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DOI: [10.1159/000315042](https://doi.org/10.1159/000315042)**Acupuncture in Tension-Type Headache**

Antonio Granato, Fabio Chiodo Grandi, David Stokelj, Sara Musho, Gilberto Pizzolato

Department of Experimental and Clinical Medicine and
Experimental and Clinical Neurosciences, Stroke Unit,
University of Trieste, Trieste, Italy**Question**

Is acupuncture (a) more effective than no prophylactic treatment/routine care only, (b) more effective than 'sham' (placebo) acupuncture or (c) as effective as other interventions in reducing the frequency of headaches in patients with tension-type headache?

Data Sources

Cochrane systematic review of randomized controlled trials [1]. Databases searched were the Cochrane Pain, Palliative and Supportive Care Trials Register, the Cochrane Controlled Trials Register, Medline, Embase and the Cochrane Complementary Medicine Field Trials Register. The search was updated in April 2008.

Selection Criteria

Controlled randomized trials with a follow-up period of at least 8 weeks conducted on adult patients with episodic and/or chronic tension-type headache according to the International

Classification of Headache Disorders, 2nd edition [2], were included. Studies including patients with various types of headache were excluded. Control interventions considered were no treatment other than treatment of acute headaches or routine care, sham intervention by acupuncture, or other interventions (physiotherapy, massage or relaxation).

Treatment

Needle insertion at acupuncture points, pain points or trigger points, described as acupuncture.

Outcome Measures

Outcome measures were the proportion of responders (at least 50% reduction in headache frequency), number of headache days, headache intensity (evaluated by visual analog scale) and frequency of analgesic use. Data were extracted from 4 time windows: up to 2 months, 3–4 months, 5–6 months and more than 6 months after randomization.

Quality of Studies

The eligibility and data of the trials and the estimate of the quality of acupuncture were assessed by at least 2 reviewers. For the assessment of risk of bias, the Cochrane Handbook for Systematic Reviews of Interventions [3] recommendations were followed.

Main Results

Eleven trials with a total of 2,317 patients (median: 62; range: 10–1,265) were included. Two trials enrolled only patients with episodic tension-type headache, 2 only patients with chronic tension-type headache, and 7 both forms.

Table 1. Comparison of response and number of headache days in patients with episodic and/or chronic tension-type headache treated with acupuncture versus routine care only or treatment of acute headache only

Study or subgroup	Response			Number of headache days					
	acupuncture, n/N	no acupuncture, n/N	risk ratio M-H, random, 95% CI	acupuncture		no acupuncture		mean difference IV, random, 95% CI	
				n	mean	n	mean		
Up to 2 MAR									
Melchart et al. [4]	43/132	1/75	24.43, 3.43, 173.84	119	11.9 (8.3)	63	16.2 (7.2)	–4.30, –6.62, –1.98	
3–4 MAR									
Jena et al. [5]	294/629	11/636	2.68, 2.22, 3.23	553	5.42 (6.62)	570	8.83 (7.41)	–3.41, –4.23, –2.59	
Melchart et al. [4]	60/132	3/75	11.36, 3.69, 34.98	118	9.9 (8.7)	63	16.3 (7.4)	–6.40, –8.81, –3.99	

Values in parentheses denote SD. N = Total number; M-H = Mantel-Haenszel; IV = inverse variance; MAR = months after randomization.

Table 2. Comparison of headache intensity and analgesic intake in patients with episodic and/or chronic tension-type headache treated with acupuncture versus routine care only or treatment of acute headache only

Study or subgroup	Headache intensity					Analgesic intake				
	acupuncture		no acupuncture		std. mean difference IV, random, 95% CI	acupuncture		no acupuncture		std. mean difference IV, random, 95% CI
	n	mean	n	mean		n	mean	n	mean	
Up to 2 MAR										
Melchart et al. [4]						118	2.1 (2.6)	63	4.2 (3.5)	-0.71, -1.03, -0.40
3-4 MAR										
Jena et al. [5]	479	3.97 (1.97)	544	5.19 (1.88)	-0.63, -0.76, -0.51					
Melchart et al. [4]	119	2.9 (1.6)	63	4.6 (1.5)	-1.08, -1.41, -0.76	117	1.9 (2.9)	63	4.4 (4.1)	-0.74, -1.06, -0.42

Values in parentheses denote SD. std. = Standardized; IV = inverse variance; MAR = months after randomization.

Table 3. Comparison of response and number of headache days in patients with episodic and/or chronic tension-type headache treated with acupuncture versus sham acupuncture intervention

Study or subgroup	Response			Number of headache days		
	acupuncture n/N	no acupuncture n/N	risk ratio M-H, random, 95% CI	acupuncture n	no acupuncture n	mean difference IV, random, 95% CI
Up to 2 MAR (from ref. 4, 6, 7, 8)						
Subtotal	210/401	145/322	1.24, 1.02, 1.50	380	302	-1.56, -3.02, -0.10
	heterogeneity: $\tau^2 = 0.01$; $\chi^2 = 3.50$, d.f. = 3 ($p = 0.32$); $I^2 = 14\%$ test for overall effect: $Z = 2.18$ ($p = 0.029$)			heterogeneity: $\tau^2 = 0.37$; $\chi^2 = 3.46$, d.f. = 3 ($p = 0.33$); $I^2 = 13\%$ test for overall effect: $Z = 2.10$ ($p = 0.036$)		
5-6 MAR (from ref. 4, 6, 7, 8)						
Subtotal	206/401	146/322	1.18, 1.02, 1.37	372	298	-1.57, -2.97, -0.17
	heterogeneity: $\tau^2 = 0.0$; $\chi^2 = 0.86$, d.f. = 3 ($p = 0.83$); $I^2 = 0.0\%$ test for overall effect: $Z = 2.23$ ($p = 0.026$)			heterogeneity: $\tau^2 = 0.31$; $\chi^2 = 3.40$, d.f. = 3 ($p = 0.33$); $I^2 = 12\%$ test for overall effect: $Z = 2.19$ ($p = 0.028$)		

N = Total number; M-H = Mantel-Haenszel; IV = inverse variance; MAR = months after randomization.

Two trials compared acupuncture to routine care only or treatment of acute headache only with a 3-month follow-up. Both studies found significant benefits of acupuncture over controls for the outcomes of responder rate, headache frequency, pain intensity and analgesic intake (tables 1, 2).

Five trials (4 trials with a 6-month follow-up period, 1 with more than 12 months) compared acupuncture with a sham acupuncture intervention. A significant difference regarding response and number of headache days was found over a period of 6 months (table 3). Headache intensity was significantly reduced by acupuncture at 5-6 months after randomization. Regarding frequency of analgesic intake, a significant effect of acupuncture over sham control was found only in the first 4 months after randomization (standardized mean differences: 0.31 and 0.30, respectively).

Three of the 4 trials comparing acupuncture with physiotherapy, relaxation or a combination of massage and relaxation had methodological or reporting shortcomings. None of the 4 trials found a superiority of acupuncture. Better results were observed in the control groups for some outcomes, but these findings are difficult to interpret.

It is unclear whether the efficacy of acupuncture is different between patients with episodic and those with chronic tension-type headache.

Conclusions

The data evidenced clinically relevant short-term benefits of adding acupuncture to routine care only, and a significant efficacy of 'true' acupuncture over sham interventions. The comparison of acupuncture with other nonpharmacological treatments is difficult to interpret at present. Acupuncture could be a non-pharmacological tool for treating patients with episodic and chronic tension-type headache.

Comments

As the authors have pointed out, in our opinion, acupuncture could be a tool for the treatment of patients with episodic and chronic headache, especially if we consider that these patients are usually subjected to chronic abuse of drugs at a considerable social and economic cost.

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Fabio Chiodo Grandi, MD
 UCO di Clinica Neurologica, Stroke Unit – Ospedale di Cattinara
 Strada di fiume, 447
 IT-34149 Trieste (Italy)
 Tel. +39 040 399 4321, Fax +39 040 910 861
 E-Mail fabiochiodograndi@gmail.com