International Research Journal of Medical Sciences _____ ISSN 2320 –7353
Vol. **1(9),** 1-5, October **(2013)** *Int. Res. J. Medical Sci.*

Relieving and Halting the Progress of Cervical pain by Therapeutic Oil: A Secondary Prevention

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Available online at: www.isca.in, www.isca.me
Received 24th September 2013, revised 10th October 2013, accepted 25th October 2013

Abstract

Various medicinal plants and their extracts are extensively advocated by unani physicians for the alleviation of pain. A range of therapeutic oils are available and indicated for the management of pain. Dill seed Oil is one of the best drugs used for the alleviation of musculoskeletal and neuralgic pain. Conventional pain relieving regimen available these days are only short term. Massage with Dill Seed Oil was tested in present study for its efficacy in halting the progress and relieving the neck pain. Present study was determined from a sample size 50 over three 3 months duration. Massage was done with test drug (Dill Seed Oil) on neck for 20 minutes on alternate day in first week and twice a week there after for another 11 weeks. The mean duration of neck pain, VAS (Visual Analogue Score) score, NS(Neck Stiffness) grade and RNM(Restriction of Neck Movement) grade at baseline were approx 2½ years, 6, 3 and 2 respectively; these were completely relieved in a mean of 9 sittings. Surprisingly it was observed that no patient have reported reoccurrence during follow up. This study suggests that Dill Seed Oil is very effective and safe in relieving and halting the progress of neck pain and associated symptoms.

Keywords: Cervical pain, massage, dalk, secondary prevention, Unani system of medicine.

Introduction

The pain relief is most frequent and probably the only cause for which the sufferer pay the maximum. The issue of pain treatment is an extremely urgent health and socio-economic problem. Cervical pain involves many aspect of a person's life namely somatic, psychological and social. The issue of pain treatment is an extremely urgent health and socio-economic problem. Pain, in acute, recurrent and chronic forms, is prevalent across age, cultural background, sex, and costs. Hence relief from pain is mandatory for social, psychological, economical and medical reasons. Because the worst we can expect originates from the pain. Since the pain has always been a major problem for humanity so physicians of every time have been engage in solving the problem.

Dill Seed Oil: Paste of dill is strongly advocated by Ibn Sina for the alleviation of pain. *Shibbat* is an Arabic word and it is commonly known as "Dill" (English), "Soya" (Urdu) and "Sowa" (Hindi). Botanical name of *Shibbat* is *Anethum sowa* kurz[1]. *Dill Seed Oil* is obtained from dried seed of dill[2]. Dill is temperamentally *Har* (2°)-*Yabis* (1°) drugs and strongly advocated by number of *Unani* Physicians in Neuralgic and Muscular pain[1-13].

Prevalence of Cervical Pain: Threats (in terms of disability) caused by long standing cervical pain is increasing rapidly. Cervical pain affects a person's life both at home and at work place. Its ever increasing prevalence, especially in productive population results in absentees and sick leaves and increased sedentary population in society is placing a huge burden on families, society, health care providers and ultimately on nation's wealth. It is estimated that 67% of individual suffers from neck pain at some stage of their lives. Whereas it is 10.1% for high-intensity and low-disability neck pain and 4.6% for significantly disabling neck pain[14]. Life time prevalence of neck pain varies from 26% to 71% with a reported high rate in females (12% compared to men's 9%)[15], in advance age, in people having more job demands and in certain professions and in cold regions or weathers.

The current (research) incidence of neck pain in Bangalore has been estimated as 35% and the median age as 27 years and it ranges between 18-52 years[16]. Reports show that 50 million Americans suffer from chronic pain and the annual cost for the care of chronic pain in US alone is estimated as high as 100 billion. Back pain and neck pain contribute upto 60% of this expenditure[17]. A large population of health care practice/system is devoted to the care of neck pain, and millions of dollars are spent annually on treatment, lost wages and compensation.

Despite of the magnitude, costs, and morbidity of neck pain, surprisingly little researches have evaluated treatments for patients with neck pain[18]. There is no satisfactory remedy for this ailment yet. Prevailing management i.e. use of NSAIDs, pain killers, muscles relaxants and soft cervical collars have their own limitations and dependency. Soft cervical collars are commonly recommended, but evidences suggest that they may delay the recovery. Soft cervical collars prevent the person from

their duties by restricting the neck movements; which further worsen the condition. So there is a challenging task for the entire medical fraternity to restore the ability of a sufferer to do things that have been restricted by pain; by relieving it.

Complimentary and alternative medicine's (CAM) interventions have been increasing in popularity over the past two decades due to the dissatisfaction with main stream western/allopathic medicine and desire of patients to be more actively involved in their own medical decision making[19]. USM is among CAM and it has effective and safe way to handle the neck pain. So a classic and popular regimen of USM i.e. massage with *Dill Seed Oil* was tested in present study for its efficacy in halting the progress and relieving the neck pain.

Material and Methods

Present study was conducted at Regimenal Therapy Unit (RTU) of Hospital, National Institute of *Unani* Medicine (NIUM), Bangalore. After getting ethical clearance from Institutional Ethical Committee (IEC, NIUM) clinically diagnosed cases of neck pain were included in the study.

The present observational study was determined from a sample size fifty (47 male and 3 female) over a three (3) months duration. Verbal and written consent were taken before conducting the procedure. A total of 25 massage sittings were designed in 12 weeks (3 months) study duration. Massage with *Dill Seed Oil*[3,9] was done on neck for 20 minutes on alternate day in first week and twice a week there after for another 11 weeks. The area to be massaged was exposed properly and patients were made to sit on the chair with erect back. Massage was performed with the fingers and palms of both the hands. Approximately 20 ml oil was consumed per sitting. Female masseurs were asked to do massage for female patients. Improvement in subjective and objective parameters were assessed on every sitting, at the end of the treatment and fortnightly for 1 month in follow up period. This study stretched from January 2011 to May 2011.

Drug preparation: The test drug i.e. *Dill Seed Oil* was prepared in NIUM pharmacy. Chamomile oil was used as based oil in a ratio of 4:1 with dill seeds. Oil was prepared according to Classical *Unani* method i.e. in the above said ratio the dill seeds were boiled in Chamomile oil approximately for 20 minutes, until the colour of dill seeds changed to brownish black or seeds split into two parts. These two indicate that the oil has been released from the seed into base oil[20].

Dill seeds were purchased from the market and were identified by the *Unani* expert before the above process. After preparing the oil it was kept in dried and clean plastic bottles. A sample of procured dill seeds was kept for future reference.

Outcome assessment and statistical analysis: Outcome assessment: The main aims in the management of neck pain are to alleviate symptoms and to return the person to their pre-pain level of functioning. The assessment of outcome was carried out by the following parameters. i. Clinical assessments (subjective parameter) ii. Visual Analogue Scale/VAS (objective parameter).

The clinical assessment was done before starting the massage procedure and then on every sitting till the end of the study protocol duration. The clinical assessment was based on the fluctuation in severity of sign and symptoms. The clinical assessments included neck pain (as a main), stiffness of neck muscles and restriction in movements of neck.

Assessment of the severity of pain was recorded with the help of internationally accepted and best objective scale i.e., VAS[21].

Visual Analogue Scale: At every visit, pain was assessed by VAS. Patients after initial training in reading VAS scale, were verbally asked to mark (by finger) on the colour pattern (arranged from lighter to dark colour) of the scale. Lighter colour corresponds to the lowest and darkest one to the highest magnitude of the pain. As the colour patterns gradually become darker; the pain magnitude increases accordingly. Apart from colour pattern / shade numerical numbers 1 to 7 was also marked on the scale. Gradually increasing number (1-7) on scale represents the increase in magnitude of pain as well. Where 1 represents no pain and 7 represents worst imaginable pain.

As all the other parameters of clinical assessment differ in severity from subject to subject hence an arbitrary grading of these parameters was improvised for appropriate assessment and statistical evaluation of various symptoms so that efficacy of the procedure at every sitting and at the end of the study could be evaluated.

Neck Stiffness (NS): Sensation of stiffness is also a vital point; often complaint by the patient of neck pain. Four grades were designed to assess the severity. i. 1 = barely perceptible, ii. 2 = mild, iii. 3 = moderate, iv. 4 = severe.

Restriction of Neck movements (RNM): This is one of the chief complaints associated with the neck pain which hinders the routine activity and occupational duties. Four grades were designed to assess the restriction: i. 1 = partial active movement, ii. 2 = passive range of full movement, iii. 3 = passive range of partial movements, iv. 4 = no movement at all (either active or passive).

Follow up: Once the patients relieved of the pain completely; he/she was asked for follow up fortnightly for 1 month. Same pain assessment technique i.e. VAS was used to assess the pain throughout the follow up duration of 1 month as per protocol. Regular assessment of pain scores and of vital signs are essential for effective and safe pain management.

X rays cervical spine: Both the views i.e. X-ray cervical spine – Antero-posterior (AP) and lateral (Lat) were advised to exclude the suspected cases of cervical trauma, fracture and

dislocation.

Data management: Analysis: Data were analyzed statistically. Only the patients completed the full duration of the study and followed the protocol were included in statistical analysis. Z test was used to test the statistical strength of the results.

Adverse effects documentation: No adverse effect or reaction was reported during or after the procedure of massage throughout the whole study period by any patient.

Recurrence: No recurrence of neck pain was reported by any patient during follow up period.

Documentation: The consent form and Case Report Form (CRF) were submitted into the Dept. of Preventive and Social Medicine, NIUM, Bangalore, after completion of study.

Results and Discussion

A total of fifty (50) patients were enrolled in this study; Out of which 43 were male and 7 were female. All the patients were from the Bangalore city especially from areas in the vicinity of NIUM hospital. In this study three parameters were taken in to account; neck pain as a main complaint, stiffness of neck and restriction in neck movement as secondary. Pain was assessed by VAS grading from 0-7, NS and RNM were graded arbitrarily from 1-4 according to severity (there grades are given in material and methods). In present study recruited patients were with a varying duration of complaints of neck pain, NS, and RNM. The mean duration of neck pain of 50 patients were 2½ years. Similarly the mean grade of VAS score were 5.8(≈6), the mean grade of neck stiffness were 3.14(≈3) and the mean grade of restriction in neck movement were 1.94(≈2) respectively. All the above three symptoms namely neck pain, NS and RNM completely relieved in a mean of 9.32(≈9) massage sittings. Surprisingly it was observed that no patient have reported reoccurrence during follow up.

Discussion: 50 patients of either sex (47 male and 3 female) were recruited, 25 sittings of massage were scheduled over three months. For the first week sitting schedule was on alternate day and twice a week for subsequent 11 weeks. In the *Unani* literature, principles of the massage process are not described precisely, so in the present study one motive was to standardize the practice. For this purpose timing and pressure imparted were arbitrarily chosen. The time was kept 20 minutes in each sitting. In the present study main emphasis was to evaluate the effects of massage with *Dill Seed Oil* in alleviating the neck pain and its associated symptoms. Only neck stiffness and restriction of movements with neck pain were considered particularly and other associated symptoms were taken into consideration as supplementary or secondary. In chronic neck pain management several alternate regimens are in vogue. On Meta analysis it was found that no regimen is better than placebo on long term basis and for acute pain. Some Meta analysis finding reports shows no conclusive benefits of any therapy on neck pain. Some studies have documented statistically significant but no clinically significant effects of any therapy has been observed in relieving neck pain[2,19,22-27].

Medical practitioners are becoming gradually aware of the potential of medicinal plants in successfully treating and in significantly benefiting the patients with pain and associated problems coming to them. In this study it was observed that, the present oil prepared from the Dill Seed (*Dill Seed Oil*) not only relieved the neck pain but also associated symptoms. Surprisingly it was observed that no patient have reported reoccurrence during a follow up of one month. The *Dill Seed Oil* was found highly significant both statistically ($p<0.0005$) and clinically in relieving neck pain and associated symptoms. It surely have both preventive as well as curative role in management of chronic and acute neck pain.

This study suggests that massage with *Dill Seed Oil* has clinically important benefits in alleviating the pain for the subject with acute or chronic neck pain. Conducting further consolidating studies on the subject it may be given its due place in the management of acute and chronic neck pain. It seems reasonable that this regimen has clear cut edge over other regimens and would save the patients of neck pain from adverse effects of analgesics and NSAIDs on long as well as on short term basis.

Conclusion

Massage with medicated oil holds an important place as a therapeutic modality in *Unani* System *of* Medicine. Preventive and therapeutic massage with therapeutic oil is the mainstream treatment of *Unani* medicine since centuries and it is being indicated for range of musculoskeletal diseases since then. By definition "Massage is a type of exercise practiced with palm and digits by a skilled person on the body surface in varieties of ways to dissolve the morbid matters and to assist the *quwa* (faculties) for therapeutic and preventive purpose[28,29]." The results of this study revealed an advantage of massage with *Dill Seed Oil* and was found highly safe and significant both statistically ($p<0.0005$) and clinically in relieving neck pain and associated symptoms. It has both preventive (secondary prevention) as well as curative role in management of chronic and acute neck pains. Further more study on larger sample size may be done to maximize and rationalize the result on large scale.

Acknowledgement

I am grateful to the institutional ethical committee, NIUM, Bangalore to allow me for this research. I am greatly indebted to my guide Prof. M Zulkifle, Dr. Abdul Haseeb Ansari and Dr. Arish Mohammad Khan Sherwani, whose encouragement, supervision and support from the preliminary to the concluding level enabled me to develop an understanding of the subject. I

am heartily thankful to Dr. Zahid Kamal & RTU staff for their valuable co-operation and to Dr Aisha Perveen for their suggestion & support in compiling this paper. Authors acknowledge all the scholar, writer and scientist whose reference has been cited in this review article.

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