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AMPATH LABORATORIES

UPDATED SCREEN FOR SEXUALLY TRANSMITTED INFECTIONS

Sexually transmitted infections (STI) occur commonly. According to the World Health Organization (WHO), approximately 1 million STIs are acquired globally on a daily basis. The most common causes of genital ulceration, urethral and vaginal discharge are summarised in Table 1.[1,2] The main pathogenic mechanism in the development of bacterial vaginosis and vulvovaginal candidiasis (VVC) is a disturbance in the vaginal microbiome, allowing the overgrowth of opportunistic organisms, which results in a vaginal discharge. Bacterial vaginosis and VVC are causes of vaginal discharge in females, both those who are sexually active and those who are not.

TABLE 1: CAUSES OF GENITAL ULCERATION, URETHRAL AND VAGINAL DISCHARGE SYNDROMES IN PATIENTS

Syndrome	Most common aetiology	Uncommon aetiology
Genital ulceration	• Herpes simplex virus (HSV) 1 and 2, *Treponema pallidum*	• *Chlamydia trachomatis* serovar L1-3, *Haemophilus ducreyi*, *Klebsiella granulomatosis*
Male urethral discharge	• *Neisseria gonorrhoeae*, *Chlamydia trachomatis*	• *Mycoplasma genitalium* • *Trichomonas vaginalis*
Vaginal discharge	• *Neisseria gonorrhoeae*, *Chlamydia trachomatis* • *Trichomonas vaginalis* • Bacterial vaginosis • Candidiasis	• *Mycoplasma genitalium*

A large proportion of STIs are asymptomatic. Between 45 and 85% of men and between 14 and 35% of women infected with *Neisseria gonorrhoeae* become symptomatic. The number of symptomatic infections with *Chlamydia trachomatis* is even lower, with only 11 to 33% of men and 6 to 17% of women becoming symptomatic.[2] The implications of having an STI stretch beyond the clinical manifestations of genital ulceration and genital discharge to include the following:[2]

- Increased susceptibility to, and increased transmission of HIV
- Pelvic inflammatory disease
- Tubal infertility
- Ectopic pregnancy
- Stillbirth and congenital infection

The early detection, treatment and prevention of STIs are thus of paramount importance.[1,2] In resource-limited settings, the syndromic management of STIs is still the standard of care. This approach has several limitations, which include the following:[1-3]

- Emergence of antimicrobial resistance due to the use of multiple broad spectrum antibiotic agents.
- Lack of supporting epidemiological data.
- Reliance on the presence of symptoms and the healthcare-seeking behaviour of infected people to initiate treatment. A large proportion of STIs go untreated due to the asymptomatic nature of common STIs.

Where resources are available, it is preferable to test symptomatic patients for STIs, followed by the targeted treatment of the identified pathogen, rather than syndromic management.[2] According to the South African HIV Clinicians Society guideline for the management of STIs, a comprehensive sexual health assessment should include testing for HIV, hepatitis B and C, syphilis and, in women, human papilloma virus (HPV) DNA testing.[2]

As a large proportion of STIs are asymptomatic, current guidelines also recommend screening asymptomatic patients at risk for STIs annually, more frequently (at six-monthly intervals) if multiple sex partners are present, if the patient has had an STI diagnosed in the last year, and if the patient engages in transactional sex or sex under the influence of drugs. Further recommendations are made for specific patient population groups as detailed in Table 2.[2]

TABLE 2: SCREENING INTERVALS FOR STIs IN SPECIFIC POPULATION GROUPS

Population group	Suggested screening interval
People living with HIV	At entry to care and then at least annually based on risk assessment
HIV pre-exposure prophylaxis users (PrEP)	At entry to care and then at least annually based on risk assessment
Men who have sex with men	Annually, six-monthly if at increased risk
Transgender and gender diverse individuals	Annually, more frequently if at increased risk
Commercial sex workers	Three- to six-monthly
Pregnancy	At first antenatal visit, and again in the third trimester

AMPATH'S UPDATED STI SCREEN

The STI screen at Ampath has been updated in line with current guideline recommendations and can be performed with HIV testing (mnemonic: STD) or without HIV testing (mnemonic: STDNH) (Table 3). Results are available 24 to 48 hours after receipt of the sample at the testing laboratory.

TABLE 3: SCREEN CHARACTERISTICS

Tests included	Specimen type
Serology	
• Hepatitis B surface antigen • Hepatitis C antibodies • Syphilis: RPR *and Treponema pallidum* antibodies • HIV-1/2 antibodies and p24 Antigen	Blood
Molecular (PCR) testing	
• *Neisseria gonorrhoeae** • *Chlamydia trachomatis** • *Trichomonas vaginalis* • *Mycoplasma genitalium*	Males: first void urine Females: dry vaginal swab (can be self-collected) Urine is considered an acceptable alternative in female patients ONLY if collection of a vaginal swab is not feasible. Note that the sensitivity of the STD PCR, when performed on a urine specimen is lower for the detection of sexually transmitted pathogens such as *Neisseria gonorrhoeae* and *Chlamydia trachomatis* in the female patient.

* Site-specific testing, e.g. rectal and pharyngeal swabs for *N. gonorrhoeae* and *C. trachomatis*, may also be indicated if dictated by the patient's sexual practices.[1,2]

The updated STI screen does not include testing for HSV-1 and -2. A genital ulcer PCR should be requested separately in patients who present with genital ulceration, which requires a dry swab taken from the area of ulceration. HSV-2 IgG can be requested to determine past exposure, but is not recommended for cases with current genital ulceration due to the poor sensitivity of the test.

For female patients, bacterial vaginosis and candidiasis can be diagnosed by means of Nugent scoring, microscopy and culture (MCS) performed on a vaginal swab (gel swab). A bacterial vaginosis PCR is also available.

OTHER SUGGESTED READING

Lab Update 9: Bacterial vaginosis PCR – CLICK HERE

Lab Update 44: Genital Ulcer Multiplex PCR – CLICK HERE

Ampath Chat 66: Aetiology, diagnosis and management of the vaginal discharge syndrome – CLICK HERE

REFERENCES

1. Workowski KA, Bachmann LH, Chan PA, Johnston CM, Muzny CA, Park I, Reno H, Zenilman JM, Bolan GA. 2021. Sexually transmitted infections treatment guidelines. MMWR Recommendations and Reports, 7 July 2021; 70(4):1.
2. Peters RPH, Garrett N, Chandiwana N. 2022. South African HIV Clinicians Society 2022 guideline for the management of sexually transmitted infections: moving towards best practice. Southern African Journal of HIV Medicine, 23(1).
3. National Department of Health. 2020. South African sexually transmitted infections. Management guidelines 2018. South African department of health. Available at: https://www.health.gov.za/wp-content/uploads/2020/11/sti-guidelines-27-08-19.pdf