



ISSN : 2347-2251

**Indo-American Journal of
Pharma and Bio Sciences**



www.iajpb.com

iajpb.editor@gmail.com
editor@iajpb.com



Using Benzyl Benzoate and Ivermectin Topically to Treat Scabies (Pama Kushtha)"

Mrs. K LAKSHMI THULASI , Mr. B SUDHAKAR NAYAK , Mrs. VENKATA KUMARI MUDIGONDA
Asst Prof^{1,2,3}

M.PHARMACY- Pharmaceutical Analysis¹, B.PHARMACY^{2,3}

Nimra College of Pharmacy, Jupudi, Krishna District, Andhra Pradesh-521456.

ABSTRACT: Historical context: Pama is a Kapha-Pittaja disease, which is very prevalent in children. In the eyes of modern medicine, this may be a case of scabies. Scabies is a contagious skin condition that may quickly spread across a community. Scabies affects a disproportionate number of young people. The itch mite "SarcoptesScabiei" is responsible for this condition.

Sharangadharasamhita recommends using ArkaTaila for the external treatment of Pama since it contains constituents with Kushtaghna, Kandughna, and Krimighna characteristics. GandhakaRasayana is recommended in yogaratnakara for the internal treatment of Pama since its components include kandughna, krimighna, and kustanashaka characteristics.

Keywords: scabies , pama , Arkataila , GandhakaRasayana , Ivermectin , Benzyl Benzoate.

INTRODUCTION:

Ayurveda is a system of medicine that focuses on promoting health and preventing illness via practices such as "Swasthasya Swasthya Rakshanam" and "Aaturasya Vikara Prashanam Cha" (meaning "the eradication of disease through the use of natural means").¹ A person's good skin and overall health contribute to their attractiveness and beauty.

Since the Vedic and, later, the Samhita kala periods, skin problems have been a focus of Ayurvedic treatment. Due to the prevalence of external medications in the management of skin disorders, the current study "A

I. AIMS AND OBJECTIVES OF THE STUDY

- To study the effect of Tab.GandhakaRasayana internally and ArkaTaila externally in the management of pamakushtha.
- To study the effect of Tab. Ivermectin internally and Benzyl benzoate externally in the management of Pama Kushtha.
- To compare the efficacy.

II. MATERIAL AND METHODOLOGY

Clinical study:

The present study "A clinical study to evaluate the effect of GandhakaRasayana with ArkaTaila external application and ivermectin with benzyl benzoate in the management of scabies (Pama)" has been designed with following aims & objective.

Source of Data:

- 2000 boys hostel of gavimath ,koppal.

Sample size:

40 diagnosed children of PamaKushtha which fulfilling the inclusion criteria were selected.

Inclusion criteria:

1. Children of either sex diagnosed as the case of PamaKushtha (scabies).
2. Children between the age group of 5 to 15 years.

Exclusion criteria:

1. Kushtha other than Pama(scabies).
2. Children who suffering from any other systemic disorder.
3. Pama(scabies) associated with immunodeficiency disorder.
4. Scabies with complication of crust or hyperkeratosis.

Diagnostic Criteria:

The symptoms of Pama/scabies mentioned in classical texts, in addition to the signs and symptoms mentioned in contemporary texts.

Method of administration of drug:

BAHYA: ArkaTaila applied over the affected area for 7 days after hydration based on BSA as per classics.

ABHYANTARA: Tab.GandhakaRasayana in two divided doses along with sugar internally has been given.

Observation period:

Drug is applied for 7 days and then clinical response was assessed on 7th day and follow up was done on 21st day for assessing condition of Pama.

Instruction to the Parents / Guardian

- The sensitivity test of the Taila conducted before initiation of treatment with 0.5 ml test dose.
- Patients are advised to not wear any cloths for at least 30 min. over affected area after application of drugs for its better absorption.
- They were strictly advised, not to give any other medication during the trial except for most essential ones.
- For proper observation and evaluation, the patients is advised to come for follow up on 7th, 14th and 21st day of treatment to assess the recurrence of disease.

Investigations

Generally a clinical diagnosis is considered as sufficient.

Parameters of Assessment:

Symptoms Before treatment (1st day) After treatment (7th day) After Follow-up (21st day)

- 1.Kandu-itching
- 2.Toda-pain
- 3.Daha-burning
- 4.Pitika - eruption
- 5.Srava-discharge

1.KANDU -ITCHING (5D-ITCH SCALE)

1.Duration: During the last 2 weeks , how

Assessment of gradings:

- 1.Symptoms 0 1 2 3
- 2.Toda (Pain) No Toda Mild (Occasional pain) Moderate (Pain without disturbed sleep) Severe (Pain with disturbed sleep)
- 3.Daha (Burning) No Daha Mild (Occasionally burning) Moderate (Continuous burning without disturbed sleep) Severe (Continuous burning with disturbed sleep)
- 4.Pitika (Eruption) No Pitika Mild (10 or fewer lesion) Moderate (11-49 lesions) Severe (50 or more lesion)
- 5.Srava (Discharge) Absent Present

Observations:

It was observed that all 40 children (100%) were presented with Kandu and Pitika where as 25 children (62.5%) were presented with Toda and children having complained of Srava-19(47.5) and Daha(45%).

many hours a day have you been itching?

a. Less than 6hrs/day b. 6-12hrs/day c. 12-18hrs/day d. 18-23 hrs/day e. All day

2.Degree: Please rate the intensity of your itching over the past 2 weeks

a. Not present b. Mild c. Moderate d. Severe e. Unbearable

3.Direction: Over the past 2 weeks has your itching gotten better or worse compared to the previous month?

a. Completely resolved b. Much better but still present c. Little bit better but still present d. Unchanged e. Getting worse

4.Disability: Rate the impact of your itching on the following activities over the last 2 weeks

A. Sleep -1. never affects sleep 2. occasionally delays falling asleep 3. frequently delays falling asleep 4. delays falling asleep and occasionally wakes me up at night 5. delays falling asleep and frequently wakes me up at night.

B. Leisure/Social , C. Housework/Errands , D. Work/School -1. N/A 2.

never affects this activity

3. rarely affects this activity. 4. frequently affects this activity 5. always affects this activity.

5.Distribution: Mark whether itching has been present in the following parts of your body over the last 2 weeks . If a body part is not listed, choose the one that is closest anatomically.

A. Head /scalp B. face C. chest D. abdomen E. back F. buttocks G. thighs H. lower legs I. tops of feet

/toes J. soles K. palms L. tops of hands/fingers M. forearms N. upper arms O. groins P. points of contact with clothing (e.g waistband , undergarment).

III. Results:

Overall effect of therapies on Pama:

By comparing groups, after treatment the mean score for Kandu is 0.50 in group A and 0.50 in group B, Daha is 0.30 in group A and 0.25 in group B, Toda is 0.35 in group A and 0.25 in group B, Pitika is 0.45 in group A and 0.50 in group B , Srava is 0.20 in group A and 0.10 in group B.

By comparing groups, after treatment the mean score for Kandu is 0.35 in group A and 0.25 in group B, Daha is 0.15 in group A and 0.05 in group B, Toda is 0.15 in group A and 0.05 in group B, Pitika is 0.30 in group A and 0.25 in group B , Srava is 0.15 in group A and 0.05 in group B.

In this study out of 40 children, marked improvement were seen in 55% in group A and in 45% in group B children, followed by moderate improvement were seen in 20% in group A and in 40% in group B children , 20% children in group A and 15% children in group B shows mild

improvement and 5% children in group A and 0% children in group B were found unchanged.

In this study out of 40 children, marked improvement were seen in 65% in group A and in 80% in group B children, followed by moderate improvement were seen in 25% in group A and in 20% in group B children, 5% children in group A and 0% children in group B shows mild improvement and 5% children in group A and 0% children in group B were found unchanged.

IV. DISCUSSION:

Discussion on mode of action of drug:

Acharya Charaka states that, some drugs act through Rasa, some through Virya, some through their Gunas, some through their Vipaka and some through their Prabhava. Here these drugs may be act due to their Tikta and KatuRasa predominant. They also have Laghu, RukshaGuna and Kapha-VataShamaka properties which may helps to cure the Pama.

At the level of Dosha:

Because of its Laghu & TikshnaGuna, Tikta & Katu Rasa & Ushna Virya act as Kaphashamaka and by Tikta rasa act as Pitta shamak.

At the level of Agni:

By virtue of its TikshnaGuna which is predominant with Agni, Vayu and Akash Mahabhuta, UshnaVirya, Tikta and Katu Rasa it stimulates Agni which in turn stimulates all other Agni.

In Pama, there is mainly Rasa dhatwagnidushti (Twaka represents the Rasa dhatwagni) due to vitiation of Bhrajaka Pitta & KledakaKaphadosha. This ultimately results in Aama formation. This Aama obliterates the sukshama pores of Twacha and creates Klinnata which produces characteristic features of Pama. ArkaTaila have properties like, Tikta, Katu Rasa, KatuVipaka, Laghu, Tikshna Guna. It acts as Agni Dipaka & Aamapa chaka. This results in to the proper functioning of Rasa- dhatwagni which helps to break the samprapti.

Tikta Rasa and Laghu, RukshaGuna helps in destruction of Pitika by going in to sukshmasrotas of Twacha. Thus, the drug i.e. ArkaTaila acts on disease Pama and helps to overcome disease process and provides beneficial action.

The present work contains a clinical study to evaluate the effect of Gandhaka Rasayana with ArkaTaila external application and ivermectin with Benzyl Benzoate in the management of scabies (pama).

MODE OF ACTION OF IVERMECTIN

It is an extremely potent semisynthetic derivative of the antinematodal principle obtained from streptomyces avermetilis. Ivermectin is the drug of choice for single dose treatment of onchocerciasis and strongloidosis.

Ivermectin is well absorbed orally, widely distributed in the body, but does not enter CNS. Sequestered in the liver and fat and has a long terminal $1\frac{1}{2}$ of 48-60 hours. It is metabolized by CYP3A4, but no drug interaction related to this isoenzyme are known. Side effects have been mild giddiness, nausea, abdominal pain, lethargy and transient ECG. Changes but more important are the reactions due to degeneration products of the Mf, which are similar to those occurring after DEC. Safety of ivermectin in pregnant women and young children is not established.

Ivermectin is anti-helminthic drug has been found highly effective in scabies and pediculosis as well. It is the only orally administered drug used for ectoparasitosis. A single 0.2 mg/kg dose has cured upto 91 to 100% patients of scabies. AIDS patients with scabies also respond. Most cases of head/body lice have been successfully treated.

Ivermectin is very well tolerated by scabies and pediculosis patients with few if any side effects. However it is not to be given to children less than 5 years, pregnant and lactating women. Only limited use of ivermectin has been made in scabies and pediculosis because of the availability of efficacious topical agents.

MODE OF ACTION OF BENZYL BENZOATE

It is an oily liquid with faint aromatic smell, has been popular for treatment of scabies. The emulsion is applied all over except face and neck after a cleansing bath.

It exerts toxic effects on the nervous system of the parasite, resulting in its death. It is also toxic to mite ova, though its mechanism of action is unknown. In vitro, benzyl benzoate has been found to kill the sarcoptes mite within 5 minutes. It penetrates and destroys the nervous system of the insect and produce insecticidal action. This will produce distortion and consequent excitation of nerve impulse transmission in the insect. Only a minimum amount of Benzyl benzoate is absorbed after topical administration.

A second coat is applied next day which is washed after 24 hours. The treatment is convenient and does not interfere with routine activities. It has achieved 76 to 100% cure in

scabies. Benzyl benzoate is minimally absorbed through the skin, systemic toxicity is low, but neurological symptoms have occurred in children.

For pediculosis, it can be applied to the scalp, taking care not to enter eyes, and is washed off after 24 hours. Benzyl benzoate is now a 2nd choice of drug for scabies and seldom used for pediculosis. Its combination with lindane is highly effective.

On Overall Effect of the Therapies:

In this study out of 40 children, marked improvement were seen in 65% in group A and in 80% in group B children, followed by moderate improvement were seen in 25% in group A and in 20% in group B children, 5% children in group A and 0% children in group B shows mild improvement and 5% children in group A and 0% children in group B were found unchanged.

On Re-occurrence Pama: In this study there was no re-occurrence of Pama on day 21. It indicates that there was no early recurrence of disease.

V. CONCLUSION:

The following conclusions can be drawn from the data collected: Pama is a KshudraKushtha with Kapha-Pitta dominance according to Charaka and Vagbhata, Pittaja according to Susruta; Pama in modern science has been correlated with Scabies, which is a common skin disorder.

The current study's sample was skewed toward children aged 10-15, consistent with the higher-than-average prevalence of Pama in this demographic. However, definitive conclusions have to be drawn from research involving a large sample of youngsters.

Disease may not have a rational explanation in the Hindu culture, where it occurs at a rate of 96.67 percent in men and 33.33 percent in females.

□ Sixty percent of kids have evidence from their families or friends that they've been exposed to Pama, making it an AoupsargikaRoga with contagious tendencies.

□ The most significant etiological reasons for the infestation of Pama are poor personal cleanliness, poor domestic hygiene, low living conditions, and ignorance about the health.

□ KaphajaLakshana involvement was more common in Pama sickness.

According to the distribution of patients by their symptoms, Kandu and Pitika are more prevalent in Pama than in Srava, although Toda and Daha are less frequent.

□ Pama responds well to both internal and exterior applications of Tab. Gandhaka Rasayana and Arka

Taila. The findings revealed that Kandu was reduced by 69.92%, Pitika by 54.38%, and Srava by 76.67%. This treatment is not only beneficial for Pama but also relatively affordable.

Sixty-five percent of the 40 students in Group A of this research saw improvement in their pama scores after using the Tab. Gandhaka Rasayana and Arka Taila applications.

Tab. Ivermectin internally and Benzyl benzoate external application (Group B) showed 80% better results on scabies than Tab. Gandhaka Rasayana internally and Arka Taila external application (Group A), according to the study's authors.

□ This study, meanwhile, was only undertaken for a limited amount of time and with a limited sample size as part of a larger educational research program. To determine the drug's effectiveness on Pama, bigger, multi-center clinical and experimental investigations are needed.

REFERENCES:

- [1]. Chowkhamba Sanskrit series office, Varanasi, India, 2017, page no. 600 of the reprint version of Charaka Samhita edited by R.K.Sharma and Bhagwan Dash with English commentary in cakrapaniDatta's Ayurveda dipika.
 - [2]. Professor P.V.Tewari's English translation and commentary of Kashyapa's Samhita, originally published in 1996, may be found on page 97 of the chaukhambha vishvabharati edition published in Varanasi, India.
 - [3]. To cite this page: Charaka Samhita, edited by Acharya vidyadhar Shukla and Prof. Ravi Dutt Tripathi, with vaidyo manorama hindi commentary, forward by Acharya Priyavrata Sharma, volume 2, chikistasthana verse no.7/25, chaukhamba Sanskrit pratishthan, Delhi, India, 2013; page 184.
- Yogaratanakara, first edition, part 2, verse no.76/(28-31) by Drs. Asha Kumari and Premvati Tewari, chaukham bhavisva bharti, Varanasi, India, 2010; page 1249. Page 129 of the reprint version of the Sharangadhara Samhita with an English translation by Professor K.R. Srikanthamurthy, chaukham bhaorientalia, Varanasi, India, 2012.
- Page 37 of the reprint version of the Susrutha Samhita by Priya vratsharma, which includes an English translation of the original text and Dalhana's commentary on it, as well as a number of critical remarks, was published by the Chaukham Bhavisva

- Bharati in Varanasi, India, in 2005.
- Reprint edition, chikistasthana verse 6/24, chaukhambha visvabharati, Varanasi, India-2008, page 330 of the Bhela Samhita edited by professor priya vratsharma, with English translation, commentary, and critical annotations.
- Page 430 of the first edition of Harita Samhita edited by Vaidya jayminipandey and including Nirmala hindi commentary, published by Chaukhambha Bhavisva Bharati in Varanasi, India, in 2010.
- For example: [8] Kashyapa Samhita, first edition, chikistasthana verse no.9/2, chaukhambhavisvabharati, Varanasi, India, 1996, page no.197, edited by Prof.(Km) P.v.Tewari with English translation and discussion by Drs. Neeraj kumar, R.D. Sharma, and Abhimanyu kumar.
- Text and English translation of the Astangasangraha of Vagbhata, by Professor K.R.Srikanthamurthy; first edition; volume 2; verses 14/8-11 and 21/87-88; chaukhambha Orientalia; Varanasi, India; 2005; pages 236 and 506.
- Dr. Madham Shetty Suresh Babu's Yogaratnakara, translated and edited by him First edition of the Sanskrit text with an English translation, book 2, verse 36, Uttaradhi, on the subject of ekadashakustha and ksudrakustha, chowkhamba Page number 942 of the Sanskrit series published in 2008; published in Varanasi, India.
- Hutchinson clinical technique (An integrated approach to clinical practice, 22nd edition, 2007, Sounders Elsevier publisher, London, page no. 251), [11].
- Pathology Textbook [12] Harsh Mohan, Jaypee Brothers Medical Publishers, 6th Edition Reprinted in 2013: Volume 3, Chapter 26: The Skin, Page 768.
- Page 593 of the 11th edition of Suraj Gupte's The Short Textbook of Pediatrics (Jaypee Brothers Medical Publishers, 2014) [13].
- Davidson's Principle and Practice of Medicine, 19th edition, Reprint 2005, Churchill Living Stone, China, page 1085, 21st chapter, Skin disease by international editor John A.A. Hunter [14].
- Piyush Gupta and O. P. Ghai's "Textbook of Preventive and Social Medicine," 2nd edition, CBS Publishers and distributors, 2007. Page 312.
- Park, K., "Park's Textbook of Preventive & Social Medicine," 21st edition, BanarasidasBhanot Publishers, Jabalpur, India, Chapter 13, page 721.
- From the reprint version of 2005 (2012, page numbers 96-97/1533) of Bharat bhaishajyaratnakara, Ayurvedagrantha, Dwitiya bhaga by sri nagininaschaganlaal shah rasavaidyena. Printed and distributed by B.Jain Private Limited in New Delhi, India.
- Essentials of Medical Pharmacology, Seventh Edition, KD Tripathi, Jaypee Brothers Medical Publishers Private Limited, New Delhi, India, 2013, Chapter 61, Pages 855-854 [18].
- Essentials of Medical Pharmacology, Seventh Edition, KD Tripathi, Jaypee Brothers Medical Publishers Private Limited, New Delhi, India, 2013, Chapter 61, Page No.903.
- The 17th edition of Nelson's Text Book of Pediatrics (2004; Reed Elsevier India Private Ltd; New Delhi) [20].