken brawl. He attends the emergency department the next day with unilateral deafness and otalgia. Examination shows an intact tympanic membrane, but blood in the middle ear cleft. The senior health officer on-call for ENT suggests that the patient needs a myringotomy to drain the blood. You wonder whether there is any evidence that this could relieve the symptoms and improve the outcome.

Three-part question

In [an adult with a traumatic haemotympanum] is [myringotomy better than conservative management] at [improving hearing and relieving pain]?

Search strategy

Medline 1966–week 1 July 2006 using the OVID interface, and *Cochrane Library* Issue 2 2006. medline: [(exp wounds and injuries/or exp hemorrhage/or exp blood/or exp craniocerebral trauma/) or (injur\$ or trauma\$ or haemorrhag\$ or hemorrhag\$ or blood\$ or bleed\$).mp.] and (exp ear, middle/or exp tympanic membrane/or middle ear\$.mp.) and [(exp middle ear ventilation/or exp drainage/) or (drain\$ or myringotomy\$.mp.)]. *Cochrane Library*: [exp MeSH descriptor tympanic membrane or exp MeSH descriptor ear, middle] and [myringotomy or drain*] and [injur* or trauma* or haemorrhag* or hemorrhag* or bleed* or blood*].

Search outcome

Altogether 205 papers were identified using the reported Medline search and 105 papers in the *Cochrane Library*. None of the papers identified were relevant to the three-part question.

Comments

Traumatic haemotympanum causes the tympanic membrane to appear dark blue, purplish or even almost black. It has traditionally been said to be pathognomonic of a temporal bone fracture. However, haemotympanum can also occur as a result of retrograde haemorrhage after epistaxis. It may be possible to gain some insight into the aetiology using colour as a guide. Haemotympanum secondary to epistaxis has been found to give a bright red appearance, perhaps signifying the presence of oxygenated blood (from the carotid arterial system, which supplies the nose) rather than deoxygenated blood (from venous bleeding associated with temporal bone fractures). This unproved technique may, however, be of questionable reliability.

There has been no published evaluation of myringotomy as a therapeutic technique in traumatic haemotympanum. Reports in the literature suggest that this condition may be treated conservatively. Prophylactic antibiotics are recommended, but a review of the evidence for this is beyond the scope of this BET.

► CLINICAL BOTTOM LINE

Patients with traumatic haemotympanum should be investigated for potential basal-skull fracture. No published evidence is available of either benefit or harm with myringotomy, nor is there any evidence of harm after conservative management. Local advice should be followed.

Deguine C, Pulec JL. Temporal bone fracture with hemotympanum. *Ear, Nose Throat J* 2003;**82**:903.

Pulec JL, Deguine C. Hemotympanum from trauma. *Ear Nose Throat J* 2001;**80**:486.

Evans TC, Hecker J, Zaiser DK. Hemotympanums secondary to spontaneous epistaxis. *J Emerg Med* 1988;**6**:387–9.

Koscove E, Hudson C. Observations on hemotympanum. *J Emerg Med* 1989;**7**:411–12.

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