

# Treatment of vulvovaginitis

## SUMMARY

Vulvovaginitis is a commonly encountered problem in general practice. It usually presents with irritation and vaginal discharge.

A thorough examination is essential in order not to miss the less common causes. Investigations may be needed to confirm the diagnosis.

Candidiasis and bacterial vaginosis are the most common causes. Antifungals and antibiotics are therefore used in management.

Not all causes are infective. Several skin disorders can affect the vulva.

Ongoing or recurrent symptoms require careful evaluation and further investigation.

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## Introduction

Vulvovaginitis is a common presentation in general practice. Most women will experience at least one episode in their lifetime.<sup>1</sup>

The symptoms of vulvovaginitis include discharge, itch, pain, odour, dysuria and dyspareunia. An accurate diagnosis usually cannot be made on the history alone. An examination is required and investigations may be needed.

The causes can be infective or non-infective. While there are specific treatments, management also includes education about genital skin care.

## Infective causes

Most cases are caused by candidiasis or bacterial vaginosis.

### Candidiasis

Vulvovaginal candidiasis is usually due to *Candida albicans* which is part of the normal vaginal microbiome of women of reproductive age. This fungus requires an oestrogenised vaginal epithelium so it is seldom a cause of symptoms in postmenopausal women, unless they are taking hormone replacement therapy, or prepubertal girls.

Risk factors for infection include diabetes, pregnancy, recent antibiotics and prolonged corticosteroids. Immunocompromised women are also at risk.

The usual symptoms are itch, with or without a discharge that is classically described as thick and white. Other symptoms include dysuria and dyspareunia.

Examination typically reveals erythema and swelling of the vulva sometimes with splits or fissures. The thick discharge is typically present around the introitus and in the vagina.

The diagnosis of candidiasis is confirmed by microscopy and culture of a high vaginal swab. The presence of budding yeast or hyphae on microscopy is diagnostic.

A microscopy-negative but culture-positive result does not definitively diagnose candidiasis. This is because 10–20% of asymptomatic women will be culture positive. If symptoms are highly suggestive of candidiasis then a positive culture may indicate infection.

### Treatment

Candidiasis can be treated with antifungals given by the intravaginal or oral route.<sup>2</sup> Over-the-counter preparations are available including combinations containing a single dose of oral fluconazole 150 mg and an azole cream for external use.

For the treatment of episodic vaginal candidiasis all regimens are at least 80% effective for clinical and mycological outcomes. Treatment guidelines vary internationally. British guidelines list fluconazole 150 mg single dose and clotrimazole 500 mg cream or pessary as first line while Australian guidelines recommend vaginal clotrimazole. Cost and patient preference<sup>3</sup> usually determine the choice of treatment. Topical treatments are generally cheaper.

The choices for intravaginal treatment are:

- clotrimazole – 1% vaginal cream or pessaries at night for six nights
- clotrimazole – 2% cream at night for three nights
- clotrimazole – 10% cream for one night
- nystatin vaginal cream 100,000 units for 14 nights or twice a day for one week.

Clotrimazole and nystatin can be used in pregnancy (category A). Relapses and inadequate resolution of symptoms are more common with short-course treatment.

Oral treatment:

- fluconazole 150 mg can be given as a single dose. This may be repeated in three days if symptoms are severe. Fluconazole is a category D drug in pregnancy.

If vulval symptoms are particularly severe then a combination cream of hydrocortisone 1% with clotrimazole may be applied externally twice a day in the first few days.

### **Recurrent candida vulvovaginitis**

Recurrent candida vulvovaginitis is defined as at least four microbiologically proven infections per year. It can be difficult to prove as many women diagnose and treat themselves, and many doctors do not examine or investigate to confirm the diagnosis.<sup>4</sup> Any recurrent vulval symptoms require examination and investigation. It is unclear why about 5% of women are susceptible to recurrent vulvovaginal candidiasis. Diabetes and other causes of immunosuppression should be excluded.

#### *Treatment*

Treat recurrent infection with suppressive fluconazole with or without initial intravaginal clotrimazole or nystatin. There are numerous regimens of fluconazole in use internationally for recurrent candida vulvovaginitis. Commonly the fluconazole dose is 150 mg weekly for 2–3 months (some groups recommend up to six months), tapering down to fortnightly for two months, then monthly for two months. It may be necessary to resume the weekly regimen for longer should there be a recurrence while the dose is being tapered.

### **Non-albicans candida vulvovaginitis**

Non-albicans species in the vagina are often asymptomatic and for this reason the clinician should take care to exclude other causes of symptoms, for example eczema, before recommending treatment. The most common non-albicans form of infection is *Candida glabrata*. Azole resistance is common.

#### *Treatment*

The choices for intravaginal treatments are:

- nystatin cream 100,000 units twice a day for two weeks (pregnancy category A)
- boric acid pessaries 600 mg at night for two weeks (available from compounding pharmacies). Prescribers should advise patients of the correct route of administration because boric acid is poisonous if taken orally. It is contraindicated in pregnancy.

Relapses may require longer treatment courses and then twice-weekly maintenance therapy for three months.

### **Bacterial vaginosis**

Bacterial vaginosis typically presents with malodorous (often fishy) vaginal discharge. The odour is more marked after intercourse. Discomfort is mild or absent. Risk factors include new sexual partners and vaginal douching. Bacterial vaginosis is more common in women who have sex with women. Despite the association with sexual activity it is not currently recommended practice to treat the partners of women with bacterial vaginosis.

Bacterial vaginosis is a polymicrobial condition with increased numbers of anaerobic organisms and a reduction in lactobacilli. *Gardnerella* is one of the principle anaerobes identified in bacterial vaginosis but is not the only organism implicated. Recent research has tried to determine potential triggers that alter the vaginal microbiome, but no definitive factor has been identified.

The diagnosis can be made when three out of four Amsel's criteria are present:

- characteristic discharge – thin, greyish white, adherent
- clue cells on Gram stain of a high vaginal swab
- positive 'whiff test' – if the clinician can detect genital malodour during examination
- vaginal pH more than 4.5.

#### *Treatment*

Symptomatic women, including pregnant women, should be treated. Asymptomatic women undergoing gynaecological instrumentation (e.g. IUD insertion, hysteroscopy) should also be treated. Treating the male partners of women with bacterial vaginosis is currently not recommended. The female partners of women with bacterial vaginosis should be offered screening and treatment if positive, but there is currently no evidence that this reduces recurrences. Treatment of asymptomatic bacterial vaginosis in pregnancy has not been found to alter pregnancy outcomes.

Treatment may be oral or intravaginal. Studies comparing oral versus topical therapy suggest higher cure rates with seven days of oral metronidazole, however this must be balanced against its higher rate of adverse effects.<sup>5</sup> Cost may also be a factor as the topical therapies are not subsidised by the Pharmaceutical Benefits Scheme. Single doses are associated with higher relapse and recurrence rates.

The options for oral treatment are:

- metronidazole 400 mg twice a day for five to seven days or 2 g single dose
- clindamycin 300 mg twice a day for seven days.

The options for intravaginal treatment are:

- metronidazole gel 0.75% at night for five days
- clindamycin 2% cream at night for seven days.

Metronidazole can cause nausea and should be taken with food. Alcohol should not be consumed with these drugs.

For pregnant women clindamycin is category A. Metronidazole is in category B2 for pregnancy, but has not been proven to be harmful.

### **Recurrent bacterial vaginosis**

Up to 50% of women will have a recurrence within one year. As yet, there are no definitive treatments for recurrent bacterial vaginosis. Some studies have shown suppressive therapy, for example intravaginal metronidazole gel 0.75% twice-weekly for up to six months, to be more effective than placebo. There is currently insufficient evidence to recommend the use of vaginal acidifying agents or probiotics in the treatment of bacterial vaginosis.

### **Trichomoniasis**

Trichomoniasis typically causes mild discomfort and increased vaginal discharge (often frothy yellow or grey), however it is asymptomatic in about 50% of cases. It is a sexually transmitted infection. Trichomoniasis is relatively uncommon in major urban centres<sup>6</sup> with higher rates occurring in rural and remote areas, particularly in indigenous populations. Detection in general practice has been made easier by the advent of a specific PCR test on a vaginal swab or urine sample. The treatment is either a single 2 g dose of metronidazole or 400 mg twice daily for 5–7 days. The woman's partner should also be treated.

### **Herpes**

Genital herpes simplex virus typically presents with painful vulval irritation. Cervical and vaginal ulceration may also occur. Primary infections present with bilateral ulceration, while recurrences are usually unilateral. Diagnosis is by a herpes simplex virus specific PCR test using a swab from blisters or ulcers.

### **Treatment**

Commence treatment at the earliest symptoms. Contact the obstetric team if the woman is pregnant. Treatment may be episodic or suppressive if there are frequent recurrences.

### **Initial therapy**

Treatment of the initial infection by genital herpes simplex virus should begin within 72 hours of the onset of symptoms – the earlier the better. The options are:

- valaciclovir 500 mg twice a day for five days
- famciclovir 250 mg three times a day for five days.

In severe initial cases it may be appropriate to continue treatment with antivirals for up to 10 days.

### **Subsequent therapy**

For subsequent infections the recommended treatment has usually been for five days:

- valaciclovir 500 mg twice a day for five days
- famciclovir 125 mg twice a day for five days.

There are a number of alternative short-course regimens that are considered to be equally effective:

- famciclovir 500 mg single dose then 250 mg 12-hourly for three doses
- famciclovir 1000 mg twice a day for one day
- valaciclovir 500 mg twice a day for three days.

Immunocompromised patients require higher doses to treat herpes, for example valaciclovir 500 mg twice a day for seven days.

### **Suppressive therapy**

For recurrent infections the decision to use suppressive therapy is dependent on their frequency and severity, as well as the psychological impact of the recurrences. Suppressive therapy reduces the frequency of recurrences by 70–80%. The options are:

- valaciclovir 500 mg daily for 6–12 months, then trial off
- famciclovir 250 mg twice a day for 6–12 months, then trial off.

It is not uncommon for an early recurrence to happen soon after ceasing suppressive therapy. If frequent recurrences occur then restarting suppressive therapy is appropriate, with a further trial off treatment in the future.

Genital infections caused by herpes simplex virus 1 are usually associated with fewer recurrences. The frequency of recurrences with either strain of herpes simplex virus diminishes with time.

### **Non-infective causes**

Non-infective causes of vulvovaginitis are common and often overlooked. There are several types of vulval dermatoses. A careful history should be taken, noting general skin problems and any previous treatments. It is imperative to carefully examine the area especially in any woman who has recurrent symptoms. Biopsy may be needed. Referral to a specialist is recommended.

### **Lichen simplex**

Persistent itching and scratching may lead to the development of lichen simplex. It often presents with excoriation and mild lichenification. Avoid provoking factors such as over-washing, soap and over-wiping during toileting.

### ***Irritant contact dermatitis***

An irritant contact dermatitis usually presents with itch and discomfort. It is often caused by application of over-the-counter preparations, lubricants, condoms and alternative therapies. Dermatitis may also result from persisting wetness, for example incontinence.

### ***Seborrhoeic dermatitis***

The itch of seborrhoeic dermatitis is generally confined to hair-bearing areas of skin. There is often evidence of seborrhoea elsewhere.

### ***Atopic eczema***

In genital eczema, there is often evidence of eczema elsewhere. Areas of excoriation and lichenification are common.

### ***Lichen sclerosus***

Lichen sclerosus is a chronic skin disorder that often affects the vulva. It can occur at any age. Itching is the principal symptom, however there may be pain due to skin splits. Lichen sclerosus can be asymptomatic and significant architectural changes may have occurred by the time it is diagnosed. Examination findings vary but include pale thickened plaques, areas of fine crinkling and splits. Lichen sclerosus is usually confined to non-hair-bearing areas and does not extend into the vagina. With progression, there may be resorption of the labia minora and 'burying' of the clitoris under thickened skin. Rarely squamous cell cancer can develop. Referral to a specialist is recommended.

### ***Psoriasis***

Psoriasis can present with itch and irritation. On examination there are well-defined erythematous plaques, however the moist environment of the vulva means the classical scale is often absent.

### ***Lichen planus***

Lichen planus is an uncommon cause of vulval ulceration, discharge and dyspareunia. Painful well-defined vulval and sometimes vaginal erosions are seen. Referral to a specialist is recommended.

### ***Desquamative vaginitis***

A rare form of vaginitis is desquamative inflammatory vaginitis. It presents with discharge and dyspareunia. The cause is unknown.

The vagina appears inflamed with small erosions that may involve the cervix. Microscopy of the discharge shows plentiful polymorphs with parabasal cells (from deeper layers under the erosions). Referral to a specialist is recommended.

### **Prepubescent girls**

The vulva and vagina of a prepubertal girl is not oestrogenised. As a result, the vaginal epithelium is thin, the pH is higher and the external genitals lack the labial bulk that offers some protection from irritants. Girls may complain of itch, discomfort or pain, dysuria and sometimes discharge.

Examination should only be undertaken with a parent or chaperone present and with the consent of the child. Patience and gentle explanation of the process of examination is essential. Much of the time a minimal touch technique can be used. Swabs should only be taken from external skin or from any discharge at the introitus. Check the perianal area for skin changes or worms.

The cause usually relates to toileting and hygiene, irritation from clothing such as wet bathers, and occasionally foreign bodies. Any suspicion of sexual assault or test results consistent with a sexually transmitted infection must be reported to the relevant authorities.

Notable infective causes include:

- threadworm – itching of vulva and perianal area particularly at night
- Group A streptococci – vulval pain with redness and thin discharge visible at introitus
- *Haemophilus*, *Staphylococci* and rarely *Shigella* – may be pathogens
- candida – rarely occurs and if it does clinicians should consider diabetes or immunosuppression.

### **Management**

There is an important role for non-drug management including:

- general measures such as avoiding soap and bubble baths
- toileting and wiping advice – avoid 'holding on', urinate and open bowels regularly, wipe carefully and gently, not excessively
- patting rather than rubbing the vulva with towels
- soaking for 15 minutes in a shallow bath with ½ cup vinegar added
- soothing creams, for example paraffin, emollients.

A short course of a mild topical steroid can be used if excoriation is marked.

## Conclusion

Vulvovaginitis is a common problem. It usually presents with itching and vaginal discharge.

The likely causes differ in girls, women and postmenopausal women. Common causes include candidiasis, bacterial vaginosis and skin diseases affecting the vulva. After clinical assessment, investigations may be needed to make the diagnosis.

All patients will benefit from advice on genital skin care. The treatment of vulvovaginitis is guided by the cause. Specialist advice is appropriate if the diagnosis is unclear or if symptoms persist despite following the recommended treatment regimens. ◀

*Conflict of interest: none declared*

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## FURTHER READING

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