



Assessment of Formulation of Herbal Pain Relief Oil: *In vitro* Study

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ABSTRACT

Herbal pain relief oil is a plant-based product that is created from a variety of plant sources. Plants have been utilized for a variety of therapeutic purposes since ancient times, based on their properties. The number of herbs utilized for oil extraction method has been discovered. Herbal oil is an alternative to a variety of therapeutic medications that are used in huge quantities and have hazardous side effects, making it the ideal option. Muscle pain is treated using herbal oil, which plays an important part in pain alleviation. In the present work, extractions of Sesamum indicum, Sida Cordifolia, Anacyclus pyrethrum, Centella asiatica, Hibiscus cannabinus, Withania somnifera and Abutilon indicum were prepared with hot water extraction technique. Biochemical and phytochemical studies showed presence of steroid, tannin, saponin, alkaloids, quinine, amino acid, oil and fat, gum, and sterols whereas coumarin, phlobatanin, glycoside, and flavonoid were absent in the composition of the pain relief oil.

Key words: Herbal pain relief oil, Muscular pain, Herbal product, Plant material

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INTRODUCTION

Pain is described as an unpleasant sensory and emotional experience linked to actual or potential tissue injury. The use of medicinal plants in pain alleviation has a long history, and it is an important medical practice [13]. Plant-based treatments, herbal remedies, and natural products have become more popular in recent years. For the treatment of muscle pain, a variety of herbs and essential oils are employed. Essential oils are made from natural sources and are therefore safer than synthetic medications, Sesame (*Sesamum indicum* L.), a member of the Pedaliaceae family, is a popular oil seed crop grown in the tropics and temperate zones of the world. All parts of the *Sesamum indicum* (Sesame) such as seeds, oil, oil-cake, flowers, leaves, root, whole plant are utilized for therapeutic purposes for treatment of boils, carbuncle, menstrual irregularities, blood dysentery, poly-urea, stomach-pain, migraine, serious burns skin diseases, eye trouble (flowers), alopecia (leaves and root), and used as a tonic, among others. Commercially available product in the market claimed for a variety of body aches, such as neuralgia and old age sickness, paralysis, gout, and rheumatism. It is also used as massage oil and a hair oil [8]. *Sida Cordifolia* (Bala) extract helps to alleviate arthritis, joint problems and reduction of joint stiffness. *Anacyclus pyrethrum* (Akkalakara) has known as with its aphrodisiac, antibacterial, antidiabetic, antidepressant and memory-enhancing properties. It aids in the management of arthritis symptoms and promotes digestion. It is used to treat tooth decay and toothaches externally. *Centella asiatica* (Brahmi) is used to treat asthma, skin conditions, ulcers, and muscle aches [9]. It is a common herb used to treat skin disorders, heal wounds, and revitalize nerves and brain cells, and is thus referred to as "brain food" in India. [17]. *Anacyclus pyrethrum*, a member of the Asteraceae family and the *Anacyclus* genus, is a native plant of India and the Arab world, and its root has medicinal properties [16].

In the present work pain relief oil is prepared with the help of sesame oil and few herbs Bala, Akkalkara, Atibala, Brahmi, Ashwagandha and Ambadithat have been shown beneficial therapies for a variety of human ailments and postulating anti-inflammatory properties. Hence such plants species were used for formulation of muscular pain relief oil.

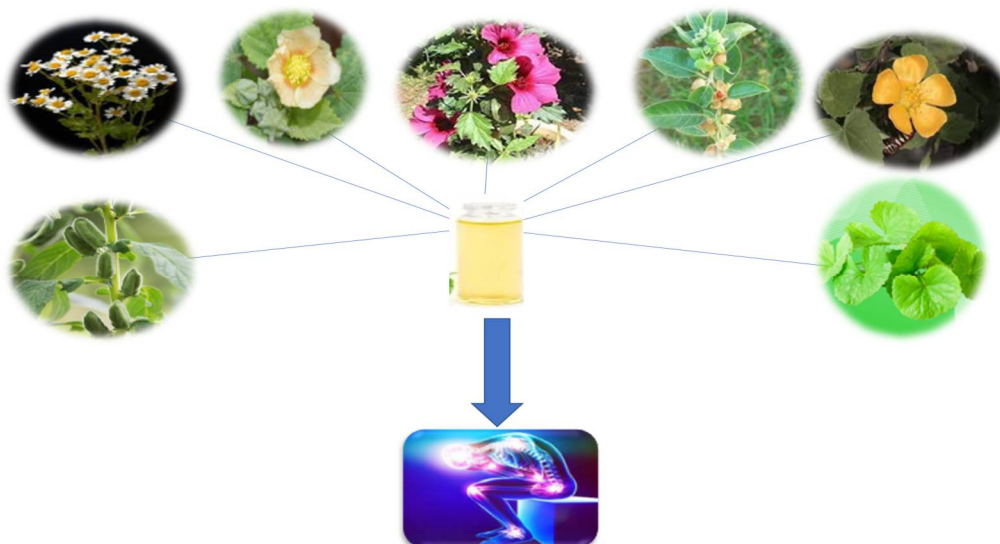


Fig.1: Diagrammatic Representation of Formulation of Herbal Pain Relief Oil For Muscular Pain.

MATERIAL AND METHODS

Plant Material

The medicinal herbal plants such as *Sesamum indicum*, *Sida Cordifolia*, *Anacyclus pyrethrum*, *Centella asiatica*, *Hibiscus cannabinus*, *Withania somnifera*, and *Abutilon indicum* were selected for formulation of muscular pain relief oil. The required plant parts such as root, seed, whole plant were collected from the region of Ahmednagar district, Maharashtra, India (Table 1). After collection of plant materials, large pieces were cut into smaller pieces to increase the surface area of the parts to allow for a quicker drying period and it dried in shade. A commercial blender was used to grind the dried material into fine powders. During the course of this study, the powdered plant material was stored in air-tight glass containers and kept away from sunlight

Extraction

Hot water extraction (HWE) method used for prepared the extract of plant material. Bala 50 gm, Akkalkara 10 gm, Atibala 25 gm, Brahmi 20 gm Ashwagandha 30 gm and Ambadi 50 gm mix into 500 ml water and boil it. The plant material was stirred thoroughly with a glass rod throughout the boiling process. After extraction, the extracts were filtered through Whatman No. 1.

Sesame Seed: The sesame seed 2.5 kg collected from Kopargaon market and oil extracted from oil meal.

Formulation of pain relief oil: A 500 ml sesame oil and selected plant material extract mix together and boil for 20 – 25 min. for evaporation of water. After that cool it and store at room temperature.

Analysis of Phytochemical: Secondary metabolite analysis which has been done to determine indication of different phytochemicals such as the steroid, tannin, saponin, alkaloids, quinine, amino acid, oil and fat, gum, and sterols on the basis of has been done by the as per the standard protocol (10)

Table 1: Plant Material Required and Quantity Used During Formulation

Sr. No	Name of Plant Material	Plant Part Used	Quantity
1	<i>Sesamum indicum</i> (Sesame)	seed	1000 ml
2	<i>Sida Cordifolia</i> (Bala)	whole Plant	50 gm
3	<i>Anacyclus pyrethrum</i> (Akkalakra)	root	10 gm
4	<i>Centella asiatica</i> (Brahmi)	whole Plant	20 gm
5	<i>Hibiscus cannabinus</i> (Ambadi)	seed	50 gm
6	<i>Withania somnifera</i> (ashwagandha)	root	30 gm
7	<i>Abutilon indicum</i> (Atibala)	root	25 gm

RESULT AND DISCUSSION

Phytochemical Analysis

The qualitative phytochemical test was carried out for the analysis of steroid, tannin, saponin, alkaloids, quinine, amino acid, oil and fat, gum and Sterols according to the standard procedure (10).The results of

the phytochemical analysis showed that presence of steroid, saponin and alkaloids were more in quantity than the other phytochemicals tested. Alkaloids have also pharmacological effects and are used as local anesthetic and stimulants [1]. Steroids are particularly useful as adjuvant therapy for metastatic bone pain, neuropathic pain, and visceral pain [13]. Most of the studied extracts of *C. asiatica* leaf contained alkaloids, glycosides, terpenoids, steroids, flavonoids, tannins, saponins, and reducing sugars, according to preliminary phytochemical screening [18]. Phytochemical analysis of *Sida cordifolia* extract showed presence of reducing sugar, tannins, saponins, steroids, flavonoids, gums, alkaloids, and glycosides, among other chemical groups [16]. The majority of phytochemicals are found in *Sesamum indicum* [19]. Secondary metabolites such as alkaloids, reducing chemicals, tannins, flavonoids, and coumarins have been found using phytochemical screening in pyrethrum (*Anacyclus pyrethrum*) [12]. The qualitative parameter of the herbal oil has been described (Table no. 3).

Table 2: Secondary Metabolite Analysis Result

Sr. No.	Content	Observation	Result
1	Steroid	+++	Present
2	Tannin	++	Present
3	Saponin	+++	Present
4	Alkaloids	+++	Present
5	Coumarin	-	Absent
6	Phlobatanin	-	Absent
7	Quinine	++	Present
8	Glycoside	-	Absent
9	Flavonoid	-	Absent
10	Amino acid	++	Present
11	Oil and fat	+++	Present
12	Gum and Sterols	+	Present

Table No.:3 Qualitative Parameter of the Herbal Oil

Parameter	Color	pH	Nature	Toxicity	Use for
Result	Pale Brown	5	Sticky	Less toxic	Muscular Pain

CONCLUSION

This study has provided some pharmacological uses of these ingredients (sesame oil and few herbs Bala, Akkalkara, Atibala, Brahmi Ashwagandha and Ambadi) in the treatment and prevention of muscle pain. The phytochemical analysis shows that the pain relief oil are rich in steroid, tannin, saponin, alkaloids, quinine, amino acid, oil and fat, gum and sterols, which are popular phytochemical constituents.

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