

MUSTARD OIL – GARLIC COMBO MASSAGE- AN EFFECTIVE KNEE PAIN HOME REMEDY

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Abstract

Background: Knee pain is one of the most prevalent disorders affecting the quality of life of elderly age group and geriatric population. This can occur due to numerous reasons including obesity, constant weight bearing rheumatic diseases, rheumatoid arthritis, reactive arthritis as well as osteoarthritis that may lead to swelling, redness, warmth, weakness, tenderness, and stiffness of the joint. A number of pain reliever formulations are available in the market that include NSAIDs based creams, intra synovial injections and steroid based formulations however none of them proves to be completely effective in improving the quality of life of geriatric population. In addition to it, there are a number of reported side effects/adverse events related to these formulations.

Methods: The present study was conducted to evaluate the effectiveness of a home remedy prepared from Mustard oil and garlic as mentioned in ancient texts of Ayurveda in the knee pain subjects for improving quality of life. A quasi-experimental study (two group pretest and posttest design) was conducted in 70 subjects in two groups of 35 each with knee joint pain meeting the inclusion and exclusion criteria. Pain was assessed using numeric pain scale. Data analysis was done using inferential and descriptive statistics. Majority of the samples in both group I and group II had moderate and severe level of pain.

Results: After intervention, the pain level had reduced to mild level in experimental group as compared to conventional group. The mean pretest values of pain score in experimental group had significant difference during posttest measurement of mean pain score. The difference was found to be significant in experimental group with warm mustard oil massage, but in conventional group difference was not significant.

Conclusion: Mustard oil-garlic combo massage proved to be a good home remedy in knee pain

Key words: effectiveness, mustard oil with garlic massage, knee pain

Introduction

Knee pain is one of the most prevalent disorders affecting the quality of life of elderly age group and geriatric population. This can occur due to numerous reasons including obesity, constant weight bearing rheumatic diseases, rheumatoid arthritis, reactive arthritis as well as osteoarthritis that may lead to swelling, redness, warmth, weakness, tenderness, and stiffness of the joint. Osteoarthritis (OA) of the knee is a common problem all over the world. It is the second most common rheumatologic problem and it is the most frequent joint disease with a prevalence of 22 to 39% in India. It is more common in women than men. Nearly, 45% of women over the age of 65 years have symptoms while 70% of those over 65 years show radiological evidence of OA.

Frequent knee pain affects approximately 25% of adults, limits function and mobility, and impairs quality of life (1, 2, 3, 4), with osteoarthritis as the most common cause of knee pain in people 50 years or older (5). Among those with

knee osteoarthritis, knee pain is a major reason for knee replacements.

A number of pain reliever formulations are available in the market that include non steroidal anti-inflammatory drug (NSAID) based creams, intra synovial injections and steroid based formulations however none of them proves to be completely effective in improving the quality of life of geriatric population. At the same time a number of side effects have been reported due to use of these drugs. In addition to it, there are a number of reported side effects/adverse events related to these formulations. Due to this scenario, there is inclination of the public towards traditional formulations with minimal or nil side effects. The Arthritis Foundation reports that two-thirds of people with joint pain have tried alternative therapies. The present study was conducted to evaluate the effectiveness of a home remedy prepared from Mustard oil and garlic as mentioned in ancient texts of Ayurveda in the knee pain subjects for improving quality of life

Material and Methods

The present study was conducted on 70 subjects of age ranging from 40-80 years with 35 subjects each in

experimental and conventional group with knee joint pain meeting the inclusion and exclusion criteria. The subjects were randomly allocated to two groups. Homogeneity of the both groups by calculating statistical significance of subjective data was assured as per Table 1. Only willing subjects with either unilateral or bilateral knee joint pain were included in the study and the subjects with fractures, accident and joint injuries and allergic to garlic or mustard oil were not included in the study. Numeric pain scale was used to assess the knee joint pain.

Ethical considerations:

Ethical clearance of the study was taken from Ethical committee of University College of Nursing, a constituent college of Baba Farid University of Health Sciences (No.UCN/2020/91). Apart from this, written informed consent was taken from each study subject. Confidentiality and privacy of the study subjects was taken care of. They were assured that their information regarding the treatment shall be used only for research purpose and all subjects were with draw themselves at any point during the study without

any assigned reason. The subjects were also briefed about the risk and benefit ratio of the study design and therapy.

Description of intervention:

Intervention given to experimental group included a home-made formulation that was prepared by burning 40g of garlic in 100ml of mustard oil. After cooling, it was sieved and stored in a glass bottle. The massage to the affected knee was given with the prepared oil for 30 minutes in experimental group. Approximately 4-5 ml prepared oil was used for one knee for every study subject. The subjects were advised to take comfortable sitting position and massaged the knee with hands into circular motion for 30 minutes. The subjects were also advised to cover the knee with warm cloth and take rest for 30 minutes after giving the knee joint massage. The massage was given regularly for 21 days to each subject in experimental group daily. No intervention was given to the conventional group. The level of pain was reassessed by the numeric pain scale from subjects of both the groups after 21 days. The analysis was done using descriptive statistics and inferential statistics. S.P.S.S version 20 was used to analyze the data. $p < 0.05$ was considered significant.

Table 1: Chi square values of sample characteristics of subjects in experimental and conventional group(N=70)

Variables Under Study	Chi Square (χ^2)
Age (years)	$\chi^2 = .345$, df=1, $p = .72$ ^{NS}
Occupation	$\chi^2 = 0.215$, df=1, $p = .642$ ^{NS}
Co-morbid conditions	$\chi^2 = .094$, df=1, $p = .758$ ^{NS}
Duration of joint pain	$\chi^2 = .348$, df=1, $p = .555$ ^{NS}

NS= Non-significant at $p < 0.05$

Results

Table 2: Pre and Post interventional level of pain among people suffering from knee joint pain in experimental and conventional group (N=70)

Level of pain	Experimental Group (n = 35) f (%)		Conventional Group (n = 35) f (%)	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Mild to moderate Pain	26 (74.3)	35(100.0)	27 (77.1)	28 (80.0)
Severe Pain	9 (25.7)	0(0)	8 (22.9)	7(20.0)

Table 2 depicts level of pain among people in experimental and conventional group. It has been seen in experimental group that there is improvement in level of pain after intervention i.e. no subject was having severe pain and subjects were moved to category of moderate/mild pain from severe pain. But in conventional group, no major change in pain score was seen.

Table 3: Effectiveness of mustard oil with garlic massage on knee joint pain(N =70)

Variables	Experimental Group (n =35)	Conventional Group (n =35)	df value	Unpaired t- test	p value
Pain score	Mean± SD	Mean± SD			
Pre-intervention	5.77±1.087	5.23±1.516	68	1.721	0.090 ^{NS}
Post-intervention	3.51±1.245	4.34±1.955	68	-2.115	0.038*

NS = Non- significant at $p < 0.05$

Table 3 depicts the effectiveness of mustard oil with garlic massage on knee joint pain. The mean pain score after the intervention in experimental and conventional group were 3.51 and 4.34 respectively. As per independent t- test, there

*= Significant at $p < 0.05$ was significant difference (t value -2.115 and p value 0.038) between both groups with regard to pain level at p value < 0.05

Hence it can be concluded that there was significant difference in pain score in experimental and conventional group on 22nd day. It shows that mustard oil with garlic massage is effective in reducing the pain score in experimental group on 22nd day. So, the research hypothesis is accepted.

Discussion

Mustard oil has been in use for centuries in India. Although most people use this oil only for cooking, however mustard oil has been used for years to relieve joint pain, arthritis, and muscle pain among elders. Regular massage with this oil can improve blood circulation in the body. This can help in keeping away the problem of joints and muscles. Application of the oil is said to stimulate blood flow and help reduce muscle and joint pain. As you apply and massage the oil on your skin, blood circulation improves, the surface of the skin gets a better blood flow and this, in turn, leads to healing (6). Hippocrates has prescribed mustard as a medicine for pulmonary illness and rheumatism. The use of mustard plant for medicinal purposes goes back to the several millenniums. Mustard has been used as food and medicine in India (6). At the same time, omega-3 fatty acids in mustard oil can also prove to be helpful in joint pain and arthritis problems. Studies have shown that warm garlic paste mixed in mustard oil and applied over the joint also gives relief from pain. For centuries garlic (lahsun) has been an integral part of the Indian kitchen. But, not many of us know that if used in paste form, garlic can effectively relieve us of joint pain. Garlic's anti-inflammatory properties have the potential to counter both arthritis and rheumatism. Studies have shown that warm garlic paste mixed in mustard oil and applied over the joint also gives relief from pain (7). Mustard was used in Europe for centuries for both medicinal and culinary purposes and was brought to this country by European settlers, mustard seeds were once used in the U.S pharmacopeia list of approved medication and were included in baths, plaster and massage oils. Mustard preparation has been reported to be widely used by U.S army in management of pain (7, 8). Mustard is well documented in ancient literature for its warming and anti-inflammatory and medicinal properties. Mustard oil can be used either on its own or in combination with camphor or garlic. Few studies (10,11) conducted in India amongst a target group of women have shown that there was increased variation in the reduction of pain in the samples that had warm mustard oil with camphor massage than warm mustard oil massage alone. Jaydeepa 2019 (12) has also shown effectiveness of mustard oil massage in pain relief in elderly subjects. From the study it is very evident that this home remedy was very effective in relieving the pain and improving the quality of life of the subjects in the study.

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