Effects of Aloe Vera in Local Massage Oils in Alternative Medicine for the Treatment of Joint Pains: A Double Blind Study

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Abstract

**Introduction:** Aloe vera has been reported to have effects upon skin, joint pains and diabetes but without scientific evidence. It has never been studied in isolation as a single drug. Our study was a small study to study the symptom lowering effects of Aloe Vera gel when used in combination with a topical massage oil.

**Patients and Methods:** A prospective double blind interventional study was conducted with patients of osteoarthritis knee randomized in two groups of patients (20 in each). Both groups were given topical oil for massage over the affected joints. They were provided oral analgesic tablets in fixed numbers and during follow up Visual analogue score and number of tablets used was taken as measure of alleviation of symptoms.

**Results:** Both groups comprised of 20 subjects each and had similar characteristics for age/sex/laterality of joint involved. The epidemiological characteristics of the groups were similar. Group – A used Topical Massage Oil without addition of Aloe Vera Gel while Group B used the same oil with addition of the gel. It was observed that patients who had been given massage oil with addition of Aloe Vera gel showed less use of oral analgesics during study period and their VAS scores were less as compared to the Group – A who were using the same massage oil but without Aloe Vera Gel.

**Conclusion:** Aloe Vera as local application seems to improve pain relief and decrease oral analgesic use in patients of osteoarthritis knees who are being treated with local massage oils of alternative medical origin. Further studies need to be done to reach a conclusion.

**Key Words:** Massage Oil, Aloe Vera, Analgesia.

Introduction

Aloe vera has been used for centuries due to the beneficial effect it has on the skin. Aloe vera is said to encourage skin rejuvenation, healing of wounds and treatment of sunburn. It is also used to help in relieving arthritic pain, improving blood circulation, reduce scarring and shows anti-inflammatory properties. Some ancient sources have advocated its oral and local use in joint disorders.

Extracts from Aloe vera are widely used in the cosmetics and alternative medicine. Frequently it is proposed to have rejuvenating, healing, or soothing properties. Scientific evidence of the effectiveness or safety of Aloe vera extracts for these uses are lacking and what positive evidence is available is frequently contradicted by other studies. Aloe vera massage oil is claimed to have healing qualities which makes it a good choice to use on its own, or to include when mixing a massage oil or preparing a carrier oil blend for traditional massage. Aloe vera leaves contain phyto-
chemicals such as acetylated mannans, polymannans, anthraquinone C-glycosides, anthrones, other anthra-
quinones, such as emodin, and various lectins. There is some preliminary evidence to suggest that oral
administration of aloe vera might be effective in redu-
cing blood glucose in diabetic patients and in lowering
blood lipid levels in hyperlipidaemia. The topical
application of aloe vera is said to soothe aching joints
but does not seem to prevent radiation-induced skin
damage. Feily and Namazi argue that evidence regard-
ing wound healing is contradictory. Some review has
found that Aloe has not been proven to offer protection
to humans from sunburn. A 2007 review of aloe vera use
in burns concluded, “cumulative evidence tends to support
that aloe vera might be an effective intervention for use in burn wound healing for first- to second-degree burns. Very little scientific
work of similar nature is available for joint disorders.
A 2014 Cochrane review found no strong evidence for
the value of topical application of aloe vera to treat or
prevent phlebitis caused by intravenous infusion. Many traditional massage oils have been used since
long time to alleviate joint pains and many contain
Aloe Vera. No known effect of aloe vera has been
known in recent times upon joint pains it may-be
possible that because of its effects on the skin Aloe
vera maybe facilitating, augmenting or potentiating
the effects of other aromatic oils in the traditional medi-
cine. A small scale interventional study was designed
to see the effect of addition of Aloe Vera to such pre-
paration for use in joint pains. The purpose was that
the effect if any should be documented.

Materials and Methods
A popular off the shelf commercially available mas-
sage oil was obtained. Aloe vera gel was added to half
of the packs [Composition of the Branded Oil: Staff
Tree seed Oil(Malkangni), Pheno Greek Oil(Maithee ),
Nigel Satiwa Oil (Kalwangee), Turpentine Oil, Col-
chicil – Cormus Oil(Soranjan Talkh) and Fish Oil].
Weight / weight. Labels were removed from all the
packs and all were labeled numerically as 1, 2, 3, 4
blinding the user and the prescriber to the original
formulation of the product. All the subjects were coun-
sceled and were told about the intent of the study culmi-
nating the process in a written formal consent. Forty
patients were inducted through Orthopedic and med-
cal Outpatients who came with bilateral knee pain of
more than 6 months standing, where the age was abo-
ve 45years and there was no history of trauma to the
limb involved. Gender bias was avoided strictly. In
order to control confounding variables only cases with
osteoarthritis knees were included. The amount of pain
was measured before treatment using a VAS (visual
analogue score). Every patient was given 20 tablets of
diclofenac sodium 50 mg) and a bottle of massage oil
for application to the painful joint twice daily. They
were asked to use oral analgesics twice daily till the
pain subsides. They were asked to resume it only if
pain recurred. They were followed up for 3 weeks and
in the end all patients were evaluated by one independent observer (IA). A record was taken of VAS score
again and the number of analgesic tablets consumed.

At the conclusion of the data collection the codes
were broken and the data was compiled into two groups
by the statistician to compare the usage of oral
analgesics during the treatment period and VAS score.
It was presumed that the two groups would show diffe-
rences between analgesic consumption and VAS score
because of addition of Aloe Vera gel in one group and
none in the other.

Results
Both groups comprised of 20 subjects each and had
similar characteristics for age/sex/laterality of joint
involved. The epidemiological characteristics of the
groups were similar (Table 1). All the subjects com-
pleted the treatment regimen of 3 weeks and kept com-
ing for follow up visits. At the end of the study all the
data was analyzed by the statistician to see the diffe-
rences between the usage of analgesics by each group
and the (pre-treatment vs post-treatment VAS scores.

Group – A comprised of 14 males and 6 females
while Group – B had 6males vs. 4 females. The invol-
vement of right sided knees was 8&6 in groups A&B
respectively. They had all used the oil with addition of
Aloe Vera gel before blinding labeling was done. In
All 13 patients in both groups had 13 bilateral involve-
ments. The usage of analgesics per week was low in
group B but the difference between the groups was
low. The difference in VAS score was apparent but the
Group – B patients reported less overall pain than the
Group – A at the conclusion of the study. It was
observed that patients who had been given massage oil
with addition of Aloe Vera gel showed less use of oral
analgesics during study period and their VAS scores
were less as compared to the Group – A who were
using the same massage oil but without Aloe Vera Gel.
There were no dropouts or refusal to continue treatment by the subjects. Patients in both groups complained of local irritation and hearth upon application of the oil. No allergic reactions were reported.

**Discussion**

Usage of Aloe vera has been proposed by many sources since ancient times to cure joint pains but no scientific study has been done as yet. It had been used orally as well as oil/gel to apply locally to joints.9–11 The usage has been popularized by many alternative medical sources through internet and even before that there have not been many publications of isolated usage of the drug to treat arthritis symptoms. Our study has been a very preliminary inquiry to substantiate its effect if any when used in combination with other aromatic oil ingredients for local massage in cases of primary osteoarthritis of the knees. Aloe may alter blood sugar levels if taken orally apart from its effects upon skin and joints.3,7 Caution is advised when using herbs or supplements concomitantly that may also alter blood sugar. Blood glucose levels may require monitoring, and doses may need adjustment. Because aloe contains estrogen like chemicals, the effects of other agents believed to have estrogen-like properties may be altered.10 Aloe Vera may also interact with anesthetics; antifungals; anti-inflammatory and many more because of its reported drug interactions with many groups of medications.11–13 Because of low level of evidence available to support such findings very little scientific work is accessible to explain the interactions and effects of Aloe Vera in treatment of joint disorders. It has been used both orally and as local application. The addition of Aloe Vera gel to the commercially available massage oil has been tried in this study in order to see pure effect of local application of Aloe Vera as an additive. Our quest was to see the effect of the drug isolated from confounding variables. Only cases with one disorder were included i.e. osteoarthritis knees. Same commercially available massage oil was selected for use by all patients. The only difference between the two groups was addition of Aloe Vera gel to the same oil. The progressive decline in usage of oral analgesics reflects upon the beneficial effect of the oil upon joint pain. VAS also fell progressively in both groups. The groups only differed marginally in end point evaluations of analgesic usage and VAS. The effect of the oil in the group B seems to have better control of pain than group A. Our presumption is that Aloe Vera in some way can be the factor responsible. It may have anti-inflammatory properties or may be augmenting the same effect in other ingredients in the massage oil. There is another hypothetical possibility that (since it is known to have effects upon skin) the improved efficacy of the massage oil maybe due to increased local absorption of the aromatic oils. Nothing more than this presumption can be offered as our study model is deficient in studying individual ingredient of the oil. No drug interactions are known for these ingredients. We have deliberately avoided such extension of the study due to lack of local facilities and the funding at present. However we do not deny that further work on the subjects looks promising.

**Conclusion**

Aloe Vera as local application seems to improve pain relief and decrease oral analgesic use in patients of osteoarthritis knees who are being treated with local massage oils of alternative medical origin. Further studies need to be done to reach a conclusion.

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