



Case Study

AYURVEDIC MANAGEMENT OF VULVOVAGINAL CANDIDIASIS WITH LOCAL APPLICATION OF GUDUCHI-TRIPHALA-DANTI GEL

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Article info

Article History:

Received: 19-03-2024

Accepted: 12-04-2024

Published: 04-05-2024

KEYWORDS:

Vulvovaginal candidiasis, Slaishmiki yonivyapat, Guduchi-Triphala-Danti gel.

ABSTRACT

Vulvovaginal candidiasis is the infection of the vaginal mucosa and/or vulva caused by the *Candida* species, a gram-positive yeast-like fungus. It is the second most common vulvovaginal infection characterized by thick-curdy white-cottage-cheese type vaginal discharge and intense vulvovaginal pruritus. Symptomatically vulvovaginal candidiasis can be compared with *Slaishmiki yonivyapat* in Ayurveda, the line of management of which is the use of *Ruksha* and *Ushna aushadha*. Local application of gel has the advantages of easy administration, more bioavailability of drugs, and prolonged retention without much local irritation. The classical *Guduchi-Triphala-Danti pariseka yoga*, mentioned in *Yonivyapat chikitsa* has been modified into a gel form, facilitating self-administration by women. **Methodology:** Here is a case report of a 31-year-old multiparous woman who presented with complaints of curdy white vaginal discharge associated with itching over the vulvar region for the last 6 months. She was diagnosed with vulvovaginal candidiasis by vaginal swab culture. Intervention with *Guduchi-Triphala-Danti* gel was carried out for 14 days for 2 consecutive cycles excluding days of menstruation and followed up after the next 30 days without medication. **Results:** After completion of the treatment protocol there was substantial relief of symptoms like curdy white vaginal discharge and itching over the vulvar region, wet-mount microscopy was negative for pseudohyphae, and the vaginal swab culture showed no growth. **Conclusion:** Local application of *Guduchi-Triphala-Danti* gel was found to be effective in the management of vulvovaginal candidiasis.

INTRODUCTION

Vulvovaginal candidiasis or Moniliasis is the second most common vulvovaginal infection affecting women of reproductive age. It is caused mainly by *Candida albicans*, while other closely related species are also increasingly isolated. The prevalence of vulvovaginal candidiasis was found to be 31.6%^[1]. The incidence of self-reported history of at least one episode of vulvovaginal candidiasis is very high. 70% of women have at least one episode in their lifetime. Vulvovaginal candidiasis is highly recurrent; thus, 40-45% of women have two or more episodes within their lifetime.

Pathogenesis of vulvovaginal candidiasis remains controversial. It results from inflammatory changes in vulvovaginal epithelium secondary to candidial infection. *Candida albicans* is an opportunistic pathogen and is common when local or systemic immunity is deficient^[2]. The patient complains of vaginal discharge with intense vulvovaginal pruritus in vulvovaginal candidiasis. The pruritus is out of proportion to the discharge. There may be dyspareunia due to local soreness. On examination, the discharge is thick, curdy white, and in flakes (cottage cheese type) often adherent to the vaginal wall^[3].

Symptomatically vulvovaginal candidiasis resembles the features of *Slaishmiki yonivyapat* mentioned in Ayurvedic literature. In *Slaishmiki yonivyapat*, *Kapha* aggravated by *Abhishyandi nidanas* affect the genital tract of woman and cause *Picchila* (unctuous), *Sheeta* (cold), *Pandu varna* (pale white colour) *Yonirava* (vaginal discharge), *Kandu* (itching),

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|  | https://doi.org/10.47070/ijapr.v12i4.3180 |
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Alpavedana (dull pain) (Charaka) or *Avedana* (absence of pain) (Vagbhata)^[4,5]. *Ruksha Ushna oushadha prayoga* is the line of management for *Slaishmiki yonivyapat*. *Sthanikachikitsa* (local treatments) is a vital part of *Yonivyapat chikitsa*. *Guduchi-Triphala-Danti kwatha pariseka* has been mentioned for management of *Yonivyapat* ^[6-9]. Gel is a commonly used vaginal drug delivery system. The topical application of medicines helps to provide better availability and quicker target-oriented action^[10].

Case Report

Patient Information

A 31-year-old multiparous woman presented with complaints of curdy white vaginal discharge associated with itching over the vulvar region for the last 6 months. On speculum examination, thick curdy white discharge and unhealthy cervix were observed and on per vaginal examination, the uterus was normal, anteverted, and with free fornices. Wet-mount microscopy revealed the presence of pseudohyphae, and vaginal swab culture revealed heavy growth of *Candida albicans*. Pap smear for cervical/vaginal cytology was negative for intraepithelial lesion or malignancy.

Significant and relevant past illness was not observed. No relevant family history was found. As she was reluctant to take allopathic medication, she

Dasavidha pareeksha

| | | | |
|----------|---------------------------|---------------------------------|------------------------------------|
| Dooshyam | Rasa, Rakta, Meda, Artava | Prakriti | Kapha-Pitta |
| Desam | Aanoopa | Vaya | Madhyama |
| Balam | Madhyama | Satwa | Avara |
| Kalam | Nava | Satmya | Madhura pradhana - vyamisra satmya |
| Analam | Vishama | Ahara (Abhyava-harana & Jarana) | Madhyama |

Pelvic Examination

- On inspection
 - External genitalia: Normal
 - Discharge: Curdy white +
- P/S examination
 - Cervix: Unhealthy, eroded around the external os
 - Discharge: Curdy white ++
- P/V examination
- Uterus: Anteverted, normal size
- Fornices: Free

consulted the Prasutitantra and Streeroga OPD, Govt. Ayurveda College, Tripunithura.

| Menstrual History | |
|-----------------------|------------|
| LMP | 01/08/2022 |
| PMP | 31/06/2022 |
| Interval | 30-32 days |
| Duration | 2-3 days |
| Associated complaints | Nil |

Obstetric History

- P2 L2 A0 D0
- L1 - FTND
- L2 - LSCS
- LCB - 5 years

Clinical Findings

General Examination

| | |
|--------------------|---------------------------------------|
| Built | Obese (BMI-28.1 kg/ m ²) |
| Nutritional status | Moderate |
| Pulse rate | 68/min |
| Blood pressure | 112/80 mmHg |
| Respiratory rate | 18/min |

Physical Examination

CNS, CVS, and RS examinations were done and found to be normal.

- CMT: Negative

Diagnostic Assessment

Wet-mount microscopy (22/08/2022): Presence of pseudohyphae (Grade 3)

Vaginal swab culture in Sabouraud agar medium (22/08/2022): *Candida albicans* grown in culture (Heavy)

Pap smear for cervical/vaginal cytology (22/08/2022): Negative for intraepithelial lesion or malignancy.

Therapeutic Intervention

Name of the drug: *Guduchi-Triphala-Danti gel*

Table 1: Details of the drugs

| Drug | Botanical name | Family | Part used |
|-------------------|-------------------------------------|----------------|------------------|
| <i>Guduchi</i> | <i>Tinospora cordifolia</i> Willd. | Menispermaceae | Stem |
| <i>Hareetaki</i> | <i>Terminalia chebula</i> Retz. | Combretaceae | Dried fruit rind |
| <i>Vibheetaki</i> | <i>Terminalia bellerica</i> Roxb. | Combretaceae | Dried fruit rind |
| <i>Amalaki</i> | <i>Emblica officinalis</i> Gareth. | Euphorbiaceae | Dried fruit rind |
| <i>Danti</i> | <i>Baliospermum montanum</i> Muell. | Euphorbiaceae | Dried root |

Dosage form: Gel

Dose: 5gm/application

Dosing schedule: Once daily at bedtime (subjects were advised to apply the gel after voiding urine)

Vehicle: Not applicable

Route/Mode of Administration: Locally (over the vulva and intravaginally), self-application with the applicator provided.

Treatment period, including the follow-up period

- Treatment was done for 14 days for 2 consecutive cycles excluding the days of menstruation.
- Follow up after 30 days from the last day of gel application.

The patient was instructed to apply 5gm *Guduchi-Triphala-Danti* gel locally over the vulva and into the

vagina using the provided intravaginal applicator once daily at bedtime for 14 days for 2 consecutive cycles excluding days of menstruation. She was asked to report after 14 days of gel application in each cycle, and after 30 days of follow-up.

Follow-Up and Outcomes

Periodic follow-up was done with an assessment of subjective and objective parameters. The assessment of curdy white vaginal discharge and pruritus vulvae was done using the Likert scale before the treatment, after 14 days of gel application in each cycle for 2 consecutive cycles, and after 30 days of follow-up. Pseudohyphae in wet-mount microscopy and colony count in vaginal swab culture were assessed before and after treatment.

The timeline of follow-up is depicted in the following table (Table 2)

Table 2: Timeline of follow-up

| Date | Curdy-white vaginal discharge (Likert scale) | Pruritus vulvae (Likert scale) | Pseudohyphae in wet-mount microscopy | Colony count in vaginal swab culture |
|--------------------------|--|--------------------------------|--------------------------------------|--------------------------------------|
| 22/08/2022 (First visit) | 5/5 | 3/5 | Grade 3 | Grade 3 |
| 26/09/2022 | 3/5 | 2/5 | - | - |
| 07/11/2022 | 2/5 | 1/5 | Grade 0 | Grade 1 |
| 03/12/2022 | 1/5 | 1/5 | - | - |

No adverse event was reported by the patient during and after the period of intervention.

DISCUSSION

The clinical features of Vulvovaginal Candidiasis can be correlated to *Slaishmiki Yonivyapat* mentioned in Ayurveda classics. *Snigdha, Guru, Sheeta,* and *Pichila guna* of vitiated *Kapha* along with *Chalaguna* of *Vata* (excessive secretory activity) results in the manifestation of *Slaishmiki yonivyapat* characterized by *Pichila -Sheeta srava* and *Kandu* in the *Yoni*. *Rasa, Raktha,* and *Artava* are the main *Dushyas* involved. The interaction of vitiated *Dosha* with *Dushya* of *Yoni pradesha* alters the vaginal immune system, and results in the development of candida infection, by the transition of asymptomatic colonization of candida that is already present in the vaginal microflora to a symptomatic one.

Drugs having properties opposite to that of *Kapha* will be beneficial in treating *Slaishmiki Yonivyapat*, which includes *Laghu, Ruksha, Ushna,* and *Tikshna gunas, Kashaya, Katu,* and *Tikta rasas,* and *Sthambhana, Sravahara, Kledahara, Kandughna, Krimighna,* and *Lekhana karmas.* *Guduchi-Triphala-Danti* gel is a modification of *Guduchi-Triphala-Danti kwatha pariseka*, mentioned in *Yonivyapat chikitsa*. It includes *Guduchi, Hareetaki, Vibheetaki, Amalaki,* and *Danti* [6-9]. By analyzing the properties of the drugs, almost all the drugs are of *Kashaya rasa, Ruksha-Laghu guna, Ushna veerya,* and acts as *Tridoshasamana*.

Kashaya rasa helps in relieving the *Yonirava* by virtue of its *Sthambhana,* and *Kleda upasoshana* properties and *Yonikandu* by its *Kaphasamana* property. *Laghu guna* is predominantly of *Agni, Vayu,* and *Akasa mahabhutas*. It is *Kaphasamana, Lekhana, Rukshana,* and *Ropana* in action. *Ruksha guna* has the predominance of *Vayu* and *Agni mahabhutas*. It is also *Kaphasamana, Soshana,* and *Sthambhana* in action. By virtue of these properties, the drug in *Guduchi-Triphala-Danti* gel pacifies vitiated *Kapha*, and thus relieves *Kandu* and *Kleda*. 4 out of the 5 drugs are having *Ushna veerya*. It is *Kapha-Vata samana*. By this, it helps in relieving the *Yonirava,* and *Kandu*.

Among the 5 ingredients, 4 drugs are *Tridoshasamaka,* and the rest one is *Kapha-Vata samaka*. Most of the drugs have *Krimighna, Kandughna, Sothahara,* and *Visodhana* properties. By virtue of these properties, the *Guduchi-Triphala-Danti* gel acts to relieve the symptoms of Vulvovaginal candidiasis.

Anti-microbial and anti-fungal activities of all the drugs in *Guduchi-Triphala-Danti* gel have been studied. Ethanolic and methanolic extract of the root and stem of *T. cordifolia* showed antimicrobial activity against *Candida* species^[11]. The stem extract of *Tinospora cordifolia* showed antifungal activity, attributed mainly to the synergistic effect of the combination of flavonoids, steroids, terpenoids and saponins present in it^[12]. Anti-viral, and immunomodulatory action has also been reported for *T.*

cordifolia^[13,14]. *Triphala* extract is proven to have Anti-microbial activity against candida species^[15]. Aqueous extracts of *T. chebula* showed high antifungal activity against various dermatophytes and yeast including *C. albicans*. The extract of *T. chebula* dried fruits showed the highest antifungal activity due to their alkaloids, glycosides, saponins, tannins, flavonoids, terpenoids, and steroids^[16]. Aqueous extract of *Terminalia bellerica* fruits showed significant activity against the tested bacterial and fungal isolates, attributed to the presence of phenols, alcohol, amines, and carboxylic acid as functional groups in *Terminalia bellerica*^[17]. Constituents of *E. officinalis* have been found to be active against a range of microbes including *Candida albicans*^[18]. The ethanol and acetone extracts of *E. officinalis* showed moderate activity against *Candida albicans*^[19]. The crude ethanolic extract of *B. montanum* showed antimicrobial activity^[20]. All the drugs are having anti-microbial, and anti-fungal activities, 4 of them showed anti-fungal action specific to candida species.

Anti-microbials have been approved to be administered intravaginally. Benefits of vaginal drug delivery include ease of administration, allowing even the self-administration of medicine, and immediate availability of the drugs to the systemic circulation because first-pass drug metabolism is bypassed. Gastric acid or digestive enzyme-mediated degradation within the gastrointestinal tract is also avoided. Vaginal drug delivery also allows selective regional therapeutic administration where needed, producing little or no change in exposure throughout the rest of the body. The high vascularity of the vaginal wall and the pelvic tissues enables faster absorption of drugs than oral administration. The surface of the vagina has many folds called rugae. Rugae increase the surface area of the vaginal wall. This also helps in easier absorption of drugs through the vaginal route^[10].

Drugs having properties opposite to that of *Kapha* will be beneficial in treating *Slaishmiki Yonivyapat*, which includes *Laghu, Ruksha, Ushna*, and *Tikshna gunas, Kashaya, Katu*, and *Tikta rasas*, and *Sthambhana, Sravahara, Kledahara, Kandughna, Krimighna*, and *Lekhana karmas. Guduchi, Triphala*, and *Danti* are having *Ruksha-Ushnaguna, Kanduhara, Krimihara*, and *Kledanasana* properties according to various *Nighantus*. All the drugs are having Anti-microbial and anti-fungal activities. By the mode of local application, drugs come into direct contact with vaginal wall facilitating faster and increased absorption of drugs through vaginal mucosa. This may have ensured effectiveness within a short period of time.

CONCLUSION

The *Kashaya rasa, Laghu-Ruksha guna, Ushna veerya, Tridoshasamaka, Krimighna, Kandughna, Sothahara, Lekhana*, and *Visodhana* properties of the

drugs in *Guduchi-Triphala- Danti* gel may have helped in arresting the growth of *Candida* species and reducing the symptoms of curdy white vaginal discharge and pruritus vulvae.

Patient Perspective

The patient shared her perspective in her local language (Malayalam). She was very happy with the treatment outcome. On her first visit, she was very much worried about the persistent vaginal discharge and itching over the vulval region, which was negatively affecting her day-to-day life. As the symptoms relieved considerably after the treatment for 2 consecutive cycles, she was very happy.

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Cite this article as:

Chindu B S, Maya Balakrishnan, Giby Thomas. Ayurvedic Management of Vulvovaginal Candidiasis with Local Application of Guduchi-Triphala-Danti Gel. *International Journal of Ayurveda and Pharma Research.* 2024;12(4):69-73.

<https://doi.org/10.47070/ijapr.v12i4.3180>

Source of support: Nil, Conflict of interest: None Declared

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