Acupuncture and auricular cryotherapy for chronic headache in a patient with type III von Willebrand disease

A 42-year-old woman was referred to our pain therapy centre in April 2013 owing to a worsening migraine. She was known to have von Willebrand disease type III complicated by the development of alloantibodies to von Willebrand factor and previous anaphylactic shock during infusion of factor VIII/von Willebrand factor concentrates. The patient is being treated with a continuous infusion of recombinant factor VIII, when bleeding occurs.

Since the age of 14, the patient has received combination oestrogen and progestogen treatment to prevent the risk of bleeding related to ovulation. She has no other relevant medical history.

Migraine pain began at the start of 2007, and rapidly became severe (typically scoring 8–10 on the numerical rating scale (NRS) for a period of 72 h). The pain was treated with paracetamol, sumatriptan and rizatriptan in turn, without success. In view of her lifelong bleeding tendency, the use of non-steroidal anti-inflammatory drugs was avoided. Prophylactic therapy was started with propranolol and then with flunarizine, without benefit. The pain pattern was typical of migraine, and started from the 21st day of her menstrual cycle and stopped at the 28th day, when combined oestrogen and progestogen therapy was restarted.

In the past 3 years, the migraine pain has been reaching an NRS of 10, lasting for 7 days, and moreover, not limited just to the period of suspension of oestrogen and progestogen therapy. The patient has had more than three migraines each month, and thus has had pain for 10–15 days every month with an NRS of between 8 and 10 and little relief from the available treatment (triptans). Five to six episodes/year have required hospital attendance, admission and treatment with IV ketorolac and mannitol. CT and MR scans have been performed five times in the past 3 years and were always negative.

After the initial consultation, the patient was asked to register pain intensity, duration and drug consumption in a diary for 6 weeks before the beginning of acupuncture therapy; amitriptyline 10 mg/day was given and rizatriptan 5 mg was the rescue treatment. No change in hormone therapy was made because the risk of intraperitoneal bleeding during ovulation was considered too high.

TREATMENT

During the previous 6 years, the patient had followed a number of prophylactic lifestyle changes and pharmacological strategies without success. Topiramate was proposed but the patient refused it and then, as the NICE guidelines suggest, we decided to treat the patient by a Western-medical acupuncture approach, following the patient’s preferences. Reviews and reports support the use of somatic and auricular acupuncture for the treatment of migraine but as auricular Needling had to be avoided in this patient, we used superficial somatic acupuncture and auricular cryostimulation, after receiving informed consent from the patient.

Four somatic points were manually and bilaterally treated, LI4 (Hegu), TE5 (Waiguan), LR3 (Taichong), together with SP6 (Sanyinjiao), only when not menstruating. Hwato 0.2×13 mm needles were used and...
needling was superficial (2 mm depth) to avoid any muscular trauma.

Auricular points used were Zero, ShenMen, Thalamus and Migraine. These points were marked bilaterally and then stimulated using a cryotherapy apparatus designed for treating warts (Wartner Wart Remover, Omega Pharma, Australia) applied for 3–4 s.

The patient was treated weekly for 6 weeks, over two separate periods. We measure migraine pain using a self-reporting form (figure 1) that records the NRS score hourly during the attack. We plotted the weekly NRS versus time from the start of treatment. Pain data were recorded for 6 weeks before treatment and 52 weeks after the start of acupuncture.

**PATIENT OUTCOME**

No adverse effects of somatic needling or auricular cryostimulation were reported.

Headache-related pain was markedly reduced after starting treatment (figure 2) and the beneficial effect lasted for the follow-up period.

To our knowledge this is the first reported use of cryoauricular stimulation. Needle auricular stimulation is known to be useful for headaches, and the unique feature of this case is that, owing to the risk of severe bleeding, stimulation of the ear was made by lowering the temperature of selected auricular points. The sensation of cryostimulation was reported to be similar to that of a prick, but lasting longer. No skin changes were reported throughout the treatment. No bleeding was induced by superficial somatic needling.

Cryoauricular stimulation at selected auricular points could be considered as an alternative to classic auricular acupuncture, where the use of needles is unsafe. The result in this patient is encouraging us to extend this treatment to other people with chronic pain and bleeding tendency or where non-steroidal anti-inflammatory drugs are unsuitable.

**Figure 2** Weekly numerical rating scale (W-nrs) over time (bold line). The numbers of rescue treatments are plotted as columns with the number reported at the top of the column. Treatment periods of six weeks are marked with arrows.

**PATIENT OUTCOME**

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Acupunct Med 2014 32: 432-434 originally published online August 22, 2014
doi: 10.1136/acupmed-2014-010632

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