MSHC
MELBOURNE SEXUAL HEALTH CENTRE

Candidiasis (vulvovaginal) treatment guidelines

Also known as thrush, candida, yeast infection, fungus, mycosis

Candidiasis (vulvovaginal) is a common infection caused by an overgrowth of yeasts which naturally occur in the vagina.

Causes

Candidiasis, also known as thrush, is due to a proliferation of vaginal yeasts.

The majority of symptomatic infections are due to proliferation of *Candida albicans*, but 10-20% of infections are due to a non-albicans species, such as *C. glabrata or C. krusei*.

Contributing factors can predispose to candidiasis, such as antibiotic use, pregnancy, diabetes, immune suppression, but in the majority of cases no such factor can be identified.

Candidiasis does not occur in a non-oestrogenised vaginal environment, so does not occur in prepubertal girls or postmenopausal women who are not on oestrogen therapy.

Occasionally yeasts can be acquired from a sexual partner, but for the most part candidiasis is due to overgrowth of endogenous yeasts.

Clinical presentation

Symptoms include vaginal discharge or vulval dermatitis or both.

Discharge is often described as white and curd-like but may be yellow or green due to an associated intense inflammatory infiltrate.

Vulval dermatitis can result in itch, irritation or soreness.

Vulval skin can be red and oedematous, with fissures and superficial erosions.

Women may experience superficial dyspareunia and vulval dysuria.

Diagnosis

Test	Site/ specimen	Comments
Microscopy and pH evaluation	Vaginal swab	Diagnosis is supported by presence of budding yeasts +/- pseudohyphae with a polymorphic inflammatory infiltrate, usually in the presence of lactobacilli and a low vaginal pH (<4.5). Candidiasis can occur with bacterial vaginosis (BV), in which case the lactobacilli will be replaced by BV flora and the vaginal pH will be higher (>4.5).

Test	Site/ specimen	Comments
Culture	Vaginal or vulval swab	If microscopy is negative but symptoms suggest candidiasis. Microscopy and culture can be negative with recent antifungal use and should be repeated if symptoms persist. Speciation is only required if initial treatment is ineffective and a non-albicans species is suspected. Yeasts are part of the commensal vaginal flora and culture of yeasts in the absence of symptoms does not require treatment. Swab fissured or eroded vulval skin for microscopy, culture and herpes PCR.

Management

Condition	Recommended	Comments
Acute candidiasis	See below for management of acute *Candida albicans* vulvovaginitis or acute non-albicans vulvovaginal candidiasis	Occurs in about 75% of premenopausal women at least once. Symptoms usually subside with any recommended antifungal treatment
Chronic/recurrent candidiasis	See below for management of chronic/recurrent *Candida albicans* vulvovaginitis	Defined as 4 or more symptomatic episodes in a year, occurs in 5%-9% of healthy premenopausal women. No current treatment is effectively fungicidal. Symptoms usually improve during treatment but recur after stopping. Recurrence is due to proliferation of the same population of yeast. Treatment is aimed at suppression and usually needs to continue for at least 6 months. The underlying pathology is thought to be an abnormal host pathogen interaction with localized hypersensitivity so that even small amounts of yeast trigger symptoms. There may be a history of atopy (eczema or hay fever or asthma). Symptoms are often cyclical, increasing pre-menses. Women may complain of vaginal dryness rather than discharge. Sex often aggravates symptoms and women may complain of burning, splitting and swelling after sex. There is no evidence that treating a sexual partner reduces recurrence. The partner should be offered treatment based on their symptoms.

Condition	Recommended	Comments
Acute *Candida albicans* vulvovaginitis	**Clotrimazole vaginal cream or pessary for 3-6 nights, or 500mg pessary single dose.** OR **Miconazole vaginal cream or pessary for 6 nights.** OR **Fluconazole 150mg oral single dose, repeat every 72 hours for 2 or 3 doses if symptoms are severe (*not to be used in pregnancy*).** OR **Nystatin vaginal cream or pessaries, once daily for 14 days or twice daily for 7 days.**	All topical and oral azole therapies give cure rates of 80-90%. Topical treatments must be given per vaginal (PV) to effect cure. Longer duration treatment will be needed if symptoms are severe. Add topical 1% hydrocortisone(+/- topical antifungal) if there is severe vulvitis. Warn patients that all PV treatments can weaken latex condoms. Nystatin is a polyene antifungal, less irritating than the azole class, but less potent. Oral nystatin is not absorbed and is ineffective

Condition	Recommended	Comments
Chronic/recurrent *Candida albicans* vulvovaginitis	Induction therapy: **Fluconazole PO 50mg, daily or 150mg every 3-5 days, for 10-14 days** OR **Topical antifungal cream or pessary, for 10-14 days** Followed by suppression: **Fluconazole PO 100-200mg, once or twice weekly, for 6 months or more** OR **Topical antifungal, 2-3 x weekly for 6 months or more**	Treatment is aimed at suppressing yeast growth. Dose and frequency of treatment depend on level of suppression required to prevent breakthrough symptoms. The most used suppressive regimen is 150mg fluconazole once weekly (based on a RCT in 2004), however, this regimen may not adequately suppress yeasts in a significant number of women. Review after 4 - 6 weeks, while on treatment, and check for effective suppression (reduction in symptoms and negative microscopy and culture). If yeasts are still present, increase antifungal dose or frequency or both. If this fails and resistance is suspected, change antifungal class. That is, change from the azole class to a polyene antifungal or boric acid - see below. If symptoms persist but yeasts are suppressed, as evidenced by repeated negative culture, check for an alternative diagnosis such dermatitis or vulval pain syndrome (see below). After cessation of therapy, recurrence may occur in up to 50% of women and suppression may need to be continued for another 6 - 12 months. It may be possible to reduce frequency of oral suppression to fortnightly or a single dose pre-menses. Fluconazole should **not be used in pregnancy** (Cat D). Advise women to stop fluconazole if they miss a period and exclude pregnancy before they take the next dose. At low dose fluconazole rarely results in hepatotoxicity. LFTs usually do not need to be monitored.

Condition	Recommended	Comments
Acute non-albicans vulvovaginal candidiasis	Standard topical azole antifungal treatments (see above) may work if given for longer duration. For example: **2 weeks of vaginal clotrimazole or miconazole.** OR **Nystatin vaginal cream or pessary, bd for 2 weeks** OR **Amphotericin B lozenge(Fungilin®) inserted VAGINALLY bd for 2 weeks.** OR **Boric acid 600mg in a gelatin capsule inserted VAGINALLY, at night for 2 weeks**	Non-albicans species are less sensitive to, and may be resistant to, azole antifungals. The majority of infections are caused by *Candida glabrata*. Non-albicans species provoke less inflammation than *Candida albicans* and do not always cause symptoms. Symptoms may be due to coexistent dermatitis or a vulval pain syndrome. Fluconazole is less effective but could be tried at higher dose Note: *C. krusei* has innate resistance to fluconazole. Topical polyene antifungals: Amphotericin is more potent than nystatin and, like nystatin, is not absorbed if given orally. Amphotericin lozenge may be moistened before insertion into the high vagina to help it dissolve. Warn patients that it is messy and creates a yellow discharge. Boric acid must not be taken orally due to toxicity. Keep out of reach of children. If used vaginally as directed boric acid is safe. It should **not be used in pregnancy**. Available on prescription at compounding pharmacies. Review after 2 weeks and check response. Non-albicans species are less susceptible to all antifungals.
Chronic/recurrent non-albicans candidiasis	After successful induction therapy consider continuing the same antifungal 2-3 x weekly for up to 6 months.	There are no evidence-based guidelines for management of recurrent symptomatic non-albicans candidiasis and optimal management is unknown. If symptoms continue on treatment check for suppression and if culture positive change antifungal treatment. In vitro resistance testing is not very helpful. Culture of yeast from a vaginal swab in the presence of antifungal is the best indicator of resistance, that is, in vivo testing. Remember that poor control of symptoms may reflect subtle dermatitis or a pain syndrome or both.

Co-morbidities

Underlying vulval dermatitis can result in persistent itch, soreness and erythema despite adequate suppression of yeasts. Advise patient to pay attention to genital skin care with addition of a neutral moisturiser and topical corticosteroid if required. Provide patient with genital skin care fact sheet.

Dermatitis can predispose to yeast superinfection in the damaged skin. Take a swab from any fissures or erosions.

Vulval pain syndromes, most notably localised provoked vulvodynia, are commonly associated with chronic/recurrent candidiasis. Vulval burning during and after sex that continues despite repeated negative culture is very suggestive and needs additional management of pain. Review vulvodynia treatment guidelines and vulvodynia fact sheet.

If symptoms persist or diagnosis is in doubt, refer to a specialist experienced in vulval medicine.