Effectiveness and cost-effectiveness

Mark Bovey, November 2005

The Smallwood report on the role of CAM in the National Health Service arrived in October 2005 in a blaze of publicity. It presented a largely positive view of the potential cost-effectiveness of complementary medicine in the NHS but some researchers were unhappy with this message. One objection was that people largely use CAM as an add-on, not an alternative, and hence an NHS acupuncture service would not save money but would increase costs. Although some cost-evaluation studies have indicated substantial savings could be made this has not been demonstrated in recent large controlled acupuncture trials. However, what the detractors failed to point out was that these randomised controlled trials (RCTs) all showed acupuncture to be cost-effective, hence any increased costs were more than offset by its benefits.

Cost-effectiveness

In the last two years we have seen cost-effectiveness results from three large trials of acupuncture for chronic pain in which patients were randomised either to receive the therapy or not. Practitioners were left free to follow their normal diagnostic and treatment procedures; there was no set formula. Patients in both groups could choose to use normal health care if they wished. Access to acupuncture did not substantially reduce the take-up of conventional medicine, so the total healthcare bill (conventional plus CAM) was greater for the acupuncture groups.

Costing the benefits, or effectiveness, of treatment is a contentious matter, with many possible approaches. How do you measure the value of well-being or of a change in attitudes or perceptions?
For chronic conditions the usual approach is to measure the treatment outcomes with a quality of life questionnaire (looking at pain, effect on daily activities, mental wellbeing etc), combining the separate components to obtain a single health score. This score for an acupuncture group can then be compared with that of no acupuncture and set against the cost difference; this gives the cost-effectiveness.

In the table below the figures for cost-effectiveness are expressed in £/unit of benefit; the lower the value the more cost-effective is the treatment. But how low does it have to be before we can pronounce confidently 'acupuncture is cost-effective'? NICE (National Institute for Clinical Excellence) has suggested a figure around £30,000, on which basis the recent results are all well within the cost-effective zone.

Author (year)	Country	Condition	Costs (Acu v. standard)	Cost-effectiveness (£/unit benefit)
Vickers et al (2004)	UK	Headache	+	9,200**
Thomas et al (2005)	UK	Back pain	+	4,200
Witt et al (2005)	Germany	Headache	+	7,700
Witt et al (2005)	Germany	Back pain	+	7,000
Witt et al (2005)	Germany	OA* - knee, hip	+	11,900

* OA = osteoarthritis
** This was their most conservative estimate. If acupuncture was assumed to have longer-term benefits, or if reduced sick days were included, the figures were dramatically better.

Effectiveness

If cost savings are marginal or non-existent then a 'new' treatment stands of falls on its effectiveness, compared to existing conventional treatments or to no treatment at all. For cost-effectiveness purposes the comparison with sham should be irrelevant, as nobody is intentionally providing a sham acupuncture service. However, for completeness sake, and because the placebo effect is still the fiercest debating ground in CAM research, I shall include these data too.

At the 2005 Annual Symposium on Complementary Healthcare in Exeter, Klaus Linde (medical acupuncturist and CAM researcher in Germany) summarised the results of RCTs for chronic back pain, headache and knee/hip osteoarthritis (OA). This was the first overview to include data from the current large German trials (*see the April 04 article in this same section of the web site for more information on these*). He excluded studies with fewer than 8 acupuncture treatments, thus providing a rather different set of results to previous reviews.

a) Acupuncture v. no treatment
[8 studies for back pain, 6 for headache, ? for OA[†]]
For all three conditions, all of the trials found acupuncture to be better than no treatment. The advantages were statistically significant in every case.

b) Acupuncture v. sham
[7 studies for back pain, 16 for headache, ? for OA[†]]
Again, all the trials were positive for acupuncture. Most, but not all, were also statistically superior. When all the individual results were pooled together for each condition then the pooled advantages were significant. OA showed bigger effects than the other traits.

c) Acupuncture v. standard, conventional treatment
This is, perhaps, the most interesting area and the most significant for NHS purposes. Unfortunately it is the least researched. Only for headache were there enough studies to review (10). There is another, even larger, set of German trials but the results are yet to be published. Preliminary data indicates substantial advantages for acupuncture over standard treatment.

So far, so good – but it's never that easy. For back and headache there is a tendency for the larger, more recent sham controlled trials to have less favourable results; not negative, but differences too small to be deemed clinically or statistically significant. This is sufficient cause for the sceptics to raise the old, familiar cry 'it's all just a placebo'. For the more discerning medical researchers it suggests a more interesting hypothesis: in some conditions (e.g. knee OA, some internal illness) acupuncture is point-specific; in others (e.g. addictions) any old points will do; a third group (many of the painful conditions) is intermediate. This is not anti-acupuncture in its widest sense but it does question the value of traditional-type practice in certain circumstances. Still, it's just a hypothesis.

[†] I did not get down this figure during the talk. Dr Linde's meta-analysis will be published in due course.