Acupuncture and Migraine

Doctors practising acupuncture expect 60 to 70 per cent of selected patients suffering from common or classical migraine to receive effective long-term relief. The formidable difficulties in designing trials of the acupuncture method have been reviewed. The clinical trial protocols will become easier to plan when more is known about the possible mechanisms of acupuncture in relieving migraine. Nevertheless, two trials await publication in UK.

Method
Thirty-gauge sterile,atraumatic, solid needles are inserted into tender or other points, usually in the neck and in such muscles as the superior portion of trapezius (supplied by C2 to 4). Each practitioner evolves his own style: some prefer the Chinese method of inserting needles deeply into the tissues and manipulating them in such a way as to produce bizarre or unpleasant sensations, which frequently radiate some distance from the site of the needle; others taught in a western manner by Mann stimulate the periosteum overlying the transverse processes of C3/4 vertebrae; others prefer to leave the needles in situ after inserting them relatively painlessly to a depth of a few millimetres into the subcutaneous tissues overlying tender regions; many practitioners prefer to stimulate the needles electrically, at either low or high frequencies.

The variety of techniques is bewildering to the beginner, but the success of each method depends largely on the practitioner's experience. Whatever method is employed, too much stimulation will make patients worse, while too little will have no effect.

These treatments are carried out once a week until sustained relief is obtained. This usually takes from seven to twelve weeks in responsive patients. If there has been no relief after three treatments, the treatment is abandoned.

Mechanism
We now have to ask ourselves whether it is possible to explain the effects of acupuncture. First of all, how can treatment to the neck have an effect on pain in the head? Kerr, using degeneration techniques in the cat, demonstrated an intermingling of fibres from the upper cervical segments with those of the 5th, 7th, 9th and 10th cranial nerves in a general neuronal pool within the spinal tract of the trigeminal nerve.

Denny-Brown and Yanagisawa explored this question in the monkey and they too demonstrated that the face receives a representation from sources other than the trigeminal nerve alone. They revealed the presence of a shared inhibitory and facilitatory system within the spinal tract of the trigeminal nerve, based on the 5th, 7th and 9th cranial nerves, together with the 2nd and 3rd cervical segments. They proposed that the combined inputs from all these sources should be considered responsible for setting a central threshold of pain from any one source. Hodge and King supported many of these conclusions in man.

Pomeranz and Hans and Terenius reviewed the remarkable advances in our understanding of the homeostatic mechanisms of pain. The patient's awareness of pain may be modified by changing the levels of several central nervous system transmitter substances such as norepinephrine, serotonin, opioids (including enkephalins, beta-endorphin and dynorphin). There are several other substances and systems and many await discovery.

Electro-acupuncture allows the practitioner to stimulate various elements of the homeostatic mechanisms selectively, by altering the frequency of stimulation. It is generally accepted that stimulation at high frequency (100-200 Hz), for example, produces analgesia in the same segment which is not naloxone reversible; in other words, this method does not affect the systems requiring opioids. On the other hand, low-frequency stimulation (below 10 Hz) given at just above the pain threshold tends to produce intersegmental analgesia which is reversible by naloxone. It has been shown, for instance, that low-frequency stimulation of the first dorsal interosseous muscle of the hand raises the pain threshold in a non-selective manner all over the body. This phenomenon was revealed by Chiang in rabbits, and by Lynn and Perl in man.

In an attempt to explain the periodicity of migraine, Baldi et al. have shown that during migraine attacks the opioid beta endorphin levels are significantly lower than during pain-free periods. Sicuteri has presented the novel idea that a variety of homeostatic mechanisms which maintain a normal central pain threshold are impaired during migraine episodes.

In Copenhagen a number of studies have been carried out on the tenderness and EMG activity in the neck and head muscles of patients suffering common or classical migraine. Tfelt-Hansen et al. examined 50 patients during typical common migraine attacks. They systematically examined 26 cranial and neck muscles together with their tendinous insertions. All 50 patients were tender, most commonly in the sternomastoid, anterior temporal, neck and shoulder muscles, the coronoid process and occipital insertions. Infiltrating these tender points with local anaesthetic or saline rendered 28/48 patients symptom free after 70 minutes — a significant improvement on the results of medical treatment. Whether local anaesthetic or saline was injected made no difference to the result.

Doctors practising acupuncture would expect to relieve migraine headaches in a similar fashion, with needles inserted in similar sites, but not attached to syringes.

Those who have studied tenderness in soft tissues have suggested that a continuous stream of noxious inputs from these regions lowers the central threshold of pain. This increases the awareness of pain, not only from the tender regions themselves, but also from other sources innervated by the same or related segments. These proposals were made by Travell and Melzack, Stillwell and Fox.

Any procedure such as acupuncture that reduces tenderness in soft tissues would be expected to raise the central threshold of pain and provide relief from all pain-producing sources supplied by the same or related segments.

Another possibility is that the

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soft tissues may become tender to palpation when their pain threshold is lowered as a result of changes in the inhibitory and facilitatory systems within the central nervous system. Acupuncture, when successfully applied, might reset the systems within the central nervous system.

Conclusion
Whatever the causes of migraine (and it is likely that there are a multitude of factors) it is probable that acupuncture has a role to play in resetting the homeostatic mechanisms controlling the threshold of pain in such a way that the patient experiences less pain and less frequent attacks of migraine.

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MCMILLIN, CONGRESS
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increases the level of met-enkephalin in the CSF. Dr Smith made the point that sheep have a lot of CSF, but little brain, and he has now developed a sheep preparation with chronic cisterna magna cannulations which will permit experiments into the modulation of pain perception. Endorphin measurements will be carried out, using a combination of radioimmunoassay, G50 chromatography and HPLC.

The cost-effectiveness of acupuncture in general practice was the theme of a presentation by Dr Patrick McMillin, the sole British representative. He had found that treatment of osteo-arthritis, with acupuncture resulted in a lower drugs bill for the National Health Service, and reduced hospitalisation costs. He surprised his audience by revealing that British GPs were not specially paid for carrying out acupuncture treatments but he stressed that job satisfaction was equally important.

Australian Dr Simon Strauss pursued the cost-effectiveness theme in a talk on low back pain and acupuncture. This paper made the case for early treatment of back pain with acupuncture and showed that savings of between 60,000 and 100,000 dollars could be made for every 100 patients. The message was that with widespread use of acupuncture and earlier presentation of patients, our community health costs could be dramatically reduced.

The use of acupuncture as an alternative dental analgesic for a patient with multiple allergies was described by Dr Ardenman. Reports of the use of acupuncture for tooth extractions date back to 1958. There have been many conflicting findings about the efficacy of dental acupuncture and few effective controlled studies. It is clear, however, that acupuncture analgesia which is adequate for dental extractions may be produced in some individuals.

It has been said that acupuncture may be of advantage in atopic individuals, who may be hypersensitive to routine methods of producing analgesia. A case was described in which an atopic patient at the Swedish Karolinska Institute had two lower molar teeth successfully extracted after acupuncture analgesia. The case was described in detail and recommendations were made for further research into acupuncture analgesia.

The use of laser acupuncture was described by Dr Johannes Bischko, who spoke of the detailed experiments carried out to establish the therapeutical value, effect and safety of the laser for patient and physician. The laser devices were tested clinically, technically and experimentally and exhaustive technical data were presented. The depth of penetration of the laser beam was discussed in detail, along with its practical application and special forms of laser acupuncture therapy. Laser stimulation therapy was compared with classical acupuncture.

COURSES, CONT. FROM PAGE 27

Acupuncture Courses
This is a list of doctors, approved by the Society, who run courses in Great Britain. Most courses have run in the past had section 63 approval. However due to cuts in the NHS postgraduate training budget, this may have been withdrawn. Information on specific courses should be obtained from the course organiser concerned.

Dr A Campbell Royal Homeopathic Hospital London WC1
Tel: 01.8378833
Dr J Kenyon and Dr G Lewith 51 Bedford Place, Southampton
Hants SO1 2DG
Tel: 0703.334752
Dr AJR Macdonald 19 Richmond Hill
Bristol BS8 1BA
Tel: 0272.39477
Dr F Mann 15 Devonshire Place
London W1N 1PB
Tel: 01.9395757
Dr DLS Paine Orchard Paddock, Biggleswade
Northampton NN7 3QR
Tel: 0604.83006
In addition, the society holds courses at various centres throughout the country. Details from the BMAS Secretary.
Acupuncture and migraine

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Updated information and services can be found at:
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