

# Comparative Study Of Pharmaceutical Standardization And Antifungal Activity Of Modified And Conventional Dadruvidravan Malahar In Case Study.

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**Abstract-** According to WHO, the prevalence rate of superficial mycotic infection has been found to be 20-25% worldwide. In India, more than one million cases per year were found of fungal infection.

Tinea, superficial fungal infections caused by three species of fungi tinea corporis (general skin), tinea cruris (groin) and tinea pedis (feet) collectively known as dermatophytes.

In this scenario, though oral antifungals are the mainstay of therapy, the role of topical antifungals is also crucial. But the increased use of antifungal agents in recent years has resulted in the development of resistance to these drugs. Also these drugs cause many hazards to body and general irritation of the skin. The significant clinical implication of resistance has led to heightened interest in the study of some ayurvedic rasa aushadhi's as antifungal formulation.

In present study a herbo-mineral preparation dadruvidravan malahar of rasatarangini was made with some modification as its smell is very annoying and patient does not like its smell. So it is prepared by different methods, one as mentioned in text having the same base sesame oil, added with essence tea tree oil and one with modification having base coconut oil. Coconut oil is used, as it removes that anxious smell and also in some researches the antimicrobial activity of coconut oil is proven. These formulations are evaluated for its analytical test and its antifungal activity in 10 cases of dadru.

Acceptability, penetrability, non-irritant effect and antifungal activity of dadruvidravan malahar had to be proven in case series of ten patients in this study.

**Index Terms-** Coconut oil, Chakramada beej, Dadruvidravan malahar, Dadru, Ghandhak, Tankan, Tila taila.

## INTRODUCTION

Tinea, superficial fungal infections mostly caused by three species of fungi<sup>1</sup>. Their name are based on the involvement of body part - tinea corporis (general skin), tinea cruris (groin) and tinea pedis (feet) collectively known as dermatophytes. With some pertinent exceptions, dermatomycosis is typically confined to the superficial keratinized tissue<sup>2</sup> and thus can be often treated with topical antifungal medications<sup>3</sup>. According to Ayurveda fungal infection is diagnosed as "dadru". The involved dosha is kapha- vata<sup>4</sup>. Kapha and pitta dosha manifest in the skin and cause accumulation of toxins. These toxins accumulate in deeper

tissues of skin like rasa (nutrient plasma), rakta, (blood), mamsa (muscles) and lasika (lymphatic). These toxins cause contamination of deeper tissues. Contamination of deeper tissues and aggravation of kapha/pitta dosha leads to ringworm. Third involved dosha is vata. Thus it is tridoshaj disease, in which prime involved doshas are kapha and pitta.

External application is the shortest route to reach the skin; hence the drug shows good effect when applied externally. In present study a herbo-mineral preparation dadruvidravan malahar of rasatarangini<sup>5</sup> was made with some modification as its smell is very annoying and patient does not like its smell. So it is prepared by different methods, one as mentioned in text having the same base sesame oil added with essence tea tree oil and one with modification having base coconut oil. Coconut oil is used, as it removes that anxious smell and also in some researches the antimicrobial activity of coconut oil is proven<sup>6</sup>.

These formulations are evaluated for its analytical test and its antifungal activity in 10 cases of dadru. Acceptability, penetrability, non-irritant effect and antifungal activity of dadruvidravan malahar had to be proven in case series of ten patients in this study.

## NEED FOR THE STUDY

According to WHO, the prevalence rate of superficial mycotic infection has been found to be 20-25% worldwide. In India, more than one million cases per year were found of fungal infection.

In this scenario, though oral antifungals are the mainstay of therapy, the role of topical antifungals is also crucial. But the increased use of antifungal agents in recent years has resulted in the development of resistance to these drugs. Also these drugs cause many hazards to body and general irritation of the skin. The significant clinical implication of resistance has led to heightened interest in the study of some ayurvedic rasa aushadhi's as antifungal formulation.

In present study a herbo-mineral preparation dadruvidravan malahar of rasatarangini was made with some modification as its smell is very annoying and patient does not like its smell. So it is prepared by different methods. In this modern era of development, attempt of modification is done and evaluated.

## AIM

To assess the antifungal activity of the modified and conventional dadruvidravan malahar.

### OBJECTIVES

1. To prepare and standardize both the conventional and modified dadruvidravan malahar in accordance with API and AFI guidelines.
2. To compare the modified and conventional malahar for its acceptability, non-irritant effects and penetrability.
3. To compare the antifungal activity of conventional and modified dadruvidravan malahar in 10 patients.

### TYPE OF STUDY:

Case Series

### CASES STUDY

In this study, 10 Patient with dermatophytes are randomly selected irrespective of their age group, sex, religion and occupation, etc. 5 patients were treated with the conventional malahar and 5 are treated with the modified malahar.

### STUDY PARAMETER

Relief of symptoms - kandu, pidika, srava and raga. They are assessed with scores.

### METHODS AND MATERIAL

Collection of the raw material is done and then Dadruvidravan malahar is prepared as per Rasatarangini and with modification. It was prepared by using two different bases - one by taking tila taila as mentioned in text as a conventional dadruvidravan malahar and one with the coconut oil as a modification in the form of modified dadruvidravan malahar.

### PREPERATION OF CONVENTIONAL DADRUIDRAN MALAHAR

In conventional method, take one part of bee wax and 5 part of tila taila and melt both of them together and siktha taila was prepared. Take 120gm of siktha taila and melt them on the low flame. And add 10gm of shuddha ghandak choorna and 5gm of each shuddha tankan, chakramad beej choorna and laksha choorna into it and heat is given till it forms a homogeneous mixture. Then 4-5 drops of essence was added to it.

### PREPERATION OF MODIFIED DADRUIDRAN MALAHAR

In modified method, take one part of bee wax and 5 part of coconut taila and melt both of them together and siktha taila was prepared. Take 120gm of siktha taila and melt them on the low flame. And add 10gm of shuddha ghandak choorna and 5gm of each shuddha tankan, chakramad beej and laksha choorna into it and heat is given till it forms a homogeneous mixture. Both are made by fusion method.

### STANDARDISATION AND ANALYTICAL COMPARISON OF BOTH MALAHAR

Then the standardisation of both conventional and modified dadruvidravan malahar was done.

### CASE SERIES

Selection of patients who are diagnosed with the dadru. Then intervention of malahar and were assessed for its non-irritability, acceptability, penetrability and antifungal activity in 5 patients each.

### RESULTS

Both the malahar are standardize by using the analytical methods. The results of the analytical test are shown in the table1

Sr. No.	Name of the Analytical test	Conventional dadruvidravan malahar	Modified dadruvidravan malahar
1	Appearance	Thick creamy paste	Thick creamy past
2	Colour	Light creamish brown	Light creamish yellow
3	Loss on drying	6.88%	7.29%
4	Ph	5.6	5.8
5	Spreadibility	Uniformly spreadable	Uniformly spreadable
6	Acid value	9.05	8.65
7	Density	0.8905	0.894
8	Tannis	Present	Present
9	Alkaloids	Present	Present
10	Texture	Smooth	Smooth

### CASE STUDY OF 10 PATIENTS

5 patient of conventional dadruvidravan malahar:

Non-irritant effect: 3/5patient

Penetrability: 12/20 mg

Relief of symptoms: 3/5

5 patient of modified dadruvidravan malahar:

Non-irritant effect: 5/5patient

Penetrability: 19/20mg

Relief of symptoms: 4/5

### DISCUSSION

1. Loss on drying of modified DVM is 7.29% which is more than conventional DVM which is 6.88%.A modified DVM has more loss on drying indicating that coconut oil has more moisture content.

2. PH of modified DVM is less than conventional DVM both acidic i.e 5.8(conventional) and 5.6(modified) which is good for the skin. As skin also have the acidic ph from 4-6 so products that is locally applied on the skin must have the same ph if it is alkaline then it can disturbed the acidic mantle of the skin.

3. Acid value of modified DVM is 8.65 which is less than conventional DVM which is 9.05. Low acid value is considered safe for making skin care products though high acidity may be harmful for the skin. Also more the acid value less is its stability.

4. Alkaloids and tannins which are found in both the malahar have antifungal properties. Both have the smooth texture.
5. Spreadability of formulations, that is, the ability of a ointment to evenly spread on the skin, plays an important role in the administration of a standard dose of a medicated formulation to the skin and the efficacy of a topical therapy. The values refer to the extent to which the formulations readily spread on the application surface by applying a small amount of shear.
6. Ointments are weighed about to 20 mg and then is applied on the skin by round movements for 30 seconds and then left out ointment is collected and weighed again to check its penetrability. Penetrability is increased in modified DVM from average of 12 mg to the 19 mg.
7. 2 patients out of 5 develop the skin irritation on using conventional malahar and no 5 patient develop skin irritation who are using modified malahar.
8. 60% of patient get relief by conventional DVM and 80% get relief by modified DVM

#### CONCLUSION

Modified Dadruvidravan malahar is better than the conventional Dadruvidravan malahar as it has more moisturising content, almost same ph as that of the conventional , low acid value, uniform speradibilty, more penetrability than that of conventional DVM. Modified DVM shows no skin irritation but the conventional DVM shows skin irritation in 2 patients out of 5. The reason for this may be that gandhak has its ushna properties and tila taila also have ushna properties so may be off excessive ushanta it caused skin irritation but in modified DVM coconut oil is used which is sheeta virya which may be neutralizing the ushanta of the gandhak. Both the conventional and modified Dadruvidravan malahar shows antifungal activity but the reliefs of symptoms were seen more in patients of modified Dadruvidravan malahar.

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