US BioTek LABORATORIES · PATIENT REPORT

16 Harker St, Burwood VIC, 3125 • info@nutripath.com.au • 1300 688 522

26154-0195

Dr Test Doctor (Test Doctor) Test Clinic. 123 Test Street, Test Suburb Victoria 3125

Lab ID
Patient ID P000004
Ext ID 26086-0028

Test Patient

Sex: Female • 18yrs • 20-Sep-07
123 Home Street, Test Suburb VIC 3125

RECEIVED
27-Mar-26

VAGINAL MICROBIOME MAPPING

Specimen type - Swab-Vaginal

Collected
20-Mar-26

TEST	RESULT	H/L	REFERENCE	UNITS
pH	6.1	H	(3.5-4.5)	
Bacterial Vaginosis	POSITIVE			
Aerobic Vaginitis	POSITIVE			

SEXUALLY TRANSMITTED INFECTIONS (STIs) - PCR

TEST	RESULT
Chlamydia trachomatis	Not Detected
Neisseria gonorrhoeae	Not Detected
Trichomonas vaginalis	DETECTED
Mycoplasma genitalium	DETECTED
Herpes Simplex Virus 1	DETECTED
Herpes Simplex Virus 2	Not Detected
Haemophilus ducreyi	Not Detected
Lymphogranuloma venereum	Not Detected
Treponema pallidum (Syphilis)	Not Detected

OPPORTUNISTIC UROGENITAL MICROBIOTA - PCR

TEST	RESULT
Mycoplasma hominis	Not Detected
Ureaplasma parvum	Not Detected
Ureaplasma urealyticum	Not Detected

Other Viruses

Cytomegalovirus (CMV)	Not Detected
Varicella-Zoster Virus (VZV)	Not Detected

Firmicutes Phylum · Proteobacteria Phylum · Bacteroidota Phylum · Actinobacteriota Phylum · Tenericutes Phylum · Ascomycota Phylum

Bacteria Viruses

Enterococcus faecalis
Gardnerella vaginalis
Herpes Simplex Virus 1

Mycology

Candida dubliniensis
Candida glabrata

Sexually Transmitted Infections

Mycoplasma genitalium
Trichomonas vaginalis

NATA No: 20770, Supervising Pathologists: Dr N. Maheshwari (Medical Director) & Dr M. Rana. Accreditation Scope available on governing accreditation body website.

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OPPORTUNISTIC BACTERIA

TEST	RESULT	H/L	REFERENCE	UNITS
Bacteria linked to positive-Bacterial Vaginosis				
Gardnerella vaginalis	1.10	H	(<1.00)	x10^5 CFU/ml
Atopobium vaginae	0.40		(<1.00)	x10^5 CFU/ml
Megasphaera species	<DL		(<1.00)	x10^5 CFU/ml
Prevotella species	<DL		(<1.00)	x10^5 CFU/ml
Bacterial Vaginosis-Associated Bacterium 2 (BVAB2)	1.20	H	(<1.00)	x10^5 CFU/g
Mobiluncus species	<DL		(<1.00)	x10^5 CFU/g
Bacteroides fragilis	1.10	H	(<1.00)	x10^5 CFU/g
Bacteria linked to positive-Aerobic Vaginosis				
Escherichia coli	<DL		(<1.00)	x10^5 CFU/ml
Enterococcus faecalis	1.10	H	(<1.00)	x10^5 CFU/ml
Staphylococcus aureus	<DL		(<1.00)	x10^5 CFU/ml
Streptococcus agalactiae	0.60		(<1.00)	x10^5 CFU/ml
Streptococcus dysgalactiae	<DL		(<1.00)	x10^5 CFU/ml
Staphylococcus epidermidis	<DL		(<1.00)	x10^5 CFU/ml
Bacterial Vaginal Pathogens				
Haemophilus influenzae	<DL		(<1.00)	x10^5 CFU/ml
Klebsiella pneumoniae complex	<DL		(<1.00)	x10^5 CFU/ml
Leptothrix species	<DL		(<1.00)	x10^5 CFU/ml
Peptostreptococcus species	<DL		(<1.00)	x10^5 CFU/ml
Proteus mirabilis	<DL		(<1.00)	x10^5 CFU/ml
Pseudomonas aeruginosa	<DL		(<1.00)	x10^5 CFU/ml
Streptococcus pyogenes	<DL		(<1.00)	x10^5 CFU/ml
Streptococcus pneumoniae	<DL		(<1.00)	x10^5 CFU/ml
Mollicutes				
Mycoplasma genitalium	1.00	H	(<1.00)	x10^6 CFU/ml
Mycoplasma hominis	<DL		(<1.00)	x10^6 CFU/ml
Ureaplasma parvum	<DL		(<1.00)	x10^5 CFU/ml
Ureaplasma urealyticum	<DL		(<1.00)	x10^5 CFU/ml

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MYCOLOGY

TEST	RESULT	H/L	REFERENCE	UNITS
Candida albicans	0.00		(<1.00)	x10^5 CFU/ml
Candida dubliniensis	1.00	H	(<1.00)	x10^5 CFU/g
Candida glabrata	1.00	H	(<1.00)	x10^5 CFU/ml
Candida krusei	<DL		(<1.00)	x10^5 CFU/ml
Candida lusitaniae	<DL		(<1.00)	x10^5 CFU/g
Candida parapsilosis	<DL		(<1.00)	x10^5 CFU/ml
Candida tropicalis	<DL		(<1.00)	x10^5 CFU/ml

BENEFICIAL BACTERIA

SERVICE	RESULT	H/L	REFERENCE	UNITS
TOTAL LACTOBACILLI	0.35	L	(>1.00)	x10^6 CFU/ml
Lactobacillus crispatus	<DL	L	(>1.00)	x10^6 CFU/ml
Lactobacillus gasseri	0.22	L	(>1.00)	x10^6 CFU/ml
Lactobacillus iners	<DL	L	(>1.00)	x10^6 CFU/ml
Lactobacillus jensenii	<DL	L	(>1.00)	x10^6 CFU/ml
Lactobacillus rhamnosus	<DL	L	(>1.00)	x10^6 CFU/ml
Lactobacillus salivarius	0.10	L	(>1.00)	x10^6 CFU/ml
Lactobacillus vaginalis	0.03	L	(>1.00)	x10^6 CFU/ml

Firmicutes Phylum Proteobacteria Phylum Bacteroidota Phylum Actinobacteriota Phylum Tenericutes Phylum Ascomycota Phylum

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Vaginal Microbiome Comment

Disclaimer: The results of vaginal microbiome analyses are intended for informational and clinical interpretation purposes only. Microbiome testing reflects the composition of microbial communities at the time of sampling and may be influenced by sample collection, handling, storage, and test limitations.

This test is not a standalone diagnostic tool for infection or disease. Clinicians should interpret results in the context of patient symptoms, clinical examination, and complementary laboratory findings.

The laboratory's full scope of accreditation can be accessed via the relevant governing accrediting body's publicly available documentation.

VAGINAL pH ELEVATED:

Vaginal pH can be elevated by the presence of pathogenic infection, blood, semen, vaginal medications, using certain soaps and douches. In the absence of the latter, an elevated pH may be the result of decreased serum oestradiol and is suggestive of menopause or hormone imbalance and may require further pathology investigation. The typical vaginal pH is 3.5-4.5. Prepubertal and postmenopausal pH levels are normally >5 pH. With the increase of the oestrogen levels around puberty, the genital mucosa thickens and becomes colonized with Lactobacillus species which produce lactic acid and hydrogen peroxide to lower the pH below 4.5.

BACTERIAL VAGINOSIS PRESENT:

Bacterial Vaginosis (BV) may be asymptomatic or cause symptoms such as itching and malodorous discharge (often thin and white/grey). It is associated with an increased risk of preterm delivery, pelvic inflammatory disease and an increased risk of acquisition of sexually transmitted infections. Risk factors include poor sexual hygiene, cigarette smoking or hormone dysregulation.

AEROBIC VAGINITIS (AV) PRESENT:

Patients suffering AV may experience vaginal complaints such as abnormal discharge (yellowish), inflammation (redness and swelling), and/or small erosions or ulcerations. If untreated, it can transition into more serious complications (PID, dyspareunia [pain during intercourse], severe UTIs, and/or pregnancy complications). Causes of AV include immune dysregulation, low oestrogen or Vitamin D deficiency.

There is no accepted clinical strategy for treating AV. Treatment with either antiseptic or antibiotic therapy with emphasis on bacteria of faecal origin, whilst ensuring minimal interference with vaginal Lactobacillus species.

VAGINAL CANDIDIASIS (VC):

Candida spp. are both opportunistic fungal pathogens and commensal members of the vaginal microbiome.

VC is defined by disruption in Lactobacillus dominance (Total Lactobacillus <10^6 CFU/ml) and high levels of Candida sp. (>10^5 CFU/ml).

It is predominantly caused by Candida albicans, with other species (C. glabrata, C. krusei, C. tropicalis, C. parapsilosis) also causative,although with milder symptoms and can be less responsive to standard azole therapy.

VC is usually not associated with elevated vaginal pH levels. It is rare for fungal infections to be present combined with bacterial vaginosis. Risk factors include antibiotic use, poorly controlled diabetes mellitus, low immunity and oestrogen therapies.

Symptoms include itching, discharge (typically white), burning sensation, dysuria (painful urination), dyspareunia (pain during sexualintercourse) and reddening of vaginal tissue due to invasion of the epithelium by Candida species. Clinical correlation is essential, and alternative causes of symptoms should be considered. Recommended first-line treatment for uncomplicated cases includes intravaginal azole therapy (e.g., clotrimazole cream or pessary) or a single oral dose of fluconazole 150 mg, noting oral therapy should generally be avoided in pregnancy. Recurrent candidiasis (≥4 episodes/year) may require prolonged or maintenance therapy. Partner treatment is not routinely indicated.

CHLAMYDIA TRACHOMATIS – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

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NEISSERIA GONORRHOEAE – Not Detected:

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TRICHOMONAS VAGINALIS DETECTED:

Trichomonas vaginalis, a flagellated protozoan parasite and the causative agent of the sexually transmitted disease trichomoniasis. Symptoms include foul-smelling greenish-yellow discharge, dysuria (painful urination), dyspareunia (pain during sexual intercourse) and burning sensation in the area of the cervix. Post-coital bleeding has also been reported as an occasional symptom. Depending on the extent of disease, significant signs of inflammation are often found on clinical examination of the vulva and/or cervix. Even asymptomatic infections should be treated and must always include the patients partner/sexual contacts.

This organism may be classified as a notifiable pathogen. Confirmation has been performed through repeat testing and/or verification on a secondary platform, where required. The result will be reported to the relevant Department of Health in accordance with statutory requirements. For specific state-based notification obligations, please refer to your local public health authority.

MYCOPLASMA GENITALIUM DETECTED:

Mycoplasma genitalium is a sexually transmitted pathogen associated with urethritis, cervicitis, and pelvic inflammatory disease, and may increase the risk of adverse pregnancy outcomes. Testing is indicated in cases of persistent or recurrent urethritis, cervicitis, PID, or as part of contact tracing. Antimicrobial resistance is common in Australia, with macrolide resistance exceeding 60% and fluoroquinolone resistance rising. Resistance-guided therapy is recommended where available. Empirical treatment should begin with doxycycline 100 mg twice daily for 7 days to reduce bacterial load, followed by an appropriate second-line agent based on resistance profile (e.g., azithromycin for macrolide-susceptible strains or moxifloxacin for resistant strains). Beta-lactam antibiotics are ineffective due to the absence of a cell wall. Clinical correlation and partner management are essential.

General advice for along with above treatment as follows:

- Regular salt or warm water only washes (no douching)
- Good Personal Hygiene
- Avoid irritants (soaps/perfumes)
- Use barrier protection during sex

HERPES SIMPLEX VIRUS 1 – DETECTED:

HSV may be either symptomatic or asymptomatic. Whilst HSV-1 often affects the perioral region, herpes simplex virus type 1 or type 2 can cause genital herpes lesions. These present as painful blisters on or around the genital area that erode to leave ulcers, with the initial episode usually the most severe. Other symptoms can include genital itchiness or irritation. Herpes genitalis remains one of the most common sexually transmitted infections (STI) and the primary mode of transmission of both HSV-1 and HSV-2 is via direct contact of open lesions. Management of genital herpes centres around preventing its transmission and suppressing viral shedding through antiviral therapy and counselling regarding the risk of sexual transmission. Current therapies include specific antivirals that may shorten the episode if commenced within 72 hours of symptom presentation, but are not curative.

HERPES SIMPLEX VIRUS Type 2 – Not Detected:

This does not completely exclude the possibility of infection as is dependent on an adequate specimen collection. If you have symptoms, please consult with your healthcare practitioner.

CYTOMEGALOVIRUS (CMV) DNA DETECTED:

Cytomegalovirus (CMV) DNA has been detected on this vaginal swab. Detection of CMV at a mucosal site does not in itself confirm active CMV disease. CMV shedding from the genital tract can occur in both primary infection and reactivation, and may be asymptomatic, particularly in immunocompetent individuals. If clinically indicated, assessment for systemic CMV infection may include CMV serology,

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CMV viral load (PCR) in blood, or additional site-specific testing depending on symptoms and immune status. For pregnant patients, transplant recipients, or other immunocompromised individuals, further clinical correlation and specialist review are recommended.

GARDNERELLA VAGINALIS ELEVATED:

Gardnerella is a part of normal vaginal anaerobic flora but overgrowth can cause Bacterial vaginosis. This is a poly-microbial infection which suppresses dominance of normal vaginal lactobacillus spp. (Total lactobacillus <10^6 CFU/ml), presence of clue cells, alkaline vaginal pH (>4.5) and fishy vaginal discharge. BV may be asymptomatic or cause symptoms such as itching and malodorous discharge (often thin and white/grey). It is associated with an increased risk of preterm delivery, pelvic inflammatory disease and an increased risk of acquisition of sexually transmitted infections.

Treatment:

Can be treated after ruling out allergy/pregnancy status: Metronidazole 400 mg orally, 12-hourly for 7 days or Metronidazole 0.75% vaginal gel 1 applicatorful intravaginally at bedtime for 5 nights OR Clindamycin 2% vaginal cream 1 applicatorful intravaginally, at bedtime for 7 nights (If pregnant or allergic to metronidazole)

General advice for along with above treatment as follows:

- Regular salt or warm water only washes (no douching)
- Good Personal Hygiene
- Avoid irritants (soaps/perfumes)
- Use barrier protection during sex

BVAV2 ELEVATED:

BVAV2 refers to a mixed bacterial vaginosis–aerobic vaginitis (BV–AV) pattern in which classical BV-associated anaerobes coexist with aerobic or facultative pathogens, producing a clinical picture that blends BV's thin grey-white discharge, amine odor, and minimal inflammation with AV-associated soreness, burning, or dyspareunia due to mucosal inflammation. This pattern reflects a transitional or compounded dysbiosis where loss of Lactobacillus dominance permits both anaerobic overgrowth and aerobic epithelial inflammation, often resulting in more persistent or recurrent symptoms than BV alone.

ENTEROCOCCUS FAECALIS ELEVATED:

Enterococcus faecalis is a Gram-positive commensal bacterium native to the gastrointestinal tract and an opportunistic pathogen of increasing clinical concern. E. faecalis also colonizes the female reproductive tract, and reports suggest vaginal colonization increases following antibiotic treatment or in patients with AV. While vaginal E. faecalis colonization is normally asymptomatic, certain populations may be at risk for severe disease. AV is defined by disruption in Lactobacillus dominance (Total Lactobacillus <10^6 CFU/ml), increased pH (>4.5) and the presence of mainly aerobic enteric commensals or pathogens, including Enterococcus faecalis (>10^5 CFU/ml).

TOTAL LACTOBACILLUS LEVELS LOW:

Total Lactobacillus quantification should be > 1×10^6 CFU/ml in a healthy Vaginal Microbiome. Production of H2O2 by Lactobacillus species is essential in inhibiting the overgrowth of pathogens. In cases where total Lactobacillus levels are low, presence of pathogenic bacteria should be reviewed and probiotic therapy should be considered. Microorganisms not belonging to the Lactobacillus genus with the population equal to or greater than 1× 10^5 CFU/ml is considered to be disturbing the vaginal ecosystem equilibrium.

Methodology

Quantitative PCR (qPCR), Polymerase Chain Reaction (PCR), pH Electrode