

# Development of a Substitute Oil for Vipadikahara Grita Taila and It's Evaluation Against Vipadika Skin Disease (A Case Study)

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**Abstract:** Vipadikahara Grita Taila is specific and effective medicated oil, use externally to treat the “Vipadika” skin lesion. Vipadika is a common skin ailment in geographically warm country like Sri Lanka. Large fissures with number of cracks in feet and hands with severe pain are the symptoms of Vipadika skin lesion according to Ayurveda texts. Though Vipadikahara Grita Taila is an effective treatment, two important plants (*Leptadenia reticulata* and *Berberis aristata*) are not available in Sri Lanka to prepare this medicated oil. Therefore, as an alternative, substitute oil was prepared introducing two newly identified substitute plants (*Wattakaka volubilis* and *Berberis ceylanica*). Still, researches are not attempted to evaluate the efficacy of this substitute oil on Vipadika skin disease. The aim of this study was to evaluate the effectiveness of substitute oil on Vipadika skin lesion. A forty seven year old female house wife was presented to outpatient department (Kayachikitsa clinic), Ayurveda Teaching Hospital in 2014 with complaints of bilateral large cracks and fissures in feet since 05 years. According to clinical features of Ayurveda view, this case diagnosed as Vipadika skin lesion. To manage this, standardized substitute oil was applied over the affected area twice a day, in the morning and evening in dried feet after washing with Luke warm water for 6 weeks duration. The lesions progressively healed reducing with cardinal symptoms during the treatment period and gradually the skin of the feet became almost normal. Present study had proven that, substitute oil for Vipadikahara Grita Taila can be used externally as an effective medicated oil to manage Vipadika.

**Keywords:** Vipadikahara Grita Taila, Substitute Oil, Vipadika, A Case Study

## 1. Introduction

Skin is an outermost cover of the body, plays a chief role in maintaining barrier between internal and external environment. In addition, the healthy skin is the primary requirement for the beauty as well as having an attractive personality, which are the basic instincts of the human being. Any weakness at the skin becomes a great handicap for a person in the society, because it has a visible pathology. Vipadika dermatosis comes under eighteen subtypes of skin diseases in Ayurveda and it severely damaged the palms and feet of the person. Therefore, patients present with large

fissures and cracks in their feet and palms (panipada sphuthana) with severe pain (tivra vedana) [1].

Ayurveda is the ancient health science and it has described the management of wound in detail. Many herbal formulations are being successfully used for wound healing since historical times. Pinda taila and Visarpahra taila are common examples for normally use medicinal formulations [2]. Animal studies also had proven the wound healing property of Vranashodhanahara taila and Doorvadi taila [3].

Vipadikahara Grita Taila (VHGT): medicated oil which was mentioned in Caraka Samhita [1] as a treatment for five types of skin diseases including Vipadika. Medicinal plants and other ingredients of the VHGT are *Leptadenia reticulata*

(Family: Asclepiadaceae), *Rubia cordifolia* (Family: Rubiaceae), *Berberis aristata* (Family: Berberidaceae), *Mallotus philippinensis* (Family: Euphorbiaceae) and Cow's milk, Bee's wax, Resin of *Shorea robusta* (Family: Dipterocarpeae). Sesame (oil of *Sesamum indicum* seeds, Family: Pedaliaceae) and cow's ghee were used as the base of the oil [4]. Though it is effective oil, two important plant materials are not locally available to prepare this medicated oil in Sri Lanka. Therefore, substitute oil was prepared using two newly identified medicinal plants; *Wattakaka volubilis* (Family: Asclepiadaceae) and *Berberis ceylanica* (Family: Berberidaceae) for *Leptadenia reticulata* and *Berberis aristata* in VHGT. Prepared substitute oil was standardized according to Indian Standard Methods of Sampling and Test for Oils and Fats [5]. The aim of this study was to evaluate the efficacy of substitute oil which may be used to Vipadika skin lesion for VHGT.

Forty seven year old female house wife was presented to outpatient department (Kayachikitsa clinic), Ayurveda Teaching Hospital in 2014 with complaints of bilateral large cracks and fissures in feet since 05 years. It starts from the site of the heels and gradually spread to the other part of the foot up to big toe. There are exacerbations and remissions during the past five years and she complained a severe pain throughout the day and night when it became worst. When the cracks are particularly bad, she felt fever and walking difficulty. Fissures, cracks and pain get worse with the foods mixed with salmon, toona fish and pickle, lime pickle, dry fish and vinegar added curries. Her vitals were stable with Height - 125 cm, Weight - 45 kg, B.P. - 110/90 mm of Hg. While taking allopathic medicine, some relief was present but it is not permanent. Therefore, she has decided to get Ayurveda treatment. Other than this skin problem, patient is in good health.

According to symptoms, this case demonstrated as a classical presentation of Vipadika skin disease. There is no family history of such skin lesions or any other type of skin diseases. Patient was free from the symptoms of Diabetes Mellitus, hypertension, and chronic lung disease, and malignancy, sensitivity reactions to the medicated oils and Vipadika with secondary infections. Further, patient did not use any topical steroid/s for a longer period.

## 2. Methodology

This study was conducted in Ayurveda Teaching Hospital, Borella, with the approval of ethical review committee of Institute of Indigenous Medicine, University of Colombo, Sri Lanka (Re. No: 12/06). Evaluation was based on the reduction of the cardinal symptoms and healing of wounds by measuring the length, width, depth and number of ulcers. Linear measurement: simple dimensional assessment was performed in cutting or splitting wounds using a polythene piece keeping on the foot / palm of the patient and marked them. Later, total lengths (in mm) of the fissures were measured using plastic flexible ruler. Length is the longest distance of a wound, margin to margin. One or more than 1

cm lengthy fissure wounds were measured and calculated. Slight cracks were ignored. The second measurement (width) is made perpendicular to the length (also at the widest distance). When measuring the width (in mm), placed the ruler over the widest aspect of the wound and measured from 3 o'clock to 9 o'clock according to Wendelken and co-workers [6]. When measuring depth placed a cotton-tip applicator into the deepest part of the wound bed. Then grasped the applicator by the wound margin and place it against the ruler and got the reading (in mm) [7]. Further, photographs were taken before and after the treatment to confirm the healing. Scoring system was developed to evaluate cardinal symptoms: itching, roughness of the skin, pain, oedema, burning sensation at the affected site and dark shade in the affected site of the skin subjectively. Physical findings were evaluated day zero, during and after the treatment. In addition, General symptoms such as fever, lymph enlargement were also examined and evaluated before, during and after the treatment.

Assessment of cardinal symptoms were done with the help of Numerical Rating Scale and patient was advised to choose a number for grading to describe their current condition which was shown below.

Itching	
No itching	0
Mild itching (only aware of itching when relaxing)	1
Moderate (sometime disturb the sleep and day time activity)	2
Severe (constant itching, frequent sleep disturbance)	3
Roughness of the affected site	
Insignificant dryness at the foot/palms	0
Roughness is present when touching	1
Excessive roughness presents and leading to itching	2
Excessive roughness presents and leading to slight cracks	3
Roughness leading to cracks	4
Pain	
No pain	0
Mild pain of easily bearable nature, comes occasionally	1
Moderate pain, but no difficulty	2
Having frequently and requires some measures for relief	3
Pain requires medication and may remain throughout the day	4
More difficulty: pain is severe, disturbing sleep and requires analgesics	5
Oedema	
No swelling	0
Slight swelling	1
Moderate swelling	2
Severe swelling	3
Burning sensation at the affected site	
No burning sensation at the affected site	0
Mild burning sensation at the affected site but bearable nature, comes occasionally	1
Moderate burning sensation at the affected site, but no difficulty	2
Burning present all over the day and requires some	3

measures for relief (water, etc)

Requires some medical applications but may remain throughout the day 4

More difficulty and burning sensation is severe, disturbing sleep 5

Dark shade in affected part

No skin discoloration is present on the feet 0

Slight discoloration is present on the skin feet 1

Discoloration with slight skin cracks 2

Dark dirty color in the sole with large cracks 3

Patient was advised to apply the oil over the affected area twice a day: morning and evening in dried feet after washing with Luke warm water. A demonstration was conducted about application of the oil over the affected area at the beginning of the treatment. Treatment duration was 6 weeks and volume of the oil was 60 mL per week. Patient was advised not to apply any other remedy on the skin lesion or taking any internal medicine during the study period and also not to apply the trial drug on the day of assessment. Follow-up period was 03 months.

**Statistical analysis:** Data are given as means  $\pm$  S.E.M. Statistical comparisons were made using one-way ANOVA followed by Duncans multiple range test. A P value  $\leq 0.05$  was considered as significant.

### 3. Results and Discussion

The lesion was cured during the treatment period and the skin of the feet became almost normal gradually at the end of the treatment as shown in Fig. 1, Fig. 2 and Fig. 3. The length, width, depth and the number of lesions were significantly reduced in 79.3%, 86.3%, 91.2% and 90.08% respectively. In addition, itching (90.0%), roughness (80.23%), pain (97.07%), oedema (98.55%), burning at the affected site (97.71%) and dark shade (81.03%) were significantly reduced in affected site with the treatment. Healing rate of fissures by this substitute oil is almost same as VHGT [8]. These healing properties may be due to same organoleptic properties and other phytochemicals of the substitute oil as in VHGT [9, 10]. When preparing medicated oil, first dirt free plant materials were mixed with water and the mixture is heated using mild flame until the volume of water reduced to one fourth of the original volume. Substitute oil is rich in phenolic compounds, tannins, saponins, steroid glycosides and coumarin [9]. Due to the hot extraction technique, most of the chemical compounds have been extracted into the oil. Therefore, it possesses high medicinal value though it contains less number of medicinal plants.

The most important bioactive compounds of the medicinal plants are alkaloids, flavanoids and phenolic compounds [11]. Natural antioxidants mainly come from plants are in the form of phenolic compounds such as flavonoids, phenolic acids, etc. [12]. Phenolic compounds possess biological properties such as antiaging, anti-carcinogenic, anti-inflammatory, cardiovascular protection and improvement of endothelial function, as well as cell proliferation activities [13]. Accordingly, phenolic compounds contain in substitute

oil help to heal wounds in many ways such as analgesics, anti-inflammatory and antimicrobial activities. The alkaloids contained in plants are used in medicine as anaesthetic agents [14]. Further, phenolic compounds present in the substitute oil give more support to repair and recover the wound. Therefore, substitute oil can be used easily as a treatment for Vipadika skin lesion for VHGT.



**Fig. 1.** Before Treatment for Vipadika skin lesion.



**Fig. 2.** After 3 weeks of treatment by Substitute oil.



Fig. 3. After 6 weeks of treatment by Substitute oil.

## 4. Conclusion

Substitute oil facilitated wound healing and reduced the cardinal symptoms significantly. Accordingly, present study revealed that, the substitute oil can be used as an alternative to VHGT to manage the Vipadika skin lesion. Further therapeutic efficacy of the VHGT and the substitute oil is almost same.

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