Acupuncture for depression and myalgia in patients with hepatitis: an observational study

Zeliha Kocak Tufan,1 Hüseyin Arslan,2 Fatih Yildiz,1 Cemal Bulut,1 Hasan Irmak,1 Sami Kinkil,1 Ali Pekcan Demiroz1

ABSTRACT
Background Depressive symptoms and myalgia are commonly seen in patients with chronic hepatitis B and chronic hepatitis C.
Objective To investigate the efficacy of acupuncture treatment on depressive symptoms and myalgia in patients with hepatitis.
Methods Of 44 patients with hepatitis screened for depression and myalgia, 28 were enrolled and included in the study. The main outcome measure for depressive symptoms was Beck’s Depression Inventory (BDI). For pain/myalgia, patients rated their pain on a scale from 0 to 10. Patients with a score greater than the cut-off point in either score were allocated to acupuncture treatment. The Chinese method of acupuncture was used. Treatment continued for 6 weeks.
Results At baseline, 17/44 patients (39%) had a BDI score ≥17 and 24 (55%) had a pain score ≥5. A total of 28 patients were allocated to acupuncture treatment, forming three groups: group 1, 13 patients with high BDI and high myalgia scores; group 2, 11 patients with low BDI score but high myalgia score; group 3, 4 patients with high BDI score but low myalgia score. Adherence to treatment was good; all patients completed the sessions and there were no drop-outs. Significant improvements in end-treatment BDI and in myalgia scores compared with baseline levels was found.
Conclusion Acupuncture seems to be a promising treatment for patients with hepatitis. Further studies are warranted in large populations to establish the therapeutic role of acupuncture.

INTRODUCTION
The estimated numbers of patients with chronic hepatitis C (CHC) and B (CHB) viral infections in the world are 2.7 million and 350 million, respectively.1 2 Depressive symptoms are common in these patient groups. Increased expression of specific proinflammatory cytokines has been shown to cause depressive symptoms in patients with hepatitis C virus. Additionally, treatment of the disease with interferon (IFN) may also cause or exacerbate depression.3 4 Reports suggest that depression in patients with CHB develops less frequently than in patients with CHC during treatment with IFN. However, a Turkish study found a high rate of psychiatric disorders and no significant difference between the two groups.5

Psychotherapy and antidepressant drugs are known to be useful but high rates of drop-out, lack of effect in some patients, intolerable adverse effects and relapse all reduce their effectiveness and patient compliance.6–8 In consequence, patients with depression may seek alternative treatments.

Acupuncture has long been used to treat emotional and psychological disorders, including anxiety, insomnia and depression.6 9 10 It may also be an alternative treatment of depressive symptoms in patients with CHB or CHC. In our patients with hepatitis, we have found that in addition to depression, myalgia is also common. Therefore, the objective of this study was to determine the prevalence of depressive symptoms and myalgia among patients with chronic hepatitis and to investigate the efficacy of acupuncture treatment.

PATIENTS AND METHODS
Setting The study was conducted in an outpatient setting in a 600-bed, tertiary care facility at Ankara Training and Research Hospital.

Patients Forty-four consecutive patients who were being followed up in the outpatient department for CHB or CHC infection, between December 2005 and April 2006, were recruited for the study and screened for depressive symptoms and myalgia. Exclusion criteria were pregnancy, presence of other psychiatric disorders, history of antidepressant use during the preceding 3 months, coagulation disorders and drug addiction. Each patient included signed an informed consent form. Ethics approval was obtained from the Ankara Training and Research Hospital Ethics and Projects Committee.

Design This was a prospective, uncontrolled observational study. The main outcome measure for depressive symptoms was Beck’s Depression Inventory (BDI).11 12 For muscle pain/myalgia, patients rated their pain on a scale from 0 to 10; 0 for ‘no pain’ and 10 for ‘the worst pain possible’.13 The BDI was completed by patients and scores counted by the clinician. Patients with a score greater than or equal to the cut-off point (17 for BDI and 5 for the myalgia scale), were referred for acupuncture treatment.

Acupuncture The Chinese method of acupuncture was used. The following points and needling depths were used bilaterally for depression and myalgia: Yintang (0.5 cun), LU9 (0.2 cun), CV 17 (0.2–0.3 cun), SP6 (0.5–1 cun), LI4 (1 cun), ST36 (1–1.5 cun), KI3 (0.5 cun) and LR3 (0.5 cun). Silver acupuncture needles

1Infectious Diseases and Clinical Microbiology Department, Ministry of Health Ankara Training and Research Hospital, Etlik Ankara, Turkey
2Acupuncture Outpatient Department, Ministry of Health Ankara Training and Research Hospital, Etlik Ankara, Turkey
3Microbiology Department, Ministry of Health Ankara Training and Research Hospital, Etlik Ankara, Turkey

Copyright 2010 by British Medical Journal Publishing Group.
(Kangnian KT1, Beigiao Town, China) were used. All needle diameters were 0.25 mm, and needle lengths were 25 mm. The duration of the needling was 20 min at each visit, without any needle stimulation or any other attempts to elicit de qi. The treatment comprised two visits a week for 6 weeks.

**Statistical analyses**

The BDI questionnaire was completed by all patients and the score calculated by the clinician. BDI and muscle pain scale were calculated at baseline and at the end of treatment in the sixth week. All statistical analyses were performed with SPSS 15.0 (SPSS, Chicago, USA). BDI and myalgia scores were presented as median (minimum–maximum) and values before and after treatment were compared by the Wilcoxon rank test. BDI and myalgia scores of hepatitis B and C groups were compared by the Mann–Whitney U test. In all analyses p values were two tailed and p≤0.05 was considered statistically significant.

**RESULTS**

Forty-four patients with hepatitis (18 male, 26 female) were screened for depressive symptoms and myalgia to determine their eligibility for acupuncture treatment. Mean age was 35 (range 23–54). Thirty-nine patients (89%) had CHB and four (9%) had CHC while one (2%) had both. Mean hepatitis duration was 4 years (range 1–25 years). Three of the total (6.8%) were receiving IFN treatment.

At baseline, 17 patients (39%) had a BDI score of ≥17 and 24 (55%) had a myalgia/pain score of ≥5. Twenty-one patients (48%) had mild to severe fatigue. Five (11%) had a history of antidepressant drug use previously. Median BDI scores of patients with CHB and CHC were 12 (range 1–33) and 23 (13–26), respectively. Median myalgia scores of patients with CHB and CHC were 4 (0–10) and 7 (5–8), respectively. The patient with both CHC and CHB had a BDI score of 37 and myalgia score of 8.

Of 44 patients with hepatitis, 28 were enrolled and allocated to acupuncture treatment, forming three groups:

- **Group 1:** 13 patients with both high BDI (≥17) and high myalgia scores (≥5)
- **Group 2:** 11 patients with low BDI score (<17) but high myalgia score (≥5)
- **Group 3:** 4 patients with high BDI score (≥17) but low myalgia score (<5).

Adherence to treatment was good. All patients completed the sessions and there were no drop-outs. Even those patients of group 2 who had low BDI scores at baseline were asked to complete the BDI score sheets at the end of the treatment course in order to test for any effect of acupuncture on their scores.

In groups 1 and 2, the median BDI and myalgia scores were decreased significantly (table 1). In group 3, although a decrease in the median BDI score was noted, the difference was not significant (p=0.068). The median myalgia score of the third group was similar before and after the treatment.

BDI and myalgia scores were also compared for patients with CHB and CHC, regardless of their groups, but the difference was insignificant (p>0.05). Baseline BDI scores of patients using IFN treatment were significantly higher than those of patients not using IFN (p=0.023) and two of three patients receiving IFN treatment were included in acupuncture treatment. However, BDI and myalgia scores at the beginning and end of treatment differed significantly only in the non-IFN group (p<0.001 for each).

Patients were asked at the start of the study and at the final follow-up about their attitude towards acupuncture. At the start of the study all patients welcomed the opportunity of receiving acupuncture treatment. At the end of treatment, 90% of patients reported a positive impression of the effect of acupuncture, 10% noticed no difference from the start. A drawback of treatment was that 69% reported being slightly afraid of the needles.

**DISCUSSION**

This was a prospective, uncontrolled observational study. Forty-four patients with chronic hepatitis were examined for the presence of depressive symptoms and myalgia, and 28 of these were allocated to acupuncture treatment. Overall attendance for treatment was good and the results were promising. To the best of our knowledge, this is the first study of the effectiveness of acupuncture for depressive symptoms in patients with chronic hepatitis.

It is well known that hepatitis C virus can directly affect brain function and may lead to mood disorders, anxiety and major depressive disorders. In our study, 17 patients (39%) had depressive symptoms. Although in this study patients with CHC had higher BDI and myalgia scores than those with CHB, the number of patients with CHC was too few for conclusions to be drawn.

IFN treatment is another cause of depression in patients with hepatitis and therefore the presence of a psychiatric disorder limits use of IFN in many patients. In our study we wanted to examine the effect of acupuncture on patients who were receiving IFN treatment. However, only three patients were using IFN and only two of those were allocated to acupuncture. Although we found significantly higher BDI scores in the two patients receiving IFN, the number was too small for a clear conclusion to be reached.

A meta-analysis of eight studies by Wang et al investigated the efficacy of acupuncture for depression. BDI and Hamilton Rating Scale for Depression were used in those studies for the scoring of depression. Similar studies of acupuncture efficacy on depression also used BDI scale. Other diagnostic and outcome measure tools used in different studies were RAND 36 Item Health Survey 1.0, PHQ-9, Diagnostic and Statistical Manual of Mental Disorders (DSM III or IV), International Classification of Disease and Chinese Classification of Mental Disorders. In our study, we used BDI for the assessment of depression and for evaluation of the efficacy of treatment. BDI forms are completed by patients themselves, making them easier to use; however, the scores were calculated by the doctors making bias less likely. Therefore, we recommend using BDI for such studies.

A number of studies suggest that acupuncture is better than medication. In their meta-analysis, Wang et al compared the efficacy of acupuncture with placebo in 477 depressive patients overall, and found a significant reduction in depression level at the end of treatment. Although we found acupuncture useful for our depressive patients, we did not compare its efficacy with medication or placebo, which is a limitation of our study.

Depressive patients may also present with painful symptoms, with a prevalence as high as 65%. Therefore, we also evaluated myalgia/pain together with depression in our study. Twenty-four patients (55%) had high pain scores, which was higher than the depression rate (39%) in our study group. Although group 1 (high BDI, high myalgia score) showed a significant decrease in the BDI score (p=0.002), group 3 (high BDI, low myalgia score)
The study was conducted with the approval of our hospital’s Ankara Training and Research Hospital Ethics Committee. Only reached near significance (p=0.068). Therefore, we suggest that those patients with concurrent depression and pain may receive more benefit from acupuncture. However, the patient numbers in the groups were relatively small, which prevents a clear conclusion.

There are some limitations to our study. First, no control group receiving any medication or a different type of acupuncture methodology was studied, so the results are limited to our study group. Second, the number of patients receiving IFN treatment was small, so we could not measure or compare the efficacy of acupuncture on IFN-induced depression. Further studies in large patient groups are warranted in order to confirm the therapeutic role of acupuncture in chronic hepatitis-related depression.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Value*</th>
<th>BDI-1</th>
<th>BDI-2</th>
<th>P1</th>
<th>Myalgia-1</th>
<th>Myalgia-2</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (n=13)†</td>
<td>Median</td>
<td>24</td>
<td>13</td>
<td>0.002</td>
<td>8</td>
<td>5</td>
<td>0.005</td>
</tr>
<tr>
<td>Range</td>
<td>17–37</td>
<td>7–26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2 (n=11)‡</td>
<td>Median</td>
<td>12</td>
<td>6</td>
<td>0.018</td>
<td>7</td>
<td>4</td>
<td>0.007</td>
</tr>
<tr>
<td>Range</td>
<td>1–16</td>
<td>0–12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3 (n=4)§</td>
<td>Median</td>
<td>18</td>
<td>12</td>
<td>0.068</td>
<td>0</td>
<td>0</td>
<td>NS</td>
</tr>
<tr>
<td>Range</td>
<td>17–26</td>
<td>8–14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall (n=28)¶</td>
<td>Median</td>
<td>17</td>
<td>10</td>
<td>&lt;0.001</td>
<td>7</td>
<td>4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Range</td>
<td>1–37</td>
<td>0–26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*BDI-1, baseline BDI score; BDI-2, BDI score at the end of the treatment; myalgia-1, baseline myalgia score; myalgia-2, myalgia score at the end of the treatment. †Patients with BDI ≥ 17 and myalgia score ≥ 5; ‡BDI < 17 and myalgia score ≤ 4; §BDI ≥ 17 and myalgia score < 5; ¶overall: all patients treated with acupuncture.

Acknowledgements Special thanks to our acupuncture team who are working with HA and the acupuncturist.

Competing interests None.

Patient consent Obtained.

Ethics approval This study was conducted with the approval of our hospital’s Ankara Training and Research Hospital Ethics Committee.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

Acupuncture for depression and myalgia in patients with hepatitis: an observational study
Zeliha Kocak Tufan, Hüseyin Arslan, Fatih Yildiz, Cemal Bulut, Hasan Irmak, Sami Kinikli and Ali Pekcan Demiroz

Acupunct Med published online June 7, 2010

Updated information and services can be found at:
http://aim.bmj.com/content/early/2010/06/04/aim.2009.002170

These include:

References
This article cites 21 articles, 0 of which you can access for free at:
http://aim.bmj.com/content/early/2010/06/04/aim.2009.002170#ref-list-1

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://www.bmj.com/company/products-services/rights-and-licensing/

To order reprints go to:
http://journals.bmj.com/content/subscribers

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/