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PREPARATION, PHYSICOCHEMICAL CHARACTERIZATION AND CLINICAL EFFICACY OF MANJISHTHADI TAILA IN VYANGA

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ABSTRACT

Ayurveda, the traditional system of medicine, emphasizes holistic health and the maintenance of skin through natural and lifestyle-based approaches. Among various dermatological conditions described in Ayurveda, *Vyanga* is characterized by painless, localized hyperpigmentation on the face, commonly associated with stress, dietary irregularities, and imbalances of *Vata* and *Pitta* doshas. In the modern era, increasing exposure to environmental pollutants and ultraviolet radiation has further contributed to the prevalence of such pigmentation disorders. Ayurvedic formulations, particularly those derived from *Bhaishajya Kalpana*, offer effective and safe treatment options. *Manjishthadi Taila*, a medicated oil prepared using *Tila Taila* (sesame oil) and skin-beneficial herbs like *Manjishtha* and *Yashtimadhu*, possesses antioxidant, photoprotective, and complexion-enhancing properties. The present study highlights the need for development and quality evaluation of *Manjishthadi Taila* as a safe and effective topical treatment for *Vyanga*.

INTRODUCTION

Ayurveda, known as the “science of life,” is an ancient system of medicine that integrates health, hygiene, and lifestyle practices to promote overall well-being. Skin, being the largest organ and the most visible interface between the human body and the external environment, plays a crucial role in both physiological protection and aesthetic appearance. In contemporary society, where appearance significantly influences personal and social

perceptions, maintaining healthy skin has become increasingly important.

Exposure to environmental factors such as ultraviolet radiation, pollution, and stress, along with unhealthy lifestyle practices including irregular diet and sleep patterns, has led to a rise in dermatological disorders. One such condition described in Ayurveda is *Vyanga*, which presents as painless, thin, brownish discoloration of the facial skin. Classical texts attribute its pathogenesis to the vitiation of *Vata* and *Pitta* doshas, often triggered by psychological factors like stress and anger.

Ayurveda advocates the use of natural, plant-based formulations for both internal and external therapies. *Bhaishajya Kalpana*, a specialized branch of Ayurveda, deals with the preparation of medicines in various forms to enhance their therapeutic efficacy.

Sneha Kalpana is an important part of Bhaishajya Kalpana in Ayurveda that deals with the systematic preparation of medicated oils (Taila) and medicated ghee (Ghrita). In this process, herbal decoctions and pastes are processed with lipid-based substances to obtain therapeutic formulations. These preparations are extensively used in both Shamana (pacification therapy) and Shodhana (purification therapy) because they promote better absorption of medicines and facilitate deeper penetration into body tissues.

Among these, *Snehapak Kalpana* focuses on medicated oils, with *Tila Taila* (sesame oil) being a preferred base due to its skin-nourishing, antioxidant, and penetrative properties. Taila Kalpana may be understood as an oil-based drug delivery system that enhances the absorption of both lipid-soluble and water-soluble active compounds while also improving the shelf life of the medicine.

Manjishthadi Taila, formulated with herbs such as *Manjishtha* and *Yashtimadhu*, is traditionally recognized for its complexion-enhancing (*Varnya*) and skin-protective effects. Given the increasing prevalence of pigmentation disorders and the limitations of synthetic treatments, there is a growing need to develop safe, effective, and standardized Ayurvedic formulations. This study aims to explore the therapeutic potential and standardization of *Manjishthadi Taila* in the management of *Vyanga*.

AIM AND OBJECTIVES

1. To prepare *Manjishthadi Taila* as described in the classical Ayurvedic text *Yogratnakar*.
2. To carry out Physico-chemical analysis of the *Manjishthadi* Taila.

3. To evaluate the clinical efficacy of *Manjishthadi Taila* in patients suffering from *Vyanga*.

MATERIALS AND METHODS

A) PHARMACEUTICAL STUDY

RAW MATERIAL

For taila murcchana: Tila taila, Kalka of Manjishtha, Haritaki, Bibhitaki, Amalaki, Usheera, Haridra, Musta, Lodhra, Vatankura, Kevada, Kamal detha **For Manjishthadi Taila**: Manjishtha, Yashtimadhu, Matulunga Twaka, Laksha, Tila Taila Jal (Water) were bought from reliable place. Fresh Aja dugdha was procured daily from nearby source.

Authentication of raw materials: Tila taila, Manjishtha, Haritaki, Bibhitaki, Amalaki, Usheera, Haridra, Musta, Lodhra, Vatankura, Kevada, Kamal detha, Yashtimadhu, Matulunga Twaka, Laksha, Aja dugdha were authenticated from a reliable and recognized laboratory.

Equipment

Weighing Machine, Mortar and pestle (Khalva yantra), Measuring Cylinders, Stove and gas Cylinders, Spoons, Spatulas/ Tongs, Glass Beakers, Stainless Steel vessels, Sieves, glass vessel (capacity 1L.), stirrer, cloth, spatula, cotton, Smart censor Infrared pyrometer and other Instruments as per need.

Table No. 1: Ingredients used for 1 L Tila Taila Murcchana.

SR NO.	INGREDIENTS	QUANTITY
1.	Manjishtha choorna	62.5 g
2.	Haritaki choorna	16 g
3.	Bibhitaki choorna	16 g
4.	Amalaki choorna	16 g
5.	Usheera choorna	16 g
6.	Haridra choorna	16 g
7.	Musta choorna	16 g
8.	Lodhra choorna	16 g
9.	Vatankura	16 g
10.	Kevada choorna	16 g
11.	Kamal detha	16 g
12.	Tila Taila	1 litre
13.	Jal	4 litre

Procedure

1. Tila taila (1L.) was taken in aluminum large vessel, heated on mild fire and allowed for self-cooling.

2. The kalka dravya were mixed with water and paste is prepared. This kalka is added to the above oil and constant stirring is carried.
3. 4 times of water to that of tila taila was added to the above vessel i.e around (4L.) of water was added.
4. It was kept over (mandagni) fire, without lid over vessel and slowly continuous stirred to mix well.
5. After some time the mixture started boiling and temperature was recorded.
6. Later when there was maximum boiling point the temperature was recorded.
7. After 3 hrs heating it is allowed for self-cooling and a plate is covered to prevent from any dust fall.
8. On the next 2ndday heating is again continued and 3 hrs heating is carried on.
9. During the process of sneha siddhi the kalka was intermittently checked for varti pariksha for its siddhi lakshana
10. On the 3rd day, the heating process is continued 1hr till the oil becomes water free and gets the Lakshanas of Snehasiddhi.
11. After observing all qualities of Snehasiddhi, the vessel is taken out from the fire and the oil is filtered through a clean cloth.
12. Obtained MoorchitaTila taila (mrudupaka) is preserved.
13. In whole procedure temperature was recording. And also organoleptic study was carried out in each step. The temperature recording was done with the help of "Smart censor Infrared pyrometer".

Table No. 2: Ingredients used for preparation of 1 L Manjishthadi Taila.

SR NO.	INGREDIENTS	QUANTITY
1.	Moorchhita tila taila	1000 ml
2.	Manjishtha choorna	62.5 g
3.	Yashtimadhu choorna	125 g
4.	Matulunga Twaka choorna	62.5 g
5.	Laksha choorna	62.5 g
6.	Aja dugdha	2000 ml
7.	Jal (water)	4000 ml

Note: In above Kalpa,'Madhuk' & 'Yasti' are the synonyms of single Dravya (drug) Yashtimadhu. In such condition, Acharya Sharangdhar said, any drug which comes two time in any kalpa then take that single drug in double quantity in same kalpa." So here Yashtimadhu can be taken in double quantity.

PROCEDURE

1. Moorchhita tila taila (1L.) is taken in a steel vessel.
2. It is heated and then kalka of manjishtha, Yashtimadhu, Matuluga twaka & Laksha is added to Moorchhita tila taila in above mentioned quantity.
3. The mixture is again heated for few time. So that kalka dravyas should not get over burnt.
4. Then Ajadugdha (2L.) and water (4L.) are added to above mixture.
5. After 3 hrs heating it is allowed for self-cooling and a plate is covered to prevent from any dust fall.
6. On the next 2nd day heating is again continued and 3 hrs heating is carried on.
7. Heating is continued in mild fire, over gas stove, Constant stirring is carried to avoid sticking of kalkas to the base.
8. On the 3rd day, the heating process is continued 1hr till the oil becomes water free and gets the Lakshanas of Snehasiddhi.
9. During the process of sneha siddhi the kalka was intermittently checked for varti pariksha for its siddhi lakshana.
10. After the observation of sneha siddhi lakshana (confirmatory tests for oil), the Taila was filtered through a clean cloth, the obtained oil was measured.
11. Thus the Manjishthadi Taila (Madhyapaki) was prepared and it was stored in an airtight container.



RAW MATERIAL FOR MANJISHTHADI TAILA





PREPARATION OF MANJISHTHADI TAILA OVER MILD HEAT FLAME



Murcchit Tila Taila **Kalka Dravya Paste** **Mix Tila Taila +Kalka + Water**



Add Ajadugdha and Boil **Reduce till only taila remains**



MILD FROTHING (PHENODGAMA)



SNEHA VARTI PARIKSHAN

B) ANALYTICAL STUDY

Manjishthadi Taila was analysed in accordance with the guidelines mentioned in authoritative Ayurvedic texts. The evaluation comprised both organoleptic assessment and physico-chemical testing. Organoleptic examination was carried out to study the morphological features such as colour, odour, and texture. Physico-chemical analysis included determination of pH, specific gravity, viscosity, total suspended solids, refractive index, saponification value, acid value, rancidity, peroxide value, and iodine value. All analytical procedures were performed in the Quality Control Laboratory of recognised laboratory.

B) CLINICAL STUDY

The prepared formulation was administered to 30 patients diagnosed with *Vyanga* over a period of two months. Patients were monitored through weekly follow-ups to assess clinical improvement.

Selection criteria

- **Selection of patient**

30 patients were selected randomly from Swasthya Rakshan OPD of our institute. Informed written consent was taken prior to study. Diagnostic criteria Diagnosis will be made based on sign and symptoms of Vyanga (Melasma) are Mukhamagataya mandalam i.e., circumscribed patches over face, Shyavam i.e., Dark brown pigmentation of the facial skin, Kandu i.e., Itching and Parushasparsha i.e., Dry skin

- **Inclusion criteria:** Diagnosed case of Vyanga and Melasma and Patients with the age group 20-50yrs, Patients of both sex, patient‟s consent, All patients showing signs & symptoms of Vyanga i.e. blotchy Brown Pigmentation on cheekbone, forehead, nose, chin etc. were selected.

- **Exclusion criteria:** Patient suffering from Vyanga with Mukhadushika, Age<20yrs. and

  >50yrs, Birth mark on face, History of burn on face, Patient on any other medication for the same problem during study, taking oral contraceptive pills & injected depot contraceptive preparations, Exposed to consistent sun exposure.

- **Method of collection of data**

  Study design: Open non comparative study. Sample size: 30

  Chikitsa: Manjishthadi Taila- Route of administration – Locally dose: as per required, twice a day Treatment duration – 2 months, Follow up every 1 week for 2 months

- **Assessment criteria:** MASI (Melasma Area Severity Index) Score by Kimbrough-green et al. was used to calculate the Area of lesion and score was count in case record form.

  All the parameter of MASI were checked with subjective criteria.

	Forehead (30%)	**Right Malar Region (30%)**	**Left Malar Region (30%)**	**Chin (10%)**
A (% of Total Area involved)				
D(Darkness)				
H(Homogeneity)				

- **Area**

Area is considered as follows

1. Rt. malar region – 100 %
2. Lt. malar region – 100 %
3. Forehead - 100 %
4. Chin - 100 %

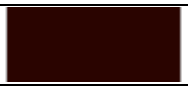
All these area are considered 100% each and distribution of pigmentation covered over each one of these is calculated as follows. 0 = no involvement; 1 = <10% involvement; 2 = 10-29% involvement; 3 = 30-49% involvement; 4= 50-69% involvement; 5 = 70-89% involvement; and 6 = 90-100% involvement.

Area was calculated subjectively for e.g. In one patient Rt. malar region is affected, 20% of the 100% of Rt. malar region. This involvement is calculated as 2. And this is evaluated as 2 in above table.

- **Darkness & Homogeneity:** 0 to 4 (0 = normal skin color without evidence of

hyperpigmentation; 1= barely visible hyperpigmentation/specks of involvement; 2 = mild hy-perpigmentation/small patchy areas of involvement <1.5cm diameter; 3 = moderate hyperpigmentation/patches of involvement> 2cm diameter; 4 = severe hyperpigmentation/uniform skin involvement without any clear areas)

Darkness was evaluated as follow.

0	1	2	3	4
Normal Skin Colour				

- **Total MASI Score**

Forehead 0.3 (D+H) A + Right malar 0.3 (D+H) A + Left malar 0.3 (D+H) A + Chin 0.1 (D+H) A

	Baseline	1 wk	2 wk	3 wk	4 wk	5 wk	6 wk	7wk	8 wk
Total MASI Score									

5. OBSERVATION AND RESULTS

Data obtained from pharmaceutical preparation, analytical evaluation, and clinical outcomes were systematically recorded and analyzed.

Table No. 3: Initial and final quantity of product Manjishthadi Taila.

Initial quantity				**Final quantity**		**Loss in quantity**
Taila	Kalka	Ajadugdha	Jal	MT	Kalka	Taila
1L.	312.5g	2L.	4L.	945 ml	278g	55 ml

Table No. 4: Taila siddhi lakshana.

Sr. No.	Lakshana (Classical Sign)	Observation
1.	Vartivat Sneha Kalka	Kalka was easily rolled into a soft, unbroken wick (varti), indicating proper consistency.
2.	Shabdahino Agni Niksiptah	No crackling or spluttering sound was observed, suggesting complete evaporation of moisture.
3.	Phenodgama Taila	Mild frothing noted during the terminal stage of heating
4.	Gandha Utpatti	A typical odour resembling was perceived which aligns with classical descriptions
5.	Varna Utpatti	The prepared Taila exhibited a dark brown colour
6.	Rasa Utpatti	Tasting was not performed

Analytical Study of Manjishthadi Taila: The analytical study like organoleptic and physico-

chemical parameters of Manjishthadi taila were carried out and results are given in Table no. 5 and Table no.6.

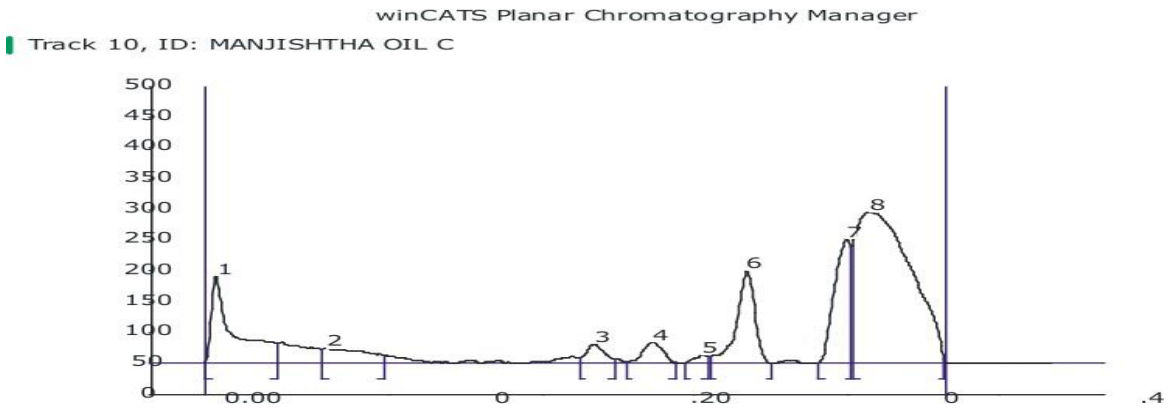
Table No. 5: Organoleptic observations of finished Manjishthadi Taila.

Sr No.	Observations	Manjishthadi Taila
1.	Appearance	Oily liquid
2.	Colour	Redish orange
3.	Odour	Strong of all ingredients
4.	Taste	Tikta, Kashaya
5.	Consistency	Oily

Table No. 6: Analytical observations of finished Manjishthadi Taila product.

Sr No.	Parameters	Values
1.	PH	4.46
2.	Saponification Value	103.36
3.	Iodine value	111.64
4.	Acid value	4.43
5.	Specific gravity	0.9192
6.	Moisture	0.136
7.	Refractive Index	1.477
8.	Viscosity	52.43

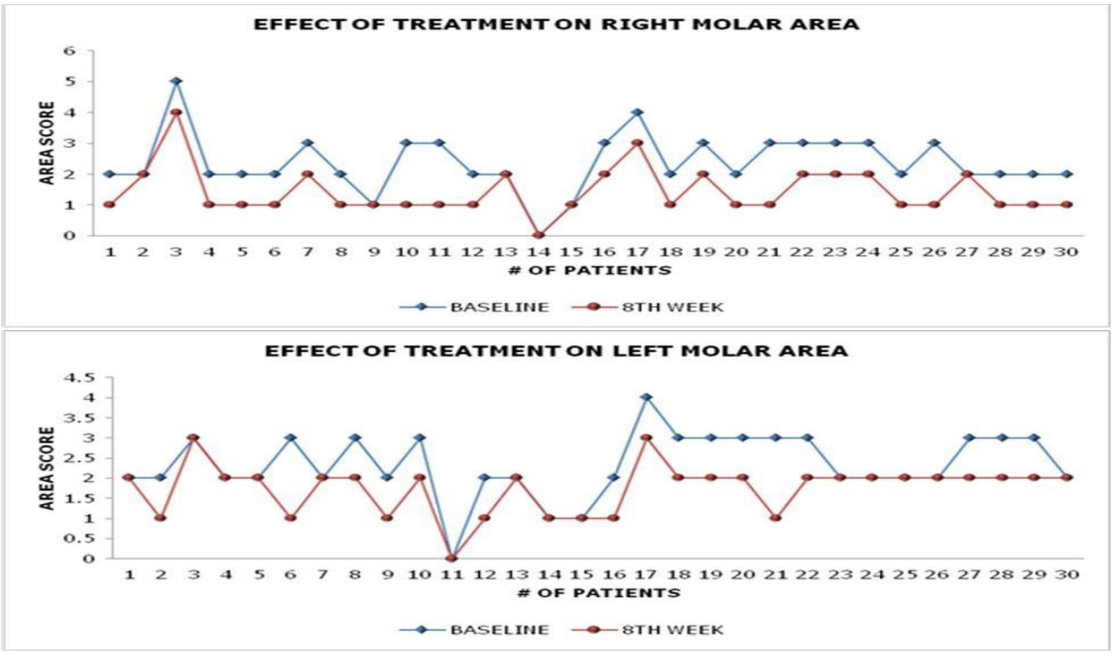
HPTLC: Manjishtha, Yashtimadhu and laksha, Tila taila were obtained with max. Rf. of 0.11, 0.63, 0.14, 0.83 respectively.



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	-0.04	4.1	-0.03	141.9	16.79	0.05	33.0	3587.:	12.75	unknown *
2	0.11	23.3	0.12	24.7	2.92	0.19	12.9	1185.3	4.21	unknown *
3	0.45	9.6	0.47	31.9	3.78	0.50	7.4	639.0	2.27	unknown *
4	0.51	2.7	0.55	34.7	4.11	0.57	1.5	781.9	2.78	unknown *
5	0.59	0.9	0.61	13.4	1.59	0.62	11.9	203.4	0.72	unknown *
6	0.62	12.0	0.67	150.6	17.83	0.70	0.9	3052.(	10.85	unknown *
7	0.76	0.5	0.80	201.8	23.89	0.81	189.0	3658.(	13.00	unknown *
8	0.81	192.7	0.83	245.8	29.10	0.93	6.4	15034.'	53.42	unknown *

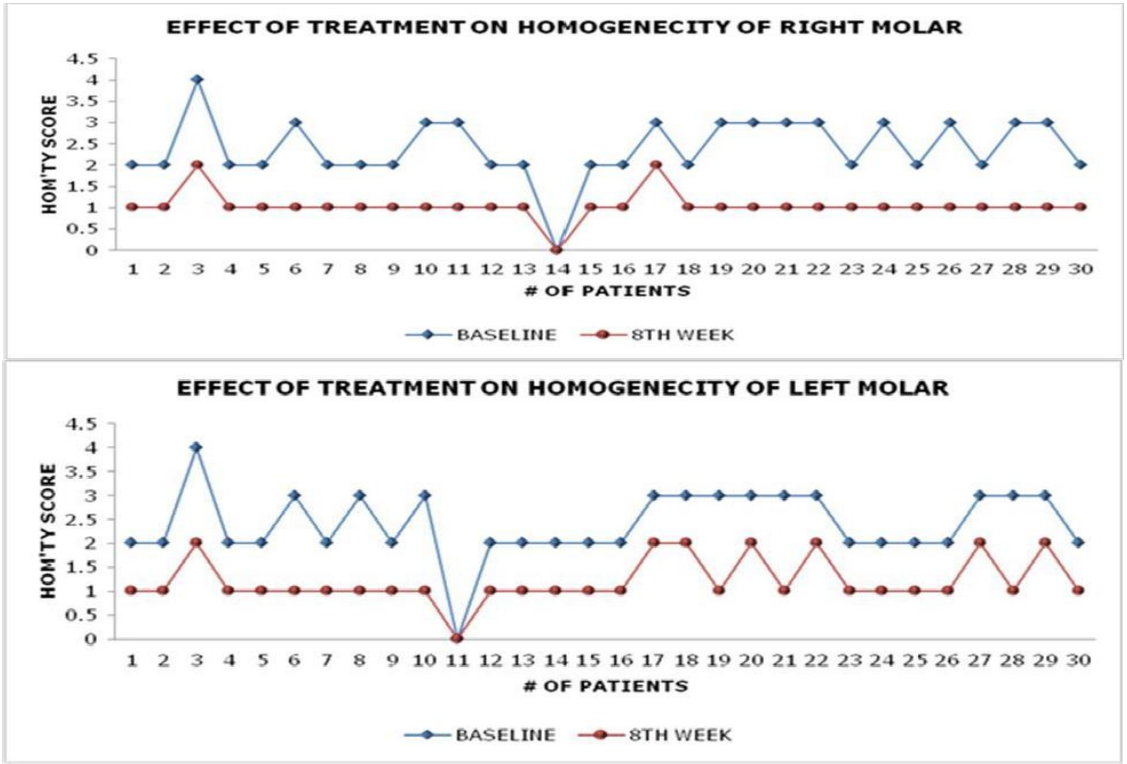
- **EFFECT OF TREATMENT ON VYANGA BY MASI FACTOR – AREA**

The below trend line shows the effect before and after the treatment



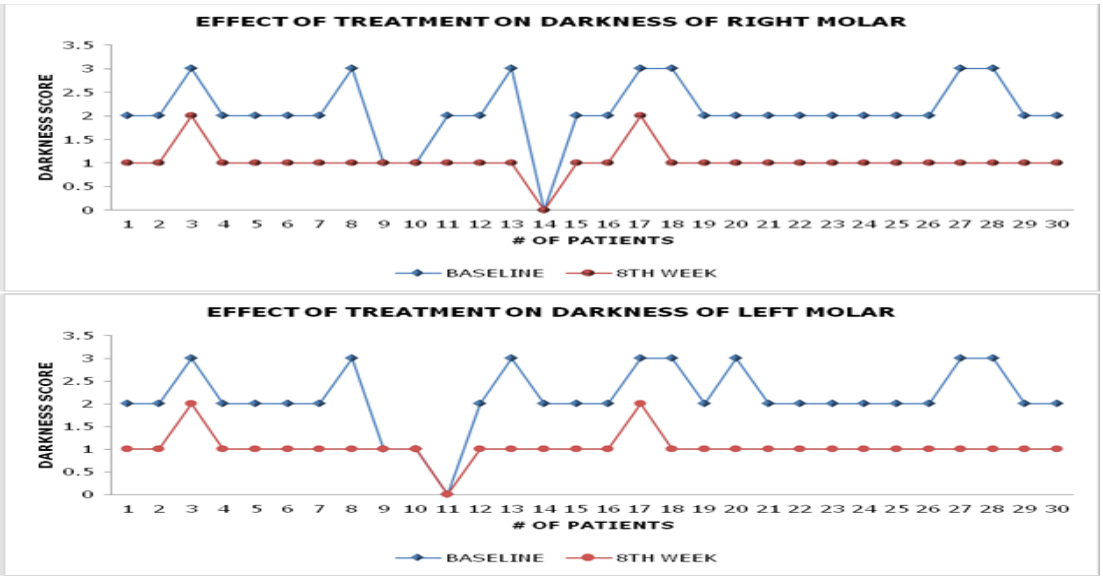
- **EFEECT OF TREATMENT ON VYANGA BY MASI FACTOR – HOMOGENEITY**

The above trend line shows the effect before and after the treatment

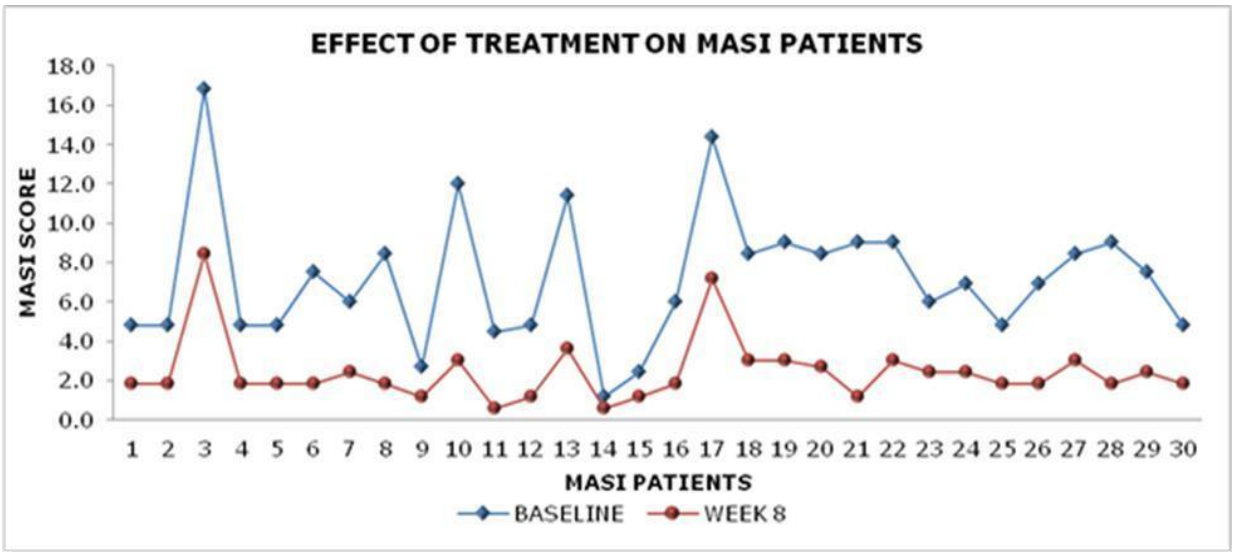


- **EFEECT OF TREATMENT ON VYANGA BY MASI FACTOR – DARKNESS**

The below trend line shows the effect before and after the treatment



EFFECT OF TREATMENT ON VYANGA AS WHOLE BY MASI SCORE



The line graph shows the MASI score for the entire sample before the treatment was in process and at the end of the 8th week i.e. result of improvement of treatment suggested. (The treatment suggested was application of ayurvedic oil over eight weeks.)

SEVERITY CATEGORIZATION OF MASI SCORE FOR PATIENTS

This table gives summary information for MASI patients categorized according to the severity. This is further classified for before and after treatment.

Table No. 7: No. of Patients Categorized Before And After Treatment For Masi.

	MILD	MODERATE	SEVERE	EXTREME	TOTAL
PATIENTS (BEFORE TREATMENT)	3	18	7	2	30

%	10%	60%	23%	7%	
PATIENTS (AFTER TREATMENT)	28	1	1	0	30
%	93%	3%	3%	0%	

Table No. 8: Observed Categorization scale.

MILD	MODERATE	SEVERE	EXTREME
1.2-4.2	4.2-8.4	8.4-12.8	12.8-16.8

Table No. 9: Percentage Distribution.

Observation (Findings)	Percentage
Age group, majority of 41-50 years	30%
Sex- Female	77%
Marital Status-Married	90%
Occupation- Housewife	40%
Prakruti (Vata-Pitta)	36%
Diet-Mixed	83%
Mental status-chinta	53%

DISCUSSION

The findings were critically interpreted in light of Ayurvedic principles and modern understanding. Manjishthadi Taila‟ a very simple classical formulation described in Yogaratnakar in (Kshudraroga /taila). Hence it was worthwhile to undertake this study. In Manjishthadi Taila nirman proportion of kalka dravyas, tila taila and drava dravyas is mentioned as per reference. Drava dravya is aja dugdha, yet water was added 4 times of tila taila according to samanya snehapaka lead in Sharangdhar samhita. Siddha Manjishthadi taila was completed in 2 nights & 3 days as per norms stated in Vaidyaka paribhasha pradeep. Considering Madhuk & Yashti both kalka dravyas mentioned, are the synonyms of single dravya Yashtimadhu, so Yashtimadhu was taken in double quantity.

Action of Manjishthadi taila on Vyanga

Vata, pitta as well as bhrajak pitta are vitiated in Vyanga. All these vitiated doshas are the etiological factors of Vyanga, which is exhibited on skin of face. The contents of Manjishadi taila alleviates pitta. The con tents of Manjishadi taila and Tila taila itself are varnya. As the effects of sneha kalpana properties of ingredients in the Manjishthadi taila are in-corporated in taila and due to Vyavayi property of tila taila, properties of contents penetrate the skin with help of Abhyanga. In this way, it al-leviates bhrajak pitta, vata and lightens the Vyanga disorder.

Clinical study Age wise

The maximum no. of patients suffering from this disease is between the age group of 40-45 years (30%) from the sample collected. Vata & pitta are predominating factors in age group 40- 45 yrs. It may be reason that there is higher incidence of Vyanga in this age group.

Sex and Age

The female patients (100%) dominant in 35-40 year‟ of age than male. In general, females suffering this disease (77%) are more than males (23%). It is more common in female, it can be attributed to pre-dominating agnimahabhuta in female.

Marital status

Out of 23 females in the sample, 22 - married and out of 7 males in the sample, 5 - married have suffered from the disease. Therefore, the posibility of suffering from this disease was more in married patients.

Occupation

The highest percentage of patients was observed to be housewives (40%).

Duration of disease

The patients (from collected sample) suffered from this disease were not more than 5 years.

Prakruti

Maximum patients (36%) were vata-pitta, followed by (27%) were pit-ta-kapha and also (27%) kapha-pitta. Commonly pitta was identified in all the patients suffering from this disease. Pitta and vata are etiological factors in vyanga, hence there is higher incidence Vata-pitta prakruti.

Aahar & Rasa

83% of patients follow mixed type of diet. The 90% of patients are found having katu rasa. Mix diet and katu rasa give rise to aggravation of vata and pitta because of this there may be higher incidance in patiant having mixed diet.

Krodha & Chinta

In this study, patient have had more or less Krodha or Chinta. The percentage of Chinta (53%) is more than that of Krodha (47%). Krodha and chinta causes aggravation of vata and pitta hence patient having krodha & chinta suffer from Vyanga more commonly.

Vyasana (addiction)

The consumption of vyasana does not prove to be the cause for Vyanga disease. This is because, the patients having vyasana and not consuming vyasana is if similar percentage (42%) in this sample.

Efficacy of Manjishthadi Taila on Vyanga by MASI factor Area

It may be interpreted that Rt. Malar region reduced by 38.13% and the Lt. malar region by 25%. There is considerable improvement in Rt. & Lt. malar region after the treatment. There were no patients with forehead and chin region involvement.

Efficacy of Manjishthadi Taila on Vyanga by MASI factor–Darkness

It may be interpreted that Rt. Malar region reduced by 50% and the Lt. malar region by 51.6%. There is considerable improvement in Rt. & Lt. malar region after the treatment. There were no patients with forehead and chin region involvement.

Efficacy of Manjishthadi Taila on Vyanga by MASI factor– Homogenecity

It may be interpreted that Rt. Malar region reduced by 57% and the Lt. malar region by 50%. There is considerable improvement in Rt. & Lt. malar region after the treatment. There were no patients with forehead and chin region involvement.

CONCLUSION

- Taila kalpana is one of the important kalpana, described in Bhaishajya kalpana. It is used in many ways i.e. internally as well as externally.
- Vyanga (circumscribed pigmentation) is very common disease world-wide. There is no effective treatment for Vyanga in modern medicine. There are many formulations mentioned in Ayurveda for the treatment of vyanga.
- Manjishthadi taila is one of these formulations. Survey indicates that Manjishthadi taila is not available in market. so, production of Manjishthadi taila is necessary.
- Literary review shows that ingredients of Manjishthadi taila are madhura, kashaya & tikta rasatmak and sheeta veerya; which are pittavatashamak. Pitta-vata are predominating factors in Vyanga.
- Moorchhana process has an important role in the process of tila taila siddhi.
- Manjishthadi taila has Saponification value, Iodine value, specific gravity, moisture content, Acid value, viscosity was 103.36, 111.64, 0.9192, 0.136, 4.43, 52.43 respectively. HPTLC fingerprint profiles evolved can be considered as important

parameter.

- Clinical study shows prevalence of the disease in women of age group 35-40 year. There is higher incidence of Vyanga in pitta-vata prakruti, 40-45 year of age group in females having mixed diet and katu rastmak aahar. It proves that the drug is 100% effective in Vyanga (Melasma) and the mean of the observations showing the efficacy was 66.4%.

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