

## Clinical Research

# Clinical effect of *Kukkutanda Twak Bhasma* in the management of *Swetapradara*

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Access this article online

Website: [www.ayujournal.org](http://www.ayujournal.org)

DOI: 10.4103/0974-8520.93917

Quick Response Code:



## Abstract

*Swetapradara* is an important gynecological disorder nowadays. Most women in the reproductive age group complain about white discharge. Due to white discharge, they are prone to so many other symptoms, such as backache, itching in vulva, and burning micturition. According to *Ayurveda*, *swetapradara* is caused by the vitiation of *Kapha* and *Vata dosha*. *Kukkutanda twak* is also said to be *Kapha Vata shamaka* and *swetapradara shamaka*. In *Ayurveda* so many drugs are mentioned in the treatment of *swetapradara*. Among them *Kukkutanda twak bhasma* is a good medicine. In this clinical study *Kukkutanda twak bhasma* has shown statistically significant improvement in white discharge, backache, itching, anemia, weakness, and urinary tract infection.

**Key words:** *Bhasma, Kukkutanda twak, leucorrhoea, Swetapradara*

## Introduction

*Swetapradara*, one of the most common manifestations of gynecological disorders, is an important psychosomatic disorder affecting the psychology of women irrespective of socioeconomic status, occupation, and others. It occurs not only by the dysfunction of reproductive organs but also due to abnormality in general health factors. Although it seems to be a negligible symptom initially, if not treated in time leads to many major complications. The symptoms of *swetapradara* either physiological or pathological results into great discomfort and deep agony in the individuals.<sup>[1]</sup>

The treatment of this manifestation, although virtually depends on its etiopathology, invites immediate measures. The modern treatment involves systemic and local antibiotics and surgical methods, which will create a number of inconveniences during their usage.<sup>[2]</sup> *Ayurveda* provides many alternatives and can prove a boon to the ailing humanity not only by curing the disease, but also by preventing their recurrences. Keeping this in view, it becomes necessary to explore some curative, safe, and economical remedy, which can help the poor.<sup>[3]</sup>

According to *Ayurveda* *swetapradara* is caused by the vitiation of *Kapha* and *Vata dosha* in the body. *Kukkutanda twak* is also said to be *Kapha Vata shamaka* and *swetapradara shamaka*. Hence an

attempt has been made to establish the efficacy of *Kukkutanda twak bhasma* in the management of *Swetapradara*.<sup>[4]</sup>

## Objective

Evaluate the efficacy of *Kukkutanda Twak Bhasma* on *swetapradara* (nonspecific leukorrhea).

## Materials and Methods

For the present study 30 patients were selected from inpatient and outpatient departments of Gopabandhu Ayurveda Mahavidyalaya, Puri, during the period of June 2002 to June 2003.

## Criteria for selection

- The selection was done on the basis of chief complaints of *swetapradara*, such as vaginal discharge, itching of the vulva associated with backache and general weakness.
- In pathological point of view vaginal smear, blood, stool and urine examination was carried out during the course of the treatment.<sup>[5]</sup>

## Exclusion criteria

The following cases were excluded from the study.

- Positive history of venereal diseases
- Positive PAP smear
- Diabetic cases
- Genital prolapse
- Anemic conditions
- Uterine tumor and other growths.<sup>[6]</sup>

## Trial drug

*Kukkutanda Twak Bhasma*.

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## Preparation of the trial drug

Prior to the incineration process, the *Kukkutanda twak* was subjected to *Shodhana* by *Swedana* process in *Kanji* through *Dola yantra* for 12 h. Thereafter the *twak* was washed thoroughly with lukewarm water and dried in sun rays.

After drying it was made into coarse powder and triturated with lime juice for 2 days and subjected to two *Gaja putas*. The reduced powder was again triturated with pulp of *Kumari* for 2 days and subjected to three *gaja putas*. Finally the *Kukkutanda twak Bhasma* was collected from the *saravasamputa* and preserved in air tight containers.

## Treatment schedule

*Kukkutanda twak bhasma* was administered at the dose of 500 mg, twice daily orally for 3 months.

To administer the *Bhasma*, a suitable liquid media (*anupana*) is necessary. Among different *anupanas*, *Madhu* was selected in the present study, as it is said to be *yogavahi*, has effect over *Kapha*, *Rasa* is *Kashaya* and *Madhura* with *Ruksha*, *Guru*, and *Sheeta guna*, having *Chhedana*, *Lekhana*, *Ropana*, and *Sandhana karma* and also acts as *Brimhana*.

All the patients were advised to avoid the usage of food substances and other acts, which exacerbate *Kapha* and *Vata*. The patients were also advised for follow-ups at regular intervals.<sup>[7]</sup>

## Assessment criteria

The cases were assessed by subjective and objective parameters, before and after treatment. The parameters are Amount of Discharge, Consistency, odor, pH, Pus cells, Epithelial cells, Backache, Itching, Hb%, and so on.

## Assessment scale

The following pattern of scale was prepared and used for the estimation of the severity of the disease and to record the clinical outcome.

- (i) Amount of Vaginal Discharge:
  - G<sub>0</sub> – No discharge
  - G<sub>1</sub> – Use of 1–2 pads a day.
  - G<sub>2</sub> – Use of 3–4 pads a day.
  - G<sub>3</sub> – Use of 5 or more pads a day.
- (ii) Consistency:
  - G<sub>0</sub> – No discharge.
  - G<sub>1</sub> – Mucoid discharge.
  - G<sub>2</sub> – Watery discharge.
  - G<sub>3</sub> – Curdy discharge.
- (iii) Odor:
  - G<sub>0</sub> – Absent.
  - G<sub>1</sub> – Present.
- (iv) Vaginal pH:
  - G<sub>0</sub> – 4 to <5
  - G<sub>1</sub> – 5 to <6
  - G<sub>2</sub> – 6 to 7
  - G<sub>3</sub> – More than 7
- (v) Pus cells:
  - G<sub>0</sub> – Not found.
  - G<sub>1</sub> – Occasionally found under HP field.
  - G<sub>2</sub> – 1–3 cells found under HP field.

G<sub>3</sub> – >4 cells found under HP field.

- (vi) Epithelial cells:
  - G<sub>0</sub> – Not found.
  - G<sub>1</sub> – Occasionally found under HP field.
  - G<sub>2</sub> – 1–3 cells found under HP field.
  - G<sub>3</sub> – >4 cells found under high power field.
- (vii) Back ache:
  - G<sub>0</sub> – No pain.
  - G<sub>1</sub> – Pain without the disturbance of work
  - G<sub>2</sub> – Pain with partial disturbance of routine.
  - G<sub>3</sub> – Pain with disturbance of work and sleep.
- (viii) Itching:
  - G<sub>0</sub> – No itching.
  - G<sub>1</sub> – Occasional itching.
  - G<sub>2</sub> – Itching with partial disturbance in work.
  - G<sub>3</sub> – Itching disturbs daily routine and sleep.
- (ix) Anemia:
  - G<sub>0</sub> – >11 gm%.
  - G<sub>1</sub> – 9–11 gm%.
  - G<sub>2</sub> – 7–9 gm%.
  - G<sub>3</sub> – <7 gm%.

## Clinical assessment criteria

The clinical assessment was done on the basis of the following criteria:

- Cure: 100% free from the chief and associated complaints.
- Maximum improvement: 75% to <100% free from the chief and associated complaints.
- Moderate improvement: 50% to <75% free from the chief and associated complaints.
- Mild improvement: 25% to <50% free from the chief and associated complaints.
- No improvement: <25% free from the chief and associated complaints.

All these observations are subjected to paired *t* test to evaluate the significance of the treatment and the effectiveness was assessed through *P* value.

## Dashavidha pareeksha

### Sharira prakriti

- While considering the *prakriti*, the incidence of *Vata–Pitta* (64.46%) and *Pitta–Kapha* (33.88%) had found more in this series.
- In the chapter of *Yonivyapada*, it is mentioned that “*na hi vatadrite yonirvitanam pradushati*” (A.S. Ut.39/52) means this disorder does not occur without vitiation of *vata*. And *Yonitah Srava* is found in many *Yonivyapada* those are described in disease review. *Vitiated Apana Vayu* produces *swetapradara* because its main *Karma* is *Pravartna* of *Yonisrava* is also one of the *Karma* of *Apana Vayu*. In this way, *Apana Vayu* plays an important role in the manifestation of *swetapradara*.
- *Vitiated Kapha* also plays a major role in *Samprapti Ghataka* by producing *Ama* in the body, which is also described in *Samprapti*. “*na paakah pittadrite*” (Su. Su.17/7) means onset of suppuration and formation of pus occur due to *Pitta Prakopa*. So, *Pitta* is one of the

responsible factor for producing vaginal discharge in the cause of vaginitis, cervicitis, and others. So, it is justified that women of *Vata-Pitta* and *Pitta-Kapha Prakriti* are prone to *swetapradara*.

### Mansa prakriti

- The observations through the enrolled patients revealed that, 80% - 90% have *Rajasika Prakriti*.
- The *Rajadosha* patients are well known for their negligency towards body care and other activities. So, they are not so much aware about their personal hygiene, which may create *swetapradara*.

### Sara, samhanana, pramana, satmya, satva

- In the present study, maximum number of patients (73.55%) are having *Madhyama sara*, *Madhyama samhanana* (69.42%), *Madhyama pramana* (66.94%), *Mishra Rasa Satmya* (94.21%), and *Madhyama Satva* (80.16%).
- The data suggest that this disease, is prevalent among those who are not in the peak of their health. Here, it is also reflected that the people who have, for example, *Madhyama Sara*, take more stress and strain and they mostly suffer from either psychological or somatic disorders. Moreover, *Atichintana*, *Krodha*, and others are found moderately in these people. And all these factors are important cause of psychosomatic disorders, including *swetapradara*.
- Further the data also denote the predominance of *Madhyama Satva* and others among general population of today's fast life style.

### Kayataha

- In the present study, the incidence was found highest in *Yuvavastha* of *Stri* (89.26%).
- It is already discussed in age-related data that during this *Avastha* (16–40 years), active sexual life, reproduction, hormonal imbalances, take place, which may lead to *shwetapradara*.

### Desha

- The data show that majority of the patients (95.87%) were from *Jangala Desha*. The location of the hospital is in Jamnagar, which comes under the criteria of *Jangala Desha*, therefore all the patients were from *Jangala Desha*. Although, no definite inference can be drawn, yet we can say that the *Vata Pradhana* nature of *Jangala Desha* can be one of the causative factors of this disease.

### Vyayama Shakti and Ahara Shakti

- In the present study, maximum number of patients (67.77%) had *Madhyama Vyayama Shakti*, *Madhyama Abhyavaharana Shakti* (66.11%), and *Madhyama Jarana Shakti* (63.63%). It is very difficult to establish the relationship between the disease and the obtained findings.

### Agni

- The data show that maximum numbers of patients (57.02%) were having *Vishamagni* followed by 28.10% were having *Mandagni*.

Due to *Vishamagni* or *Mandagni*, *Ahara* is not properly digested and *Ama* is produced. *Ama* itself is a causative factor for manifestation of all kinds of diseases in general and *shwetapradara* in particular.

The improvement found in white discharge with the treatment of 1 month, 2 months and 3 months was found to be 83.33%, 93.33% and 96.66% respectively [Table 1].

In consistency of discharge improvement was found 43.33%, 56.67% and 86.67% with the treatment of 1 month, 2 months and 3 months respectively [Table 1].

Improvement in back-ache was found to be 60% and 70% with the treatment of 1 and 3 months respectively [Table 1].

Itching in vulva was reduced to 41.17%, 82.35%, 94.11% respectively with the treatment of 1 month, 2 months and 3 months [Table 1].

The vaginal pH was found to be restored at the end of the treatment in most of the registered cases (90%).

Pus cells and Epithelial cells were also found to be reduced at the end of the treatment, while the hemoglobin percentage was increased in 83.33% of cases [Table 1].

Table 2 shows the average percentage of improvement of different signs and symptoms and laboratory findings after 1, 2, 3 months of treatment. The improvement of various signs and symptoms, such as the amount of discharge were 56.66%, 68.88%, and 79.99%; consistency were 34.44%, 47.77%, and 70.55%; odor 40%, 80%, and 80%; pH 23.33%, 43.33%, and 73.33%; pus cells were 27.2%, 36.10%, and 66.10%; epithelial cells were 26.10%, 43.32%, and 65.54%; backache 30%, 40%, and 60%; itching were 23.52%, 38.23%, and 76.47%; and Hb% 17.24%, 37.93%, and 63.79%, respectively.

The result of the present study was assessed as cure, maximum improvement, moderate improvement, mild improvement, and unsatisfactory. The improvement was assessed after 1, 2, and 3 months of treatment.

It was observed that after 1 month of treatment no patients was cured and no patients were in maximum improvement. There were 6 (20%) cases in moderate improvement, 15 (50%) patients in mild improvement, and in 9 (30%) patients the improvement was unsatisfactory.

**Table 1: The percentage of the patients attained improvement after treatment with reference to different signs and symptoms**

Sign and symptoms	A.T.		A.T.		A.T.	
	(1 <sup>st</sup> month)		(2 <sup>nd</sup> month)		(3 <sup>rd</sup> month)	
	f	%	f	%	f	%
White discharge	25	83.33	28	93.33	29	96.66
Consistency	13	43.33	17	56.67	26	86.67
Odor	2	40	4	80	4	80
Backache	6	60	7	70	7	70
Itching	7	41.17	14	82.35	16	94.11
Pus cells	16	53.33	22	73.33	27	90
Epithelial cells	21	70	26	86.67	27	90
Hb%	10	33.33	21	70	25	83.33

Hb - Hemoglobin

After 2 months of treatment it was observed that no patients were cured and no patients had maximum improvement. There were 16 (53.33%) patients in moderate improvement, 11 (36.67%) patients in mild improvement, and 3 (10%) patients were unsatisfactory.

But after 3 months of treatment it was observed that 9 (30%) patients were cured, 8 (26.67%) patients were on maximum improvement, 6 (20%) patients were in moderate improvement, and 7 (23.33%) patients were in mild improvement [Table 3].

## Results

Statistical analysis suggests that the administration of *Kukkutanda twak bhasma* is highly significant in treating almost all the major symptoms of *swetapradara* (ie, discharge, itching, consistency, pH, pus cells). In all these cases the *P* value was found as <0.001 at the end of the treatment.

Improved levels of Hb% were found in anemic cases also. The *P* value found in this case was <0.001. This improvement may be due to the presence of high concentrations of calcium, magnesium, and calcium carbonate in the trial drug, which stimulates the hemopoieses.

The treatment was found less significant in controlling symptoms, such as backache and bad odor. The *P* value in these cases were <0.005 and <0.05, respectively. pH value in most of the cases came to normal. Laboratory findings also supported all these findings.

The overall result of the clinical study shows that 9 (30%) patients were totally cured from the symptoms. Eight cases (26.7%) showed maximum improvement, 6 cases (20%) moderately improved, and mild improvement was observed in the remaining 7 cases (23.3%) at the end of the treatment [Table 4].

## Discussion

In *Ayurveda* almost all the gynecological disorders are described under a broad heading “*Yonivyapad*.” Direct references of *swetapradara* are not available in *Samhitas*. However, some references of white discharge from vagina are available under the heading of *yonivyapad*. According to the signs and symptoms and etiologic factors mentioned in *Ayurvedic text*, *swetapradara* is a condition where vitiation of *Kapha* and *Vata* are predominant. As regards, incidence, ill health and undernutrition is the highest, that is, 25.4% and 20.6% patients are of psychologic origin.<sup>[8]</sup>

*Kukkutanda twak* have the *Kapha Vata Shamaka* properties, which can subside the vitiation of *Kapha* and *Vata* in *swetapradara*.

*Kukkutanda twak bhasma* has also been indicated in *Rakta pradara*, *Prameha*, *Mutraroga*, *Vatavikara*, and *Mansik Daurbala*. It also has the properties of *rasayana*, *balya*, and *shakti vardhaka*. The *Bhasma* was administered with *Madhu* as *anupana*.<sup>[9]</sup>

The clinical study of *Kukkutanda twak bhasma* is done on 30 selected *swetapradara* patients. The patients are selected from outpatient department and in the dose of 500 mg twice daily with honey for 3 months. In the present study it is observed that

**Table 2: The average percentage of improvement of sign and symptoms after treatment**

Sign, symptoms and laboratory findings	A.T. (1 <sup>st</sup> month) %	A.T. (2 <sup>nd</sup> month) %	A.T. (3 <sup>rd</sup> month) %
Amount of discharge	56.66	68.88	79.99
Color	34.44	47.77	70.55
Odor	40	80	80
pH	23.33	43.33	73.33
Pus cell	27.2	36.10	66.10
Epithelial cell	26.10	43.32	65.54
Backache	30	40	60
Itching	23.52	38.23	76.47
Hb%	17.24	37.93	63.97

Hb - Hemoglobin

**Table 3: The clinical assessment of results**

Clinical assessment of result	A.T. (1 <sup>st</sup> month)		A.T. (2 <sup>nd</sup> month)		A.T. (3 <sup>rd</sup> month)	
	f	%	f	%	f	%
Cure	0	0	0	0	9	30
Maximum improvement	0	0	0	0	8	26.67
Moderate improvement	6	20	16	53.33	6	20
Mild improvement	15	50	11	36.67	7	23.33
No improvement	9	30	3	10	0	0
Total	30	100	30	100	30	100

N, total number of patients; f, no. of patients; %, percentage.

**Table 4: Statistical data of the symptoms at the end of the treatment**

Symptom	Mean ± SD	t	P value
Discharge	0.4 ± 0.49	8.6	<0.001
Consistency	0.43 ± 0.5	11.5	<0.001
Odor	0.2 ± 0.44	4.05	<0.05
Vaginal pH	4.8 ± 0.26	19.31	<0.001
Pus cells	0.63 ± 0.49	10.89	<0.001
Epithelial cells	0.63 ± 0.49	10.94	<0.001
Backache	0.6 ± 0.51	3.99	<0.005
Itching	0.35 ± 0.49	10.67	<0.001
Hb%	10.78 ± 0.53	20.72	<0.001

active reproductive age group and house wives are more prone to the disease due to lack of conscious effort in maintaining their normal hygiene, carelessness regarding their own wellbeing and irregular diet habit.

It is revealed from the present study that maximum number of patients 83.33% belong to average and poor nutritional status, which indicates that nutritional factor has a key role in causing of nonspecific leukorrhea. At the end of the treatment, it was observed that, there was a decrease in the amount of white discharge to 79.99% (*P* value <0.001). In the present study, although the total number of patients of the trial group is very small the result was encouraging. *Kukkutanda twak bhasma* can be administrated safely in cases of nonspecific leukorrhea

without having any unwanted effects. No toxic effects were noted in a single case during the trial. The *Kukkutanda twak bhasma* can also be used to improve the Hb% in cases of anemia.

### Mode of action of the drug

*Kashaya Rasa* is predominant in *kukkutandtwak bhasma*. It drives off *kleda* by virtue of *sangrahi*, *soshana*, *stambhna*, and *shleshma prashamana* properties of *kashaya rasa* (ch. An. 29/42)

*Kashya rasa* is mainly formed by conjugation of *vayu* and *prithvi mahabhuta*. Both have opposite qualities of *Dravya Guna*. So this helps in decrease of *srava*.

- *Kukkutandtwak bhasma* is mainly having *ruksha guna*. *Ruksha guna* by virtue of its *shoshana* action restrain *srava*.
- *Kukkutandtwak bhasma* is *sheeta virya*. A drug by virtue of its *virya* mainly acts in *srotasa*. *Sheeta virya* drugs act in *srotasa* and cause *stambhana*. By this way trial drug restrain *srava* by *stambhana* action in *srotasa*.
- This *bhasma* is a *Rasa* preparation, so may act quickly and enter into the *srotas* by *tikashana guna*. During *bhasma* preparation it may implant the *yogavahi guna* to the *Bhasma*. So the *bhasma* may act quickly and in smaller dose.

### Conclusion

The people who are in active reproductive age group, who fall under low economic status, who observe poor sanitation, and individuals with poor nutrition, inadequate, irregular

diets are more prone to this disease. Psychologic disturbances are the main exacerbating factors. The oral administration of *Kukkutanda twak bhasma* gives effective results in this pathologic manifestation. It had no side effects and is a potent, effective, economical, easily available compound. In cases of anemia also this drug will provide satisfactory results.

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## हिन्दी सारांश

## श्वेतप्रदर में कुक्कुटाण्डत्वक भस्म का प्रभाव

गतिकृष्ण पण्डा, के. बी. महापात्रा

इस रोग में योनि से अधिक मात्रा में श्वेत स्राव निकलता है। आयुर्वेद में इसके लिए असंख्य प्रतिरोधक चिकित्सा बताई है। जिसका आधार रुक्ष एवं उष्ण आहार विहार है। आयुर्वेदिक ग्रंथों में कुक्कुटाण्डत्वक भस्म का प्रयोग बताया गया है। जो कि कफ वात शामक है और रसायन बल्य है। इसलिए कुक्कुटाण्डत्वक भस्म की क्षमता का ज्ञान चिकित्सीय तौर पर किया गया है। जिसमें पाया गया कि प हले मास में ६०% महिलाओं को कुक्कुटाण्डत्वक भस्म से लाभ मिला। २ मास के बाद ९३.३३% और ३ मास बाद ९६.६६% महिलाओं को लाभ मिला। श्वेत स्राव में पूय कोशिका ७३.३३% तक ठीक हो गई। स्त्री जननांग में कण्डू में ७६.४७% तक लाभ मिला। इसलिए कुक्कुटाण्डत्वक भस्म श्वेतप्रदर में सबसे उत्तम औषधि साबित होती है।