Evaluation of acupuncture for cancer symptoms in a cancer institute in Brazil

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ABSTRACT

Introduction Acupuncture has been progressively included in the practice of mainstream medicine in recent decades. The State of Sao Paulo Cancer Institute is a public hospital established in 2008 and its acupuncture service follows the experience and model of several oncology centres in the USA, aiming to optimise the treatment of symptoms such as postoperative pain, oncological pain, neuropathic pain, nausea, vomiting, xerostomia and fatigue induced by chemotherapy. This paper describes the population given acupuncture treatment and the effects of the intervention on symptom management.

Methods One hundred and eighty-three patients from our service were enrolled in the study. Baseline and final symptom intensity was recorded using a visual analogue score (VAS) ranging from 0 to 10 cm, with a higher score meaning higher symptom intensity.

Results Fifty-four (29.50%) were receiving active treatment with chemotherapy and/or radiotherapy, 29 (15.85%) were receiving hormone therapy and 100 (54.65%) were considered to be in remission. The main symptoms were: oncological pain in 44 (24.04%), chemotherapy in 34 (18.6%), lumbar pain in 53 (28.96%) and chronic postoperative pain in 54 (28.4%). The mean (SD) initial symptom score was 7.04 (1.8), which was reduced to 2.56 (2.75) after treatment (p<0.001), an improvement of 63.6% in control of the symptoms. Further analysis of the data showed that the effect was similar in different indications for acupuncture treatment.

Conclusions Use of acupuncture may have improved symptom control in patients enrolled in this study.

INTRODUCTION

Complementary and alternative therapies are techniques and procedures that are not usually employed in mainstream medicine. They target the regulation of bodily functions, control of side effects and potentiation of the therapeutic effects of conventional medicine.1 Acupuncture and Traditional Chinese Medicine are progressively being included in the practice of mainstream medicine, especially in oncology. Some US oncology centres including the Dana Faber Center Institute, MD Anderson, Memorial Sloan Kettering Cancer Center and the Johns Hopkins Complementary and Integrative Medicine Service have started their own services in acupuncture.2 3

Many of these services reference important trials as the rationale for its use in emesis induced by myeloablative chemotherapy,4 acupuncture for xerostomia following radiotherapy for head and neck malignancies,5 6 postchemotherapy fatigue7 and pain control.8 9 Encouraged by these experiences, in 2010 the State of Sao Paulo Cancer Institute implemented an acupuncture service within the Rehabilitation and Internal Medicine Clinics of the Oncology Center. In this paper we describe the experience of the first year of this outpatient clinic and analyse the results achieved in symptom control to date.

METHODS

Patients were prospectively enrolled and included all adults who attended the outpatient unit of acupuncture at the State of Sao Paulo Cancer Institute for the treatment of chronic pain, nausea, vomiting and xerostomia due to cancer or to cancer-related therapies, and also cancer patients with pain not related to the cancer disease itself but who had not achieved satisfactory pain control with mainstream therapies. Patients were excluded from the study if their medical records were incomplete with missing documented baseline/final symptom intensity, number of sessions
administered or if the patient failed to return for the second scheduled session. All patients gave their written informed consent to be given such treatments. The trial protocol was approved by the institutional ethics committee and by the local review board.

**Intervention procedures**

Patients were kept on their usual treatment regimen and acupuncture was used as an add-on therapy. Acupuncture point selection was based on the service’s protocol where standard points are used for every symptom targeted plus tailored acupuncture points are added based on individual characteristics assessed by the attending medical acupuncturist. Acupuncture was performed by one of the three medical acupuncturists working at the clinic. Skin sites where acupuncture points are located were disinfected with 70% alcohol and sterile stainless steel disposable needles were used. Sessions were scheduled to be administered at least once and at most twice every week and consisted of a brief medical history, point needling and a 20 min rest with the needles placed.

Medical records concerning white blood cell count, platelet count and coagulation status as well as signs of oncological disease progression were reviewed to assure the safety of the procedures. Contraindications to performing acupuncture were as follows:

- Platelet count <20 000/mm³
- White blood cell count <1000/mm³
- Patients receiving anticoagulation treatment
- Sites where needling should be avoided:
  - Limbs submitted to lymph node dissection
  - Limb committed by lymphoedema or cutaneous regions showing signs of infections.
  - Areas near sites of unstable vertebrae (ie, post-surgery, metastasis) or cranial trepanation.
  - Ulcerations, surgical wounds, tumours or prostheses.
- Auricular acupuncture:
  - Patients with cardiac valve lesions, patients submitted to cardiac transplantation or with pacemakers.

The acupuncture treatment used, described according to the current STRICTA recommendations, was:

1. **Traditional Chinese Medicine (TCM) acupuncture**
2. **References listed in the ‘References’ section**
3. **Treatment varied from 4 to 14 sessions**
4. **Multiple needles used, ranging from 2 to 20**
5. **Nausea and vomiting: ST36, PC6. Xerostomia: LI 1, LI4, CV24, SP6, ST36, LR3, ST44, LU7. Post-thoracotomy pain: LI4, GB34, GB36, TE8. Lumbar pain: BL60, BL40, BL23, Yaotongxue. Oncological pain: miscellaneous points chosen according to its location and the meridians theory of TCM. All combinations were applied bilaterally unless in the presence of sites where needling should be avoided as stated in the previous session.**

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**Data collection**

Chart review was performed on the medical records of the patients treated during the first year of the acupuncture service in order to obtain demographic data such as gender, age, oncological disease diagnosis, status and treatment as well as the pain and chemotoxicity symptom intensity measured on a visual analogue scale (VAS) of 0–10 cm where a higher score means a higher perception of symptom intensity. Measurements taken into account were those performed at the beginning of the first session and after the last session had been administered.

**Statistical analysis**

Data extracted showed individual variation to be consistent with group variation and, since the distribution of VAS values was found to be normal, the mean difference between initial and final VAS was analysed using a paired t test performed with the Statistics Open For All (SOFA) statistics software (released under open source AGPL3 licence 2009–2011, Paton-Simpson & Associates). Subgroup analysis was performed according to the different indications for acupuncture treatment.

**RESULTS**

The medical records of the first 206 consecutive patients who presented to the acupuncture service were reviewed. This resulted in the exclusion of 23 from the study due to the criteria stated above, leaving 183 patients (134 women, 73.2%) between March 2010 and February 2011 for inclusion in the study. Of these, 54 (29.50%) were receiving active treatment with chemotherapy and/or radiotherapy, 29 (15.85%) were receiving hormone therapy and 100 (54.65%) were considered to be in remission. The mean (SD) age was 58 (12) years (range 23–91).
Most of the women were diagnosed with breast cancer (figure 1). The indications for acupuncture treatment were oncological pain (24.04%), chemotoxicity (18.6%), lumbar pain (28.96%) and chronic postoperative pain (28.4%). Figure 1 shows all the cancers diagnosed in patients who underwent the intervention with the number of patients per neoplasm.

All patients were undergoing mainstream drug treatment for pain and/or chemotoxicity (nausea/vomiting and xerostomia) prescribed by their attending physicians (oncologists and pain specialists). Mean (SD) initial symptom intensity, as measured on the VAS, was 7.04 (1.8). After the acupuncture treatment this was reduced to 2.56 (2.75) (p<0.001), an improvement of 63.6% in the control of the symptoms presented by this population.

The mean (SD) number of sessions per patient was 7 (5), and subgroup analysis showed that the effect on the relation between the initial and final VAS score was similar for different indications for acupuncture treatment, with no statistical differences in the response to treatment between pain conditions and chemotoxicities (figure 2).

No adverse events related to the acupuncture sessions were found on retrospective analysis of the charts.

DISCUSSION
Cancer patients are a very particular population. Facing the diagnosis and complying with the proposed treatments is a rough journey to travel. Every decision demands risk/benefit analysis and no medical intervention is without risk but, in this particular context, high-risk interventions with high morbidity rates seem to be more acceptable.

Once the usual treatments begin, many patients suffer a high burden of side effects. Some symptoms may be diminished with usual care, but sometimes the discomfort limits the use of anticancer therapies and this fact may in turn lower the remission rates.

Our study suggests that acupuncture may be beneficial for symptom control in patients with cancer. The study had limited statistical power owing to its simple design, lack of control groups, placebo intervention, follow-up or different instruments of outcome measurement other than VAS, and also by the fact that the VAS measurement used to analyse the effect was taken immediately before the first session and after the last session and this difference may be heightened by the rapport between the doctor and patient. Nonetheless, this paper aims to show the results obtained by the patients enrolled in the acupuncture clinic of our hospital. It was not our aim to provide evidence for the efficacy of the acupuncture intervention itself but to analyse the effectiveness of our service in symptom control.11 12

Since the 1970s acupuncture has been progressively included in the practice of mainstream medicine, and many studies describing the use of acupuncture in cancer patients have been conducted to provide evidence for the efficacy of acupuncture techniques.13 Many were accepted as valid proof of the efficacy of acupuncture, leading to the publication of the National Institutes of Health (NIH) consensus statement on acupuncture in 1997 declaring that ‘promising results have emerged, for example, the efficacy of acupuncture in adult postoperative and chemotherapy nausea and vomiting’.1 Nevertheless, many questions still remain on the efficacy of acupuncture.

This may be related to the fact that, in complementary medicine, respect for patient individuality, the practitioner–patient relationship and the environment in which the treatment is provided is of major importance. When applying a randomised controlled trial (RCT)—which is the gold standard for evaluating the effects of treatments—one must isolate and standardise the interventions being tested. In the context of complementary medicine where a ‘tailored package’ is the only—or at least the better—approach to achieve positive results, an RCT is prone to give the so-called ‘mixed results’ appearing in recent meta-analyses, as pointed out by Ernst and Lee.14

The International Society for Research in Complementary Medicine has recently drawn the attention of the medical community to an alternative view on how to measure the results of complementary medicine practices. Witt15 has addressed the differences between efficacy trials (explanatory trials), which determine whether an intervention produces the expected result under ideal circumstances, and effectiveness trials

Figure 1  Numbers of patients undergoing acupuncture with different cancers.

Figure 2  Visual analogue scale (VAS) scores before and after acupuncture treatment.
(pragmatic trials), which address the degree of beneficial effect under ‘real-world’ clinical settings. This trial has attempted to evaluate the effectiveness of our acupuncture outpatient clinic in symptom control.

CONCLUSION
In this study we performed an evaluation of the patients treated in the first year of the acupuncture clinic in the State of Sao Paulo Cancer Institute. Our goal was to assess a minimally important difference in terms of symptom control from a patient’s perspective. The use of VAS provided a glimpse of the actual benefits experienced by the patients during the mean period of 9 weeks they have been accompanied by our group (although they had scheduled sessions at least once a week, some did skip sessions).

Each medical acupuncturist had good experience with general acupuncture practice, especially in terms of pain control, but little experience with cancer patients and cancer-related symptoms, meaning that before the start of this outpatient clinic we as acupuncturists had seen few cancer patients. This first year showed an average improvement of 63.6% in relief of symptom intensity and it is possible that, if we are obtaining a real symptom control effect, this might increase with pooled experience in years to come.

Summary points
- Acupuncture was introduced to the Sao Paulo Oncology centre in 2010.
- We report on 183 of the first 206 patients seen.
- Symptom scores improved by 64%.

Competing interests None.

Ethics approval Ethics approval was obtained from the Committee for Ethics in Research of Sao Paulo State Institute of Cancer and the Committee for Ethics in Reasearch of the Clinics Hospital of the University of Sao Paulo Faculty of Medicine.

Provenance and peer review Not commissioned; externally peer reviewed.

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Acupunct Med 2013 31: 23-26 originally published online October 31, 2012
doi: 10.1136/acupmed-2012-010206

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