

“A CLINICAL STUDY OF PRURITUS VULVAE AMONG SEXUALLY TRANSMITTED INFECTIONS CLINIC ATTENDEES IN A TERTIARY CARE HOSPITAL”

Dermatology

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ABSTRACT

Background: Vulval pruritus affects the patients' quality of life, and many are being treated with placebo drugs just to relieve the symptoms and subsequently there are innumerable patients suffering from this embarrassing condition with no prime treatment. Hence, there is a need to identify the aetiology and confirm the diagnosis of pruritus vulvae with several investigations for appropriate treatment and to tackle the misery and stress of such patients. **Methodology:** This is a cross-sectional observational study in females aged >12 years attending STI clinic in Tirunelveli Medical College for 18 months (January 2018 to June 2019). All the included patients underwent a complete genital examination and patients with vaginal discharge were investigated with KOH mount, gram's stain, wet mount examination, whiff test and culture with SDA. Routine screening for sexually transmitted diseases like syphilis, HIV, HBsAg and HCV were done. Routine blood investigations like CBC, RBS, RFT, LFT, urine routine were done to rule out systemic conditions associated with pruritus. Descriptive statistical analysis was used in percentages and chi square test with $p < 0.05$ were used for test of significance for comparisons. **Results:** Among 225 cases of pruritus vulvae, the most common age group encountered in our study was 40-64 years (53.3%). In the study, most common infective aetiology encountered with pruritus vulvae was VVC (57.3%) followed by intertrigo (19.1%). The most common non-infective aetiology was lichen sclerosus et atrophicus (10.2%) followed by lichen simplex chronicus (0.4%). Prevalence of diabetes and HIV was 12% and 8% respectively. **Conclusion:** Vulvovaginal candidiasis is the most common diagnosis associated with pruritus vulvae in our study. Proper health education of vulvovaginal hygiene must be promoted for prevention of STI's associated with pruritus vulvae. Also, there is a need for prompt diagnosis and management of pruritus vulvae which is an extremely troublesome condition to the patients.

KEYWORDS

Pruritus vulvae, vulvovaginal candidiasis, STI's, Tirunelveli

INTRODUCTION:

Pruritus vulvae are the most distressing condition among females of all age groups. It is a highly enigmatic problem in the current scenario. Homeostasis of vagina is maintained by lactobacillus which is an integral part of the ecosystem.¹ Furthermore, increased estrogen levels maintain vaginal thickness, bolstering local defences. Many physiological and pathological conditions are responsible for damaging the acid mantle in the perineal area. Physiological conditions include menstruation and postmenopausal period which is highly vulnerable to infection. Geriatric patients are more distressed with this condition as those women have already gone through menopause and its associated physical, emotional and hormonal changes.²

Vulvar skin diseases are often multifactorial and have subtle clinical abnormalities. Causes of pruritus vulvae include infectious and non-infectious causes. Infectious causes include vulvovaginal candidiasis (VVC), trichomonas vaginalis (TV), bacterial vaginosis (BV), dermatophytosis, etc.³ Non-infectious causes like lichen simplex chronicus (LSC), lichen sclerosus et atrophicus (LSA), lichen planus, contact dermatitis, atopic dermatitis, atrophic vulvovaginitis, etc.⁴ Systemic diseases like diabetes mellitus, chronic renal insufficiency, cholestasis, polycythemia vera, malignancies, etc may also cause vulvar pruritus. Even psychogenic and neurogenic causes are being more troublesome to the patient at the present scenario.

Vulval pruritus affects the patients' quality of life, feelings of stigmatization and they have a significant negative influence on psychosocial status of the patient. Due to differences in the socio-economic status, knowledge, self-hygiene and care in each individual, the prevalence of sexually transmitted infections (STI's) and so the conditions of pruritus vulvae exist in increased incidence. Many are being treated with placebo drugs just to relieve the symptoms and subsequently there are innumerable patients suffering from this embarrassing condition with no proper treatment. Hence, there is a need to identify the aetiology and confirm the diagnosis of pruritus vulvae by means of several laboratory investigations. Further, it is necessary to diagnose the actual cause for appropriate treatment and to emphasize the patients on vulvovaginal hygiene and care to decrease the sexually transmitted infections and to combat the misery and stress

of such patients.

Materials And Methodology:

This is a cross-sectional observational study conducted in all females aged >12 years attending STI clinic in Tirunelveli Medical College Hospital over a period of 18 months (January 2018 to June 2019) after obtaining Ethical Committee clearance from the institution. Oral and written consent in their local language was obtained before starting the study. The study patients were interviewed concerning their age, economical status, educational status, marital status, presenting complaints, sexual history and their condom use. All the patients underwent a complete genital examination including inspection of labia majora, labia minora and mons pubis for any primary and secondary skin lesions pertaining to vulval pruritus and examined the other parts of the body to rule out pruritus vulvae as a part of generalized itching. Except antenatal, unmarried and menstruating women, all other patients were examined by using Cusco's bivalved self-retaining vaginal speculum and the nature, colour of discharge, vaginal walls and cervical changes were noted. Vaginal discharge was obtained using cotton tipped swabs and the following tests were done:

- pH of the discharge
- Whiff test by adding few drops of 10% KOH (Potassium hydroxide) to the genital discharge for Bacterial vaginosis
- Wet film with one drop of normal saline for Trichomonas vaginalis and clue cells.
- 10% KOH wet mount preparation for Candidiasis
- Culture with SDA (Sabouraud's Dextrose Agar) and CHROM agar for susceptible cases
- Gram stain to identify Neisseria gonorrhea from endocervix, Lactobacillus, Clue cells and Candida from vaginal discharge

Routine screening for sexually transmitted diseases with serological tests for syphilis, HIV, HBsAg and HCV were done. Routine blood investigations like complete blood count, random blood sugar, renal function tests, liver function tests, urine for albumin, sugar and deposits were done for all female attendees to rule out other comorbid conditions.

The data were entered in a predesigned proforma and extrapolated in Microsoft Excel sheet and analysed. Descriptive statistical analysis

was followed for describing the prevalence and nature of diagnosis which are explained in percentages and chi square test with $p < 0.05$ was used for test of significance for comparisons.

RESULTS:

A total of 255 symptomatic female patients who fulfilled the inclusion criteria were screened and diagnosed with pruritus vulvae and evaluated further. Majority of our patients were in the age group of 40-64 (53.3%) followed by 20-39 (36.9%).

The youngest and oldest age encountered in the study was 17 and 77 respectively.

Our study revealed itching as the predominant symptom and is also associated with vaginal discharge and burning sensation in some patients. Nature of discharge was curdy (57.3%), homogenous paste like (3.6%), frothy foul smelling (0.9%), mucopurulent (1.8%) and normal mucoid discharge (36.4%).

Clinical findings in the patients were maceration, erythema, erosions in the vulva and vagina giving a diagnosis of candidal intertrigo (**Figure 1**), vaginal discharges giving a diagnosis of VVC (**Figure 2**), BV and TV, depigmented atrophic plaque favouring LSA (**Figure 3**), polycyclic erosions favouring herpes genitals, excoriated papules diagnosed as scabies, verrucous papules of genital wart, umbilicated papules of MC, glistening papules of lymphangioma circumscriptum and scaly patches of dermatophytoses.

Laboratory investigations showed pseudophyphae in 78 patients, pseudohyphae and spores in 38 patients in KOH examination (**Figure 4**), 113 cases showed gram positive cocci in gram stain confirming the diagnosis of VVC. 52 patients were culture positive for candida species (32-*C. albicans* + 20-non *C. albicans*). (**Figure 5**) Of 43 cases of intertrigo clinically diagnosed, 12 had pseudohyphae and 3 had pseudohyphae and spores in KOH mount, 16 showed gram positive cocci in gram stain and 2 showed culture growth for candida. Laboratory investigations confirmed the diagnosis of BV by demonstration of clue cells in gram stain and wet mount (100%) (**Figure 6**).

All TV cases were confirmed by motile organisms in wet mount examination (100%). And all 4 cases of cervicitis had mucopurulent discharge with numerous neutrophils in gram stain.

By clinical history and laboratory investigations, 129 of them had vulvovaginal candidiasis (VVC), 43 had intertrigo, 23 had lichen sclerosus et atrophicus (LSA), 8 of them had bacterial vaginosis (BV), 5 had scabies, 4 had cervicitis, 3 of them had dermatophytoses and herpes genitalis each, 2 of them had trichomonas vaginalis (TV) and genital wart each and 1 of them had molluscum contagiosum (MC), lichen simplex chronicus (LSC) and lymphangioma circumscriptum each. (**Table 1**)

Table 1: Diagnosis Of Pruritus Vulvae

DIAGNOSIS	NUMBER (%)
Vulvovaginal candidiasis (VVC)	129 (57.3)
Lichen sclerosus et atrophicus (LSA)	23 (10.2)
Intertrigo (INT)	43 (19.1)
Dermatophytoses (DERM)	3 (1.3)
Herpes genitalis (HERPES)	3 (1.3)
Molluscum contagiosum (MC)	1 (0.4)
Bacterial vaginosis (BV)	8 (3.6)
Cervicitis	4 (1.8)
Lymphangioma circumscriptum (LC)	1 (0.4)
Trichomonas vaginalis (TV)	2 (0.9)
Scabies	5 (2.2)
Lichen simplex chronicus (LSC)	1 (0.4)
Genital wart (WART)	2 (0.9)
Total	225 (100)

Majority of females in the study were HIV non-reactive (92%) and only few were HIV reactive (8%). 27(12%) of patients were having diabetes mellitus and the remaining 198(88%) were non-diabetic. 27 patients with diabetes mellitus can further be classified into newly diagnosed (4.4%) and already a known case of diabetes (7.6%). This is important to analyse the systemic association of diabetes mellitus and pruritus vulvae.



Figure 1: Maceration and fissures seen over labia majora and minora-Intertrigo

Figure 2: Moderate curdy white discharge on visualisation with Cusco's speculum – Vulvovaginal candidiasis



Figure 3: Well defined depigmented atrophic plaque over labia majora & minora - Lichen sclerosus et atrophicus

Figure 4: KOH mount showing pseudohyphae and yeast cells in vulvovaginal candidiasis

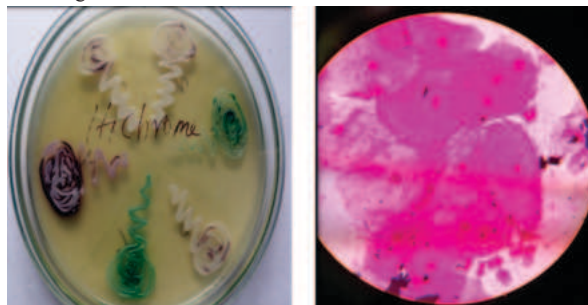


Figure 5: Culture with CHROM agar showing Candida albicans (green), *C. krusei* (pink) and other non-albicans species.

Figure 6: Gram staining showing numerous clue cells in Bacterial vaginosis

DISCUSSION:

In our study, the most common age group was 40-65 years of age (53.3%) followed by 20-39 years of age (36.9%). This is different from a study done by Kaur et al which showed increased incidence among geriatric age group (>65 years).² This can be explained by the fact that menopausal age group lies between 50-55 years during which they become oestrogen deficient and vaginal mucosa gets atrophied leading to increased incidence of pruritus. **P value is 0.039**, which showed significance between age and prevalence of pruritus vulvae.

Most of the females in our study were illiterate (36.4%) and it is similar to the study done in Nepal where there was increased incidence of pruritus vulvae among uneducated women.⁷ The majority of patients used harsh detergents to wash clothes (72.4%) and also used nylon undergarments (22.9%), both of which have a substantial impact on the incidence of vulvar disorders. **P value** in our study was **0.05** which showed significance between low educational status and pruritus vulvae implying improper maintenance of vulval hygiene and care among illiterates.

Vulvovaginal candidiasis was the commonest genital infection associated with pruritus vulvae without condom usage. It is same as the study done in Nepal where 48% of patients had condom usage and 52% of patients had never used condoms, which leads to increased

transmission of STI's accompanied with pruritus vulvae.⁵ Thus condom usage should be counselled and encouraged among people for safer and healthier sex. 100% condom was also initiated by WHO, India for betterment of people's life without STI'S.

HIV was reactive in 8% of patients and non-reactive in 92%. Few studies reported HIV as one systemic association of pruritus vulvae which is not that significant in our study.⁶ In our study, 12% of patients were having diabetes mellitus and the residual 88% were non diabetic. 27 patients with diabetes mellitus can additionally be classified into newly diagnosed (4.4%) and past history of diabetes (7.6%). This proved that diabetes mellitus is one among the systemic association causing pruritus vulvae.⁷

Vulvovaginal Candidiasis

The most common diagnosis of VVC (57.3%) in the study was also more common among 40-64 years of age (47.3%) followed by 20-39 years of age (45%). This is of increased frequency than in a study done by Venugopal et al which showed incidence of VVC of 27% among 26-35 years followed by 23% among 40-50 years of age.³ This explains VVC is more common among both reproductive and menopausal age group. A study done in Kolkata showed increased incidence of VVC among low socioeconomic status which was similar to our observation.⁸

Of 18 (8%) patients with HIV reactivity, 14 cases of HIV were infected with VVC. This highlights the increased association of HIV and VVC.⁹ Out of 27 (12%) diabetics, 14 diabetic women were infected with VVC. Diabetes mellitus is one of the major risk factors for VVC because hyperglycemia provides enrichment for the growth of the Candida in the vagina and also resistant to antimycotics.¹⁰

Intertrigo

Intertrigo (19.1%) was the second most common cause of pruritus vulvae. This was also more common among 40-65 years of age (72%), low socioeconomic background (46.5%) and primarily educated women (39.5%). Out of 18 (8%) HIV reactive cases, none were associated with intertrigo and out of 27 (12%) diabetic patients, 9 had intertrigo. Urinary or faecal incontinence, inadequate personal hygiene, malnutrition, immunosuppression like diabetes and HIV and occlusive clothing are among other predisposing factors for intertrigo.¹¹

Lichen Sclerosus Et Atrophicus

LSA (10.2%) is predominantly common in bimodal age groups but in our study, the most common age group affected was 40-65 years (74%). This is in concordance with the study done by Thappa et al where 72.3% of cases were 41-60 years of age.¹² All 23 cases of LSA belong to low socioeconomic background (61%) and majority are illiterate (48%). No significance between HIV and LSA which has been proved in our study with nil HIV positive cases among LSA. Only one case of diabetes has been co-associated with LSA.

Bacterial Vaginosis

Bacterial vaginosis (3.6%), the most common vaginal discharge syndrome worldwide is the fourth cause of pruritus vulvae in our study. Among 8 cases, 4 were of 40-65 years of age (50%), 7 (87.5%) belong to low economic class and 6 (75%) of them had primary educational qualification. It has been proved in a study done in Pittsburgh where they encountered decreased frequency of BV with consistent condom usage.¹³ BV has increased acquisition of HIV most commonly but surprisingly in our study, none were co-infected with HIV.¹⁴ Among 27 (12%) cases of diabetes mellitus in our study, 2 (7.4%) BV cases had diabetes.

Scabies

Scabies (2.2%) was more common among 20-39 years of age (80%) and belonged to low socioeconomic class. Scabies does not have significance on educational qualification as proved in our study by predominantly affecting degree holders (60%). Crowded and closed environment may predispose to increased risk of transmission. Close sexual contact may predispose to transmission of scabies.¹⁵ 4 cases (80%) had unprotected sexual intercourse and one had HIV positivity (20%). No case of diabetes mellitus diagnosed among them.

Herpes Genitalis

Herpes genitalis was associated with pruritus vulvae in 3 females (1.3%) with most common age group being 20-39 years of age (100%), sexually active group. This is consistent with the study done in Kerala

wherein the most common age group was 20-40 years (75%).¹⁶ Most of them belong to low socioeconomic status and 2 were illiterate (66.6%). 2 females (66.6%) had unprotected sex with one case (33.3%) being HIV positive. A study done by Mehta et al showed incidence of herpes (38%) in HIV positive patients which is similar to our observation.¹⁷ No risk factor association of diabetes in our study and all 3 cases were confirmed by presence of multinucleate giant cells in Tzanck smear (100%).

Dermatophytoses

Dermatophytoses was seen in 3 females (1.3%) with most common age group of 40-65 years of age (66.6%). All belong to low economic background and education was up to higher secondary. HIV was positive in one case (33.3%) and dermatophytoses is one of the markers of HIV disease.¹⁸

Cervicitis

Among 225 cases of pruritus vulvae, 4 (1.8%) females had cervicitis with common age group being 20-39 (50%) and 40-65 years of age (50%). 3 females (75%) had primary school education and all were married. No HIV positivity and one case (25%) was diagnosed to have diabetes mellitus.

Trichomonas Vaginalis

In our study, TV was seen in 2 females (0.9%) with predominant age group of 40-65 years of age. All were of low socioeconomic class, and both had low educational qualification with one being illiterate and other had primary education. None of them were HIV co-infected nor diabetic.¹⁹

Genital Wart

Among 225 females, 2 females (0.9%) had genital warts with most common age group being 20-39 years of age. All were of low socioeconomic class, and both had low educational qualification with one being illiterate and other had primary education. Among 2 cases of warts, one female had HIV positivity (50%). Increased HIV acquisition has been proved in genital warts.²⁰

Molluscum Contagiosum, Lichen Simplex Chronicus & Lymphangioma Circumscriptum

In the study, one case (0.4%) of molluscum contagiosum, LSC, lymphangioma circumscriptum each were associated with pruritus vulvae. All belong to low socioeconomic class and had till primary education. All three cases were HIV non-reactive and negative for diabetes screening.

CONCLUSION:

Vulvovaginal candidiasis is the most common diagnosis associated with pruritus vulvae in our study. Homeostasis of vagina is maintained by lactobacillus which is an integral part of the ecosystem and maintains the acid mantle. Many physiological and pathological conditions are responsible for damaging the vaginal homeostasis and so proper health education of vulvovaginal hygiene and care must be promoted for prevention of STI's associated with pruritus vulvae. Also, there is a need to diagnose the actual cause of pruritus vulvae for appropriate management and to prevent misery of such patients.

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