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CLINICAL STUDY TO EVALUATE ROLE OF *VAMANA KARMA* & *SHASHANKLEKHADI GHANA VATI* IN THE MANAGEMENT OF *MANDAL KUSHTHA* W.S.R. TO PSORIASIS.

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ABSTRACT

Psoriasis is chronic inflammatory auto-immune disease with erythematous silver scaly plaque having relapse & exacerbation with prevalence of 0.03-2.5% in India. In *Ayurveda* counterpart it can be correlated with *Mandal Kushtha* having symptoms *Shweta–Rakta Utsannamandal* To develop effective Ayurvedic therapy the study was conducted in 30 clinically diagnosed patients of Psoriasis *(Mandal Kushtha)*. All patients divided into group A and Group B. Group A advised *Vamana Karma* after that *Shashanklekhadi Ghana Vati (Chakradatta 50/53)* & *Panchatikta Ghrita* for Local application. Where as in Group B advised standard allopathic drug Neotrexate (Methotrexate 7.5 mg per week) & Protar lotion (Coal tar & Salicylic acid) for local application. Study carried out for two months. Result of study shown that in Group A there is highly significant result in PASI Score (68.06%) score, Itching index index, Shweta *Rakta utsannamandal* ($p<0.001$) and significant result in Burning Index($p<0.05$) while Group B highly significant result in PASI Score (70.49%), Burning index , *Shweta-Rakta Utsannamandal* ($p<0.001$) and Significant in Itching Index. Group A patient shown less relapse (20%) over group B (40%).

KEYWORD: *Mandal Kushtha, Shashanklekhadi Ghana Vati, Vamana Karma,* PASI Score.

INTRODUCTION

Psoriasis is common, chronic, disfiguring, inflammatory and proliferative condition of the skin, in which both genetic and environmental influences have a critical role. The most characteristic lesions consist of red, scaly, sharply demarcated, indurated plaques, present particularly over extensor surfaces and scalp.[1] In *Ayurvedic* classics skin disorders are described under one broad term called *Kushtha Roga*, Careful study shows that there is resemblance in symptoms of *Mandal Kushtha* and psoriasis. *Shwetam, Raktam,Sthiram,Styanam,Utsannamandal*[2] *& Bahukandu* (*A.H.Ni* 14/17) *of Mandal Kushtha* can be correlated with erythematous silver scaly papule/plaque and itching which are diagnostic symptoms of psoriasis.

Among all dermatological problems psoriasis is one the most important condition with prevalence of 0.3 to 4.8% of the world's and approximately 0.44 to 2.2% Indian population with overall incidence of 1.02% It affects male and female equally, having incidence at any time throughout the life. In India the ratio of male to female is 2.46:1. Highest incidence was noted in the age group of 20-39 years in India.[3]

In modern science and *Ayurveda* a lot of research work has been done on etiology, pathophysiology and treatment of psoriasis. But still now effective and promising cure for psoriasis is not found. Allopathic drugs have hazardous side effects. So there is a need of era to develop some herbal treatment for psoriasis so, this study was planned.

AIMS AND OBJECTIVES

- Conceptual & clinical study on Psoriasis *(Mandal Kushtha)* according to *Ayurveda* as well as Modern science on various scientific parameters.
- Clinical evaluation of role of *Vamana Karma* & *Shashanklekhadi Ghana Vati* in management of Psoriasis. *(Mandal Kushtha)*
- A comparative clinical study of trial drug along with standard allopathic regimen.

MATERIAL AND METHOD

Selection of patient: The study was conducted on 30 clinically diagnosed and confirmed cases of Psoriasis (*Mandal Kushtha)* from OPD and IPD section of *Kayachikitsa* department, *Arogyashala*, National institute of *Ayurveda*, Jaipur & Skin department, SMS hospital Jaipur. Total 90 patients were screened out, in which ECG, chest X-ray, LFT and RFT to exclude major systemic illness was done and out of which 30 was taken for the study.

Criteria of diagnosis: The main criteria of diagnosis of patients were based on the cardinal and associated signs and symptoms of the disease based on the *Ayurvedic* and modern texts. These have been depicted in detail in the criteria of inclusion.

☐ **Inclusion criteria**

1. Patients who are willing for trial.
2. Patients in the age group of 16– 60 years.
3. Patients having chronicity of Psoriasis less than 5 years.
4. Patients of *Mandal Kushtha* will be diagnosed by *Ayurvedic* classics and Psoriasis will be diagnosed by modern classics.

☐ **Exclusion criteria**

1. Patients with age below 16 & above 60 yrs.
2. Pregnant women's & lactating mothers.
3. Patients suffering from serious systemic disorders like diabetes mellitus, cardiac & renal disorders, malignant disease, major liver disorders, immuno compromised host (HIV) etc.
4. Patients contraindicated for *Vamana* Karma as per classical *Ayurvedic Texts.*

Method of study (protocol of Study)

Consent: Written informed consent was taken on prescribed Performa before the inclusion of patient in trial. They are briefed about merits and demerits of research plan before taking consent.

Randomization of patients: Selected 30 patients divided randomly into two Group A and trial Group B (15 patients each)

- **Group A**: These patient were administered *Shashanklekhadi Ghana Vati* , 2 tablet twice a day after *Vamana Karma* while *Panchatikta Ghrita* for local application twice a day.
- **Group B**: These patient of were administered standard allopathic drug named Neotrexate (Methotrexate) 7.5 mg / week (2.5mg for 3 times at 12 hourly 8pm-8am-8pm) and Protar lotion (Coal Tar & Salicylic acid) for local application twice a day under observation of concern expert supervisor.

- Tab. Methotrexate is given along with Tablet Folic acid 5 mg once a day to encounter anemia which is due to bone marrow depression side effect of drug. It is allopathic protocol to use Methotrexate.

Method of Preparation

The ingredients of the decoction i.e. *Bakuchi*, *Vidanga*, *Pippali*,*Chitraka Amalaki*, had been taken into equal amount and decoction was made as per instructions in ***Chakradatta Kushtha Chikitsa shloka 53.*** Then the decoction was again heated for *Ghana (Rasakriya)*[4] then added *Mandoor Bhasma* after that, tablet of 500 mg each had made in *Rasayanshala*, *Rasashastra* Department ,National Institute of *Ayurveda*, Jaipur.(Drug licence no.776-D,Batch no.-A010).

- **Selection of trial drug:** *Shashanklekhadi Ghana Vati* (Followed by *Vamana Karma*)
- **Dose:** 2 gm / day (500 mg, 2 tablet twice a day)
- **Duration of Trial:** 2 months.
- ***Aushadha Sewana Kala***: Before meal.
- ***Anupana*****:** *Tila Taila*

Vamana Karma: Procedure of *Vamana* was carried out as follows,*For Pachana* advised ***Panchakol Churna*** 2 gm twice a day for 3 days, Followed by *Snehpana* with ***Panchtikta Ghrita*** till *samyak sneh- Lakshana* was observed, then *Sarvang Snehan Swedan* for two days were done. *Vamana* was induced by ***Madanphaladi yoga*** *(Madanphal Pippali Churna 4 part + Vacha 2 part +Saindhav 1 part+ Honey)* then *Dhoompana* and *Sansarjana Krama was* carried o

Study Design

- Randomized,
- Control
- Open Clinical trial.

Criteria of Assessment

Subjective parameters

1. PASI Score (Psoriasis Area & Severity Index)[5]

Elements

A. Body regions as percent of body surface area

B. Extent of body region affected

C. Extent of psoriatic changes

A. Body regions as percent of body surface area: http://www.dermnetnz.org/scaly/img/red1.jpg

Body Regions	Code	% Body surface area
Head	H	10
Upper extremities	U	20
Trunk region	T	30
Lower extremities	L	40

B. Extent of body region affected: Different Body regions & their extend indicator were tabulated as follows.

Percentage of body region affected	Extend indicator
0 – 5%	0
5 – 25%	1
25 – 45%	2
45 – 55%	3
55 – 75%	4
75 – 95%	5
95-100%	6

C. Extent of psoriatic changes

Symptoms	Code	Extend
Erythema	E	0 – 4
Infiltration	I	0 – 4
Desquamation	D	0 – 4

PASI = SUM (percent BSA in body region)* (extent Erythema in region) + (extent infiltration in region) + (extent desquamation in region)* (extent of body region affected) = [0.1* (Erythema head) + (infiltration head) + (desquamation head)* (extent of head affected)] + [0.3sss*(Erythema trunk) + (infiltration trunk) + (desquamation trunk)* (extent of trunk affected)] + [0.2*(Erythema upper extremities) + (infiltration upper extremities) + (desquamation upper extremities)* (extent of upper extremities affected)] + [0.4* (Erythema lower extremities) + (infiltration lower extremities) + (desquamation lower extremities)* (extent of lower extremities affected)].

Interpretation

★ **Minimum score – 0**

★ **Maximum score – 72**

Subjective parameters were done according to grading pattern which developed by Prof. R .K. Joshi et al.

2. *Kandu* (Itching index): Symptom rating scale was as follows

Sr.No.	Symptom	Grading
1	No itching	**0**
2.	Mild Itching comes occasionally, duration 2/3 min,	**1**
3.	Moderate itching occurs frequently, lasts for longer time, scratching is essential	**2**
4.	Severe Itching, Occurs frequently, lasts More than 20-30 min, bleeding on scratching	**3**

3. *Daha* (Burning index)

Sr.No.	Symptoms	Grading
1.	No burning	**0**
2.	Mild burning comes occasionally, duration 2-3 min.	**1**
3.	Frequent burning sensation more than 3 times last for 10 min.	**2**
4.	Severe burning sensation more than 5 times, lasting more than 15 min, disturbs daily routine	**3**

4. *Shweta-Rakta Utsannamandal* (Erythematous silver scaly lesion severity index)

Sr.No.	Symptoms	Grading
1	No macule/papule	**0**
2	Red colour macule/papule/plaque	**1**
3	Red colour papule/plaque with whitish tinge	**2**
4.	Red colour papule/plaque with large thick scales	**3**

Objective parameters

1. Hb%,,TLC, DLC.,ESR
2. Renal Function Test: (Sr.Creatinine, Blood Urea)
3. Liver Function Test : (SGOT,SGPT)

RESULTS

All the Results are calculated by using Software: **InStatGraphPad 3.**

The results were considered as bellow-

- Insignificant/Non significant : $P > 0.05$
- Significant : $P < 0.05$
- Highly significant : $P < 0.01$, $P < 0.001$, $P < 0.0001$

Table NO.01: Showing effect of therapy in Subjective parameters (within group) (Wilcoxon matched paired single ranked test)

Variables	Gr	Mean		Mean Diff.	% Relief	SD±	SE±	*p* value	S
		BT	AT						
PASI Sore	A	19.75	6.31	13.44	68.06	7.855	2.028	< 0.001	HS
	B	16.29	4.80	11.49	70.49	4.717	1.218	< 0.001	HS
Kandu (Itching Index)	A	2.53	0.40	2.13	83.52	0.639	0.1652	< 0.001	HS
	B	2.67	0.67	2.00	74.99	0.756	0.1952	< 0.001	HS
Daha (Burning Index)	A	1.27	0.27	1.00	78.93	1.000	0.2582	< 0.05	S
	B	1.20	0.20	1.00	83.33	0.845	0.2182	< 0.05	S
Shweta-Rakta Utsanna mandal le	A	2.67	0.87	1.80	67.49	0.862	0.2225	< 0.001	HS
	B	2.53	0.80	1.73	68.42	0.961	0.2482	< 0.001	HS

Effect on total PASI score

- In **Group A** the mean PASI Score of before treatment was 19.75. It lowered down to 6.31 with SD±7.495 giving a relief of 68.06 % which was statistically **highly significant.**
- In **Group B** the mean PASI Score of before treatment was 16.29.It lowered down to 4.80 with SD± 4.717 giving a relief of 70.49 % which was statistically **highly significant.**

Effect on *Kandu* (Itching Index)

- In **Group A** mean Itching index before treatment was 2.53 which was reduced to 0.40 with SD± 0.6399 showing 83.5177% relief which is statistically **highly Significant**.
- In **Group B** mean Itching index before treatment was 2.67 which was reduced to 0.67 with SD± 0.7559 showing 74.99 relief which is statistically **highly Significant.**

Effect on *Daha* (Burning Index)

- In **Group A** mean burning index before treatment was 1.27 which was reduced to 0.27 with SD± 1.000 showing 78.926% relief which is statistically **highly Significant**.
- In **Group B** mean burning index before treatment was 1.20 which was reduced to 0.20 with SD±0.845 showing 83.333 % relief which is statistically **significant**.

Effect on *Shweta-Rakta Utsannamandal*

- **In Group A mean *Shweta-Rakta Utsannamandal severity* before treatment** was 2.667 which was reduced to 0.87 with SD± 0.8619 showing 67.49% relief which is statistically **highly Significant**.

- In **Group B** means *Shweta-Rakta Utsannamandal severity* before treatment was 2.53 which was reduced to 0.8 with SD±0.9612 showing 68.42% relief which is statistically Highly **significant.**

Table No 02: Intergroup comparison of subjective parameters between Group A & Group B (Mann-Whitney Test)

Variable	Group	(AT-BT) Diff.mean	SD±	SE±	P	S
PASI Score	A	13.800	7.695	1.987		
	B	11.480	4.717	1.218	> 0.05	NS
***Kandu* (Itching Index)**	A	2.133	0.6399	0.1652		
	B	2.000	0.7559	0.1952	> 0.05	NS
***Daha* (Burning Index)**	A	1.133	0.8338	0.2153		
	B	1.000	0.8452	0.2182	> 0.05	NS
ShwetaRakta uttasanna mandal	A	1.800	0.8619	0.2225		
	B	1.733	0.9612	0.2482	> 0.05	NS

- All subjective parameters shown that there is no statistical difference between Group A and Group B

Table No .02 : Effect of drug on Objective parameters in both groups (Paired 't' test)

Variable	Gr.	Mean		Mean Diff.	% Relief	SD±	SE±	t value	P value	S
		BT	AT							
Hb% (gm %)	A	13.18	13.29	0.11	0.80	1.150	0.296	0.359	> 0.05	NS
	B	13.47	13.21	0.26	1.93	0.7129	0.184	1.412	> 0.05	NS
TLC	A	6813.3	6806.7	6.6	0.098	1148.0	296.4	0.022	> 0.05	NS
	B	8069.3	7258.7	810.6	10.05	781.92	201.8	0.132	> 0.05	NS
ESR	A	21.47	9.73	11.74	54.65	17.818	4.601	2.550	< 0.05	S
	B	18.60	6.27	12.33	66.31	11.968	3.090	3.991	< 0.05	S
Neutrophil	A	58.47	58.20	0.27	0.45	2.434	0.628	0.424	> 0.05	NS
	B	58.87	57.40	1.47	2.49	4.274	1.329	1.329	> 0.05	NS
Lymphocyte	A	36.13	35.53	0.60	1.66	7.707	1.990	0.301	> 0.05	NS
	B	34.60	35.20	0.60	1.73	4.532	1.170	0.512	> 0.05	NS
Eosinophil	A	3.133	2.667	0.466	14.90	0.990	0.255	1.825	> 0.05	NS
	B	3.267	2.800	0.466	14.28	1.727	0.445	1.047	> 0.05	NS
Monocytes	A	2.533	2.533	0.000	0.00	0.534	0.138	0.000	> 0.05	NS
	B	2.733	2.667	0.066	24.36	0.961	0.248	0.268	> 0.05	NS

Effect of therapy on ESR score in both groups

- In **Group A** the mean Score before treatment was **21.47** which lowered down to **9.73** after treatment, with SD±**17.818** giving (percentage of decreased) an improvement of **54.65**% which was statistically **significant (P<0.05).**

- In **Group B** the mean Score before treatment was **18.60** which lowered down to **6.27** after treatment, with SD±**11.968** giving (percentage of decreased) an improvement of **66.31** % which was statistically **significant (P<0.05).**
- In group A and Group B improvement in Hb%, TLC,DLC shown statistically **non significant** result **(P<0.05).**

Intergroup comparison

Table No 03: Intergroup comparison Objective parameters of both groups A & B (Unpaired t Test)

Variable	Gr.	(AT-BT) Diff.mean	SD±	SE±	t value	p	S
Hb%	A	0.8667	0.6789	0.1787	1.420	> 0.05	NS
	B	0.5667	0.4562	0.1178			
TLC	A	966.67	748.01	193.14	0.4329	> 0.05	NS
	B	849.33	736.63	190.20			
Neutrophils	A	1.867	1.506	0.3887	2.571	< 0.05	S
	B	3.733	2.374	0.6131			
Lymphocytes	A	5.933	4.698	1.213	1.642	> 0.05	NS
	B	3.667	2.554	0.6595			
Eosinophils	A	0.7333	0.7988	0.2063	0.6193	> 0.05	NS
	B	1.000	1.464	0.3780			
Monocytes	A	0.8000	1.207	0.3117	0.1919	> 0.05	NS
	B	0.7333	0.5936	0.1533			
ESR	A	14.267	15.714	4.057	0.3298	> 0.05	NS
	B	12.600	11.667	3.012			

- On intergroup comparison only Neutrophil count shown **significant** difference **(p<0.05)** & rest all parameters shown **non-significant result (p<0.05).**

Table No 04: Effect of drug on LFT and RFT in both groups

Variable	Gr.	Mean		Mean Diff.	% Change	SD±	SE±	T	P	S
		BT	AT							
SGPT	A	32.27	28.13	4.14	12.80	8.568	2.212	1.868	> 0.05	NS
	B	26.80	27.73	0.93	3.73	4.148	1.071	0.8714	> 0.05	NS
SGOT	A	30.87	31.40	0.53	1.73	13.892	3.587	0.8839	> 0.05	NS
	B	30.87	31.87	1.00	3.24	4.690	1.211	0.8257	> 0.05	NS
Sr. Creatinine	A	1.03	1.06	0.03	2.91	0.3034	0.0783	0.3574	> 0.05	NS
	B	1.08	1.10	0.02	1.85	0.1474	0.0380	0.5607	> 0.05	NS
Blood Urea	A	28.60	29.67	1.07	3.73	6.262	1.617	0.6597	> 0.05	NS
	B	27.72	28.40	0.68	2.48	3.614	0.9330	0.7359	> 0.05	NS

- All parameters of LFT & RFT shown **non-significant** result in Group A & Group B **(p>0.05).**

Intergroup comparison between Group A and Group B

Table No 06: Showing intergroup comparison between groups on effect of drug on LFT & RFT (Unpaired t Test)

Variable	Group	(AT-BT) Diff.Mean	SD±	SE±	t value	P	S
SGPT	Gr. A	7.067	6.181	1.596	2.386	> 0.05	NS
	Gr. B	2.800	3.121	0.8059			
SGOT	Gr. A	5.133	4.941	1.276	0.8360	> 0.05	NS
	Gr. B	3.933	2.549	0.6580			
Sr.Creatinine	Gr. A	0.2280	0.1928	0.0497	1.995	> 0.05	NS
	Gr. B	0.1200	0.0822	0.0212			
Blood Urea	Gr. A	4.867	3.944	1.018	1.396	> 0.05	NS
	Gr. B	3.220	2.305	0.5951			

- Intergroup comparison between Group A & Group B shown **non signicant result (p> 0.05)**

Follow-Up Study: After completion of trial follow-up for 2 months was observrd, which shows result as follows

- It revealed that in Group A out of 15 patients at the end of 2 months only 03 patients (20%) had signs of remission.
- While in Group B, 06 out of 15 patients **(40%)** had signs of remission.

PROBABLE MODES OF ACTIONS OF THE DRUG

1. SHASHANKLEKHADI GHANA VATI

▪ *Shashanklekhadi Ghana Vati* containing *Bakuchi, Vidanga, Pippali, Chitraka, Mandoor Bhasma, Amalaki.*

▪ *Bakuchi* is having *Katu, Tikta Rasa, Laghu, Ruksa Guna, Katu Vipaka so act as Dipana, Pachana,Yakritottejaka* which increases *Sara Guna* of *Pitta so act as Pittashodhaka* and *Vata-Kaphashamaka* . *Acharya Bhavaprakash mentioned it* is having *Twachya, Keshya, Kushthghna* and *Acharya Vagbhata* considered as *Rasayana* (*A.H.U.* 39/107) .So it eliminate root cause i.e. *Agnimandya* and also act as *Rasayana* for skin.

▪ As we know psoriasis is chronic inflammatory disease so research work proved that *Bakuchi* have Anti-inflammatory action so breakdown pathology. It also having Hepatoprotective, Anthelmintic effect, Antibacterial, Antifungal activity .Chemically *Bakuchi* having *Psoralens* and *isopsoralens* it is used in allopathic treatment in more than 30

diseases (our *Acharyas* called as *Rasayana*) including Psoriasis called as PUVA Photochemotherapy (*Psoralen* plus Ultraviolet A).*Psoralens* inter-reacts with ultraviolet rays of sunlight. It first act through liver.(*Yakritottejaka*) It suppreses DNA synthesis so inhibit epidermal proliferation also act as immunosuppresion of helper T-cells which get excessively activated so get relief in 90% patients by single PUVA therapy but it leaves black pigmentation as it stimulate melanocyte to produce melanin. *Psoralen* is lipophilic i.e. having better absorption in fat. *Acharya Chakradatta* has mentioned *Tila taila* as its *Anupana* so works effectively.(i.e.Lipid base for better absorption).

▪ *Vidanga* having *Katu, Tikta-rasa, Ruksha,Laghu,Tikshna-Guna, Ushna Virya, Katu Vipaka* so acts as *Kaphaghna, Jatharagnivardhak, Anulomaka, Krumighna.* It minimizes *Kledaka Kaphadushti* at site of lesion. It is mentioned as *Rasayana* (*A.H.U. 39/151*) *So Vidanga* breaks pathogenesis at various level of disease. Modern research proved that it having anti-inflammatory, antioxidant, antihelminthic, wound healing Anti-histaminic actions so contribute in improving disease.

▪ *Amalaki* having *Amla, Madhura, Kashaya, Tikta, Katu (Lawanrahita) Pancharasa, Shita Virya, Madhura Vipaka, Laghu, Rukshya Guna. Amla Rasa* act as *Vathara, Madhur, Shita* acts as *Pittashamaka (i.e. Dahashamaka), Ruksa, Kashaya* act as *Kaphaghna (i.e. Kandughna) So Amalaki is Tridoshaghna. (Acharya Bhavprakash)* as all *Kushtha* are *Tridoshaja* so act on it. *Amalaki* is well known *Rasayana* so it improves *Dhatuposhana Krama* and produce healthy *Rasa-Raktadi Dhatu (Dhatushodhaka)* which is affected in *Kushtha* i.e. stops *Uttarottaradhatu Pravesha* of *Kushtha* reduces exacerbations of disease.

▪ As psoriasis is autoimmune inflammatory disease, *Amalaki* proved to be immunomodulatory, anti-inflammatory effect. So it minimizes hyper activity of helper T cells and maintains its function normal and reduces inflammatory mediators which causes severe itching.

▪ *Pippali* having *Katurasa, Laghu, Snigdha, Tikshna, Ushna Veerya, Madhur Vipaka Snigdha , Ushna* act as *Vatashamaka,* while *Katu,Laghu,Tikshna act as Kaphaghna.*It is *Rasayana* works on *Jatharagni* and *Dhatwagni* level enters into microchannels so eliminate *Shithila Dhatu.* So *Pippali* works at *Agni* level *and Dushita Dhatu* level and breaks pathogenesis.Modern research proved that *Pippali* having Immunomodulatory, Antiinflamatory, Hepatoprotective so reduces pathogenesis of Psoriasis.

▪ *Chitraka* having *Katu Rasa, Laghu, Ruksha, Tikshna Guna, Ushna Veerya, Katu-Vipaka* act *as Kaphvata Shamaka, Strotoshodhaka, Kushthaghna,Lekhana, Bhedana.* It eliminate *Stroavarodha* condition and improves *Dhatuposhana Krama.Acharya Vagbhata* mentioned it as *Rasayana* (*A.H.U.39/62*) *Chitraka* having Anti-inflammatory, Immunomodulatory (as *Rasayana*), anti-oxidant action so reduces pathogenesis.

▪ *Mandoora Bhasm* having *Madhura, Kashaya-Rasa, Sheeta-Virya, Raktavardhak, Sheeta Guna, Mahura Vipaka* so act as *Pittashamaka* works at *Raktadhatu* level. *Mandoor* having *ferrous oxide* as chemical content so Haematanic effect had been proved. As psoriasis is chronic inflammatory disorder so leads to anemia so *Mandoor Bhasm* correct it.

So most drugs of *Shashanklekhadi Ghan Vati* have *Rasayan, Tridoshaghna, Dipana, Pachana* properties while according to modern science all content of trial drug have Anti-inflammatory, Immunomodulator, Anti-helminthic properties so breaks pathogenesis at various level and improve patient.

2. *PANCHATIKTA GHRITA*[6]

▪ It contains *Vasa, Nimb, Patol, Guduchi & Kantakari*. All these drugs having *Tikta Rasa, Kandughna* & *Kusthagna* property.

▪ According to modern research proved that *Vasa* having anti-ulcer property, *Nimba* having antimicrobial, *Guduchi* having Immunomodulator, Anti-oxidant, Anti-inflammatory, *Patola* having Anti-inflammatory, Immunomodulator, Hepatoprotective and *Kantakari* having Anti-histaminic, Anti-inflammatory and Cytotoxic action so breaks pathology.

▪ The patches of Psoriasis are dry & Scaly. The *Panchatikta ghrita* provides proper moisture to it resulting in slowing of rapid turnover of epithelium. As dryness reduces some sort of soothing analgesic effect is experienced by the patient. Commonly itching experienced by the psoriatic patients is due to excessive dryness of lesions so local application of *Panchatikta ghrita* shown beneficial results to patients.

▪ When scales of psoriasis are removed tiny bleeding points (Auzpits sign) are observed. As *Tikta rasa* has potent *Vranshodhan* &*Vranropan* property & *Ghrita* is well known for its healing action results in proper early healing of lesions of Psoriasis.

▪ According to Dermal drug delivery system of modern science skin shown the better absorption of lipid & lipid soluble substances than water soluble molecules.

▪ So according to this theory *Panchatikta Ghrita* shown better penetration in skin than other *snehas* with carrying properties of drugs added to it.

▪ As excessive intake of *Sneha* & *Snigdha* items is mentioned as one of the causative factor of *Kuhstha* so *Siddha Ghrita* has always preference over the *Acchasneha*. *Acaharya Charak* specifically mentioned that while giving *Snehana* to patients of *Kustha, Shotha* & *Prameha* one should always use the *Siddhasneha.*

▪ *Ghrita* is mentioned as *Vatapittashamaka, Varnaprasadan, Medhya Rasayana*, etc. and has a remarkable property to assimilate the properties of other substances when added to it (*Samskarsya Anuvartanam)*. So adding drugs which have potent *Kushthagna Kandughna, Varnya, Kaphapittashamak Rasayan* properties along with anti-inflammatory, Analgesic, Antioxidant properties can shown synergistic effect & ultimately results in early recovery of patients.

3. MODE OF ACTION OF *VAMANA KARMA*

▪ *Sanshodhana* therapy has its key strength in preventing relapse of disease. *Acharya Charak* has specifically mentioned that there is a chance of recurrence of disease when treated with only *Shamana* Therapy (Internal medicine) but when *Sanshodhana* is done there is no chance of recurrence or it is reduced significantly As recurrent relapse is the major problem for Psoriasis patients so the *Vamana Karma* were proved beneficial in preventing relapse.

▪ *Vamana* is indicated for *Kapha* predominant disease So *Vamana Karma* ultimately pacify the basic causative factors (*Doshas & Shithila Dhatu*) which result into early recovery.

▪ *Vamana Karma* shown a significant reduction in level of Malondialdehyde (MDA) which is a free radical & significant increase in Super oxide Dismutase (SOD) & Glutathione reductase (GSH) which proves potent action of these two procedures in reducing the oxidative stress[7]

▪ *Vamana Karma* acts on microcellular level, eliminates the toxins (Vitiated *Doshas*) from body & helps in maintaining normal functioning of body. It strengthens the immune mechanism and helps in preventing relapse. It is just act as medicated purification of the body so eliminate *Dushit Dosha-Dushya* and prevent recurrence of disease.

So from *Shodhana Karma*, we conducted *Vamana Karma* for this trial and as a *Shamana* therapy *Shashanklekhadi Ghana Vati* was administered only after successful completion *Shodhana*.

CONCLUSION

▪ As Psoriasis have different morphological variants and that changes from patient to patient it is very difficult to exactly co-relate with any *Ayurvedic* entity. According to symptoms of disease in *Ayurveda* to maximum extend we can co-relate with *Mandal Kushtha* as Psoriasis. As maximum patients registered in trial also seen symptoms of *Mandal Kushtha* , so at last we conclude that *Mandal Kushtha* of *Ayurveda* can be taken as Psoriasis in modern counterpart.

▪ Observations of current study reveals that psoriasis has peak incident at 3nd and 6thth decade of life, affecting more males than female (1.7:1), environmental changes, stress and smoking plays the major role in development of disease.

▪ Modern medicine Tablet Neotrexate (Methotrexate) is found more effective (**70.49%**) in reducing PASI Score but comparatively *Ayurvedic* trial drug also shown highly significant results (**68.06%**) which cannot be neglected.

▪ Methotrexate is well known allopathic drug supposed to be gold standard drug for moderate to severe psoriasis by the dermatologist. Intergroup comparison of two groups shown no statistical significant difference in the efficacy of both groups. This reveals that trial drug is also as much potent in management of *Mandal Kushtha* (Psoriasis).

▪ Better results were shown by *Ayurvedic* formulation in *Kandu (*Itching*)* and significant in *Daha (*Burning*),* while highly significant in *Shweta-Rakta Utsannamandal* (Erythematous silver scaly lesion).

▪ Statistically highly significant results in reduction of ESR highlights the anti-inflammatory action of both *Ayurvedic* and control drug.

▪ Methotrexate didn't show significant increase in LFT & RFT levels but it is well known hepatotoxic and excreted through kidney so impaired renal function but we used less dose for small duration. Though it is within the normal range but long term administration drug may deteriorate the liver functions and renal function. As patients of psoriasis almost always

need longer duration of treatment further trial on large number of sample size is needed to rule out any side effect.

▪ Follow up after two months of successful completion of study shown that *Ayurvedic* formulation **(20%)** has better role in prevention of relapse of disease as compare to allopathic counterpart **(40%)**. This shown that *Ayurvedic* formulation not only controls the disease but also significantly prevents its relapse.

▪ Hence it can be concluded that *Vamana Karma* & *Shashanklekhadi Ghana Vati* are beneficial and safe as compare to allopathic medicine.

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