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THE EFFECTIVENESS OF TIPI IN THE TREATMENT OF HIP AND KNEE OSTEOARTHRITIS – A PRELIMINARY REPORT

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Osteoarthritis (OA) is a common painful inflammatory condition occurring mainly in the later half of life. Hip and knee are the joints mostly affected. Petiveria alliacea *(tipi) popularly known as an anti-rheumatic medicine, has been used by OA patients to relief pain.*

This one-week cross-over double-blind trial has preliminarly evaluated the analgesic effect of tipi tea in 14 patients with hip and knee OA. Imperata exaltata *(sape) was used as the Placebo tea. The pain assessments that were made at baseline and before the start of the second treatment period by treatment groups were comparable. While taking tipi or placebo tea patients experienced a statistically significant improvement in pain on motion and pain at night. The comparison between the improvements reported while on tipi and placebo tea, however, did not disclose any statistically significant difference. At the conclusion of the study 7 patients preferred tipi tea and 6 preferred placebo tea (NS). Two patients reported insomnia, one during placebo treatment and the other during tipi treatment.*

In this preliminary report both teas succeeded in the aim of relieving pain.

Key words: osteoarthritis – hip/knee – *Petiveria alliacea* – pain

Osteoarthritis (OA) is a common painful inflammatory condition occurring mainly in the later half of life. Treatment of OA is symptomatic and includes physical measures as well as the administration of non-steroidal anti-inflammatory drugs (NSAID) and analgesics (Barnard-Jones et al., 1986). Unfortunately, the use of NSAID and analgesics is limited by adverse reactions, mostly affecting the gastro-intestinal tract.

It is largely well recognized the presence of an alternative medicine not based in biological and pharmacological principles in most parts of the country.

Petiveria alliacea, popularly known in different parts of the world as tipi, pipi, raiz de Guiné, herbe aux pouples de Guine, anamu, epacina or hierba de toro mazote, is a plant 1 m high with tiny branches, oval leaves and strong garlic odour. It is originally found in Africa and Latin-America and commonly used as topic anaesthetic, toothache, abdominal pain (root), antipyretic and an anti-rheumatic drug (small branches and leaves prepared in a form of tea) (Correa, 1975; Lainette & Brito, 1979).

A double-blind crossover randomized controlled trial was designed to compare the effectiveness of tipi, a popular analgesic tea with placebo tea (*Imperata exaltata*, popularly known as Sape) in the treatment of hip and knee OA.

MATERIALS AND METHODS

Patients were randomly selected from the OA outpatient clinics at São Paulo Hospital. Each patient gave informed consent before entering the trial. All patients had a clinical and radiological diagnosis of primary hip and knee OA.

A one week double blind cross-over design was used. Patients were requested to stop taking other antiinflammatory and analgesic

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medications 1 week prior entering the study. A 1 week washout period was employed before the cross-over. If additional analgesic were required, paracetamol was given and the amount used was recorded. No patient had physical therapy during the trial.

The tipi tea should be prepared accordingly to its popular use, i.e., 9 g of either tea were added to 600 ml of water that had just been boiled. After filtering the tea, 200 ml of this solution should be taken orally 3 times a day. The procedure for preparing the placebo tea was exactly the same. Despite having a slight difference between the teas regarding their colour and taste, the physician and patients were not aware which was the tipi tea.

Patients were assessed on a regular basis (week 0, 1, 2 and 3) by the same blinded physician. The following outcome measures were recorded: (1) pain on motion, pain at rest and pain at night each one assessed by a numerical rating scale (NRS) from 0 "no pain at all" to 10 "unbearable pain; (2) 15-meter walking time; (3) Mactar patient preference questionnaire, considering the top 5 activities of daily living mostly affected by OA (Tugwell et al., 1987); (4) Volunteered reporting of adverse effects following general inquiry. At the end of the trial patient preference for one or other treatment was sorted.

Comparisons between start and end of each treatment period were made by a "t" test for paired data. A "t" test for paired data was also used to compare differences between periods.

RESULTS

In this preliminary report, of the 14 patients who have entered the study, 6 were assigned to receive first placebo tea and 8 tipi tea. One patient was withdrawn at the end of the first treatment period for reason unrelated to treatment. Thirteen patients, therefore, were available for analysis.

The clinical and demographic characteristics of the patients are shown in Table I. The clinical assessments that were made at baseline and before the start of the second treatment period by treatment groups (tipi firstly, placebo secondly and vice-versa) were comparable, as well as, the pain assessments obtained before the start of each treatment period (Table II). Pain assessment for those patients who completed both periods of the cross-over study are presented in Table III.

TABLE I

Clinical and demographic characteristics of the 14 OA patients. Values are expressed as mean + standard deviation

Sex (male/female)	2/12
Age (years)	67.5 ± 9.2
Functional class (I/II)[a]	3/11
Morning stiffness (min)	15.5 ± 18.9
ESR (mm/1st hour)[b]	12.6 ± 4.1
Haemoglobin (g/dl)	12.3 ± 1.0

a: functional class according to the Steinbrocker criteria (Steinbrocker et al., 1949).
b: erythrocyte sedimentation rate.

TABLE II

Pain scores at the start of each treatment period. Values are expressed as mean + standard deviation

	Hip and knee OA patients (N = 13)		
Outcome	Tipi period	Placebo period	Prob.[a]
Pain at rest	4.46 ± 2.50	4.69 ± 2.17	NS
Pain on motion	6.38 ± 1.94	6.30 ± 1.93	NS
Pain at night	7.00 ± 2.16	6.76 ± 1.92	NS

a: intergroup comparison; NS: not significant.

At the conclusion of the study 7 patients preferred tipi tea and 6 patients preferred placebo tea. Two patients reported insomnia, one during placebo treatment and the other during tipi treatment. No analgesics or NSAID were taken during the study period.

DISCUSSION

Several previous clinical studies have been published evaluating the most different analgesic and NSAID, however, as far as we know this preliminary report constitute the first cross-over clinical trial evaluating the tipi tea, taken as an analgesic medicine in the treatment of hip and knee OA.

TABLE III

Changes in outcome measures between end of the trial and baseline by treatment group

Outcome Assessment	Tipi (N = 13)		Placebo (N = 13)		Comparison between groups Prob.
	Change	Prob.	Change	Prob.	
Pain at rest	– 0.92	NS	– 1.15	NS	NS
Pain on motion	– 1.77	*a*	– 1.62	*a*	NS
Pain at night	– 2.92	*a*	– 2.23	*b*	NS
15-mwt (sec)[c]	– 0.69	NS	– 0.69	NS	NS
Mactar (PPQ[d]	18.92	–	14.62	–	NS

a: P $<$ 0.001; *b:* P $<$ 0.01; *c:* 15-meter walking time; *d:* Mactar Patient Preference Questionnaire (Tugwell et al., 1987); NS: not significant.

In the present analysis, in which 14 hip and knee OA patients were initially enrolled, we found no statistically significant evidence that tipi tea was superior to placebo in reducing the severity of pain at rest, on motion and at night. The mean reduction of pain on motion and pain at night scores at the end of each 1 week period was marginally larger for tipi treated patients than for placebo treated patients.

The lack of statistically significant difference between the 2 treatment groups with respect to pain assessment deserves a further comment: the possibility of a type II error due to the small sample evaluated can not be excluded (sample size required to show a 30% pain reduction over and the above the placebo effect = 22 patients; $\alpha = 0.05$ and $\beta = 0.20$). On the other hand, this argument is counterbalanced by the fact that at the end of the trial the treatment groups were mirrored in the patients preferences, 7 patients preferred tipi tea and 6 patients preferred placebo tea.

Although these preliminary results have failed to show any significant difference between treatment groups, it is important to emphasize that both teas succeeded in the aim of relieving pain. In developing countries, where the socio-economic status of most patients constitutes a limitation for the regular use of the trade-market drugs, this observation may have a great impact in the short-term treatment of OA patients.

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