TEST PATIENT

Dr.TEST DOCTOR

NutriPATH
Integrative Pathology Services
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Date of Birth : 01-Jan-1962
Sex : F
Collected : 30/Jun/2021
Received: 30/Jun/2021
123 TEST STREET
BURWOOD VIC 3125
Lab id : **3750385** UR#:

TEST HEALTH CENTRE
123 TEST STREET
BURWOOD VIC 3125

Vaginal Microbiome Profile

Vaginal pH.	**5.7*H**	3.5 - 4.5	

Opportunistic Bacteria	Result	Range	Units	
Enterococcus faecalis:	<DL	< 1.0	x10^5 CFU/ml	
Escherichia coli:	0.99	< 1.00	x10^5 CFU/g	
Klebsiella pneumoniae:	<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 agalactiae:	<DL	< 1.00	x10^5 CFU/ml	
Staphylococcus aureus:	<DL	< 1.00	x10^5 CFU/ml	
Gardnerella vaginalis:	10.6 *H	< 1.00	x10^5 CFU/ml	
Atopobium vaginae:	<DL	< 1.00	x10^5 CFU/ml	
Prevotella species:	<DL	< 1.00	x10^5 CFU/ml	
Megasphaera species:	2.77 *H	< 1.00	x10^5 CFU/ml	
NEW Mycoplasma genitalium:	9.65*H	< 1.00	x10^6 CFU/ml	
Ureaplasma:	6.31 *H	< 1.00	x10^6 CFU/ml	

Sexually Transmitted Infections	
Trichomonas vaginalis:	Not Detected
Chlamydia trachomatis:	Not Detected
Neisseria gonorrhoeae:	DETECTED
Herpes Simplex Virus-1:	Not Detected
Herpes Simplex Virus-2:	Not Detected

COMMENT:
Not Detected results indicate the absence of detectable DNA in this sample. A negative result does not completely exclude infection.

Opportunistic Fungal pathogens	Result	Range	Units	
Candida albicans:	1.22 *H	< 1.00	x10^5 CFU/ml	
Candida glabrata:	0.63	< 1.00	x10^5 CFU/ml	
Candida krusei:	<DL	< 1.00	x10^5 CFU/ml	
Candida parapsilosis:	<DL	< 1.00	x10^5 CFU/ml	
Candida tropicalis:	<DL	< 1.00	x10^5 CFU/ml	

Beneficial Bacteria:	Result	Range	Units	
Total Lactobacillus:	47.00	> 1.00	x10^6 CFU/ml	
Lactobacillus crispatus:	4.00	> 1.00	x10^6 CFU/ml	
Lactobacillus gasseri:	15.00	> 1.00	x10^6 CFU/ml	
Lactobacillus iners:	<DL *L	> 1.00	x10^6 CFU/ml	
Lactobacillus jensenii:	2.36	> 1.00	x10^6 CFU/ml	
Lactobacillus salivarius:	10.00	> 1.00	x10^6 CFU/ml	
Lactobacillus vaginalis:	11.00	> 1.00	x10^6 CFU/ml	

Bacterial Vaginosis:	
Bacterial vaginosis	POSITIVE

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Vaginal Microbiome Comments

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 (H2O2) to lower the pH below 4.5.

ELEVATED pH:
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.

MEGASPHAERA SPECIES ELEVATED:
Megasphaera are gram-negative anaerobic bacteria, part of Clostridia genus often found as part of the oral and vaginal microbiota. The presence of high number of Megasphaera species may be an indicator of vaginal flora imbalances or infections. BV is typically a polymicrobial infection characterized by disruption in Lactobacillus dominance (Total Lactobacillus <10^6 CFU/ml), increased pH (>4.5) and the presence of mainly anaerobic microorganisms including Megasphaera sp. (>10^5 CFU/ml).

NEISSERIA GONORRHOEAE - DETECTED:
Detection and confirmation performed at a NATA accredited laboratory.
Infection is primarily sexually transmitted and may be either asymptomatic or cause symptoms such as cervicitis (inflammation of the cervix) in women. Even asymptomatic infections should be treated and must always include the patients partner/sexual contacts. If left untreated, complications of gonococcal disease can include pelvic inflammatory disease with risk of infertility. Neisseria gonorrhoeae infections are notifiable under legislation in Australia and a notification has been made with your state public health unit; notification data are recorded in the Australian National Notifiable Diseases Surveillance System.

VAGINAL CANDIDIASIS (VC):
Candida sp. 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).

VC is predominantly caused by Candida albicans, with other species (C. glabrata, C. krusei, C. tropicalis, C. parapsilosis) also causative, although with milder symptoms.
VC is not associated with elevated vaginal pH levels. It is rare for fungal infections to be present combined with bacterial vaginosis.

VC symptoms include itching, discharge (typically white), burning sensation, dysuria (painful urination), dyspareunia (pain during sexual intercourse) and reddening of vaginal tissue due to invasion of the epithelium by Candida species. Asymptomatic vaginal candidiasis is also relatively common and does not require treatment. Risk factors include antibiotic use, poorly controlled diabetes mellitus, low immunity and oestrogen therapies.

TOTAL LACTOBACILLUS LEVELS LOW:
Total Lactobacillus quantification should be >1x10^6 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× 105 CFU/ml is considered to be disturbing the vaginal ecosystem equilibrium.
References:
Pacha-Herrera et. al., 2020, Frontiers in Cellular and Infection Microbiology, 10:303.
Oerlemans et. al.,2020, Europe PMC, 10(11).
Tomusiak et. al., 2013, Polish Society of Gynaecologists, 84:352-358.