TruMed

Comprehensive Stool Analysis

Expected/Beneficial flora		Commensal (Imbalanced) flora		Dysbiotic flora	
NG	*Bacteroides fragilis* group	2+	Alpha hemolytic strep	4+	*Enterobacter cloacae* complex
1+	*Bifidobacterium* spp.	1+	*Bacillus* spp., not *cereus* or *anthracis*		
NG	*Escherichia coli*	2+	Beta hemolytic strep, group B		
2+	*Lactobacillus* spp.				
NG	*Enterococcus* spp.				
3+	*Clostridium* spp.				

MALDI-TOF

NG = No Growth

Expected / Beneficial bacteria make up a significant portion of the total microflora in a healthy & balanced GI tract. These beneficial bacteria have many health-protecting effects in the GI tract including manufacturing vitamins, fermenting fibers, digesting proteins and carbohydrates, and propagating anti-tumor and anti-inflammatory factors.

Clostridia are prevalent flora in a healthy intestine. Clostridium spp. should be considered in the context of balance with other expected/beneficial flora. Absence or overabundance of clostridia relative to other expected/beneficial flora may indicate bacterial imbalance. If C. difficile associated disease is suspected, review the Clostridium difficile toxin A/B results from the GI Pathogens PCR section of this report.

Commensal (Imbalanced) bacteria are usually neither pathogenic nor beneficial to the host GI tract. Imbalances can occur when there are insufficient levels of beneficial bacteria and increased levels of commensal bacteria. Certain commensal bacteria are reported as dysbiotic at higher levels.

Dysbiotic bacteria consist of known pathogenic bacteria and those that have the potential to cause disease in the GI tract. They can be present due to a number of factors including: consumption of contaminated water or food, exposure to chemicals that are toxic to beneficial bacteria; the use of antibiotics, oral contraceptives or other medications; poor fiber intake and high stress levels. Aeromonas, Plesiomonas, Salmonella, Shigella, Vibrio, Yersinia, & Edwardsiella tarda have been specifically tested for and found absent unless reported.

Normal flora		Dysbiotic flora
1+	*Candida parapsilosis*	
1+	*Saccharomyces cerevisiae/boulardii*	

MALDI-TOF

Yeast may normally be present in small quantities in the skin, mouth, and GI tract as a component of the resident microbiota. Their presence is generally benign. Recent studies, however, show that high levels of yeast colonization is associated with several inflammatory diseases of the GI tract. Animal models suggest that yeast colonization delays healing of inflammatory lesions and that inflammation promotes colonization. These effects may create a cycle in which low-level inflammation promotes fungal colonization and this colonization promotes further inflammation. Consideration of clinical intervention for yeast should be made in the context of other findings and presentation of symptoms.

Comments:

Date Collected: 05/10/2021
Date Received: 05/11/2021
Date Reported: 05/12/2021

Specimens Collected: 3

Methodology: Culture and identification by MALDI-TOF and conventional biochemicals

ORDER: SAMPLE REPORT
PATIENT: Sample Patient
ID:
SEX: Female
AGE: 35

CLIENT #: 12345
DOCTOR: Sample Doctor
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

GSA+P

DOCTOR'S DATA INC

GI Pathogens; Multiplex PCR

Viruses	Result	Reference Interval
Adenovirus F40/41	Positive	Negative
Norovirus GI/GII	Negative	Negative
Rotavirus A	Negative	Negative

Pathogenic Bacteria	Result	Reference Interval
Campylobacter (*C. jejuni*, *C. coli* and *C. lari*)	Positive	Negative
Clostridioides difficile (Toxin A/B)	Negative	Negative
Escherichia coli O157	Negative	Negative
Enterotoxigenic *Escherichia coli* (ETEC) lt/st	Negative	Negative
Salmonella spp.	Negative	Negative
Shiga-like toxin-producing *Escherichia coli* (STEC) stx1/stx2	Negative	Negative
Shigella (*S. boydii*, *S. sonnei*, *S. flexneri* & *S. dysenteriae*)	Negative	Negative
Vibrio cholerae	Negative	Negative

Parasites	Result	Reference Interval
Cryptosporidium (*C. parvum* and *C. hominis*)	Negative	Negative
Entamoeba histolytica	Negative	Negative
Giardia duodenalis (AKA *intestinalis & lamblia*)	Negative	Negative

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Parasitology; Microscopy

Protozoa	Result
Balantidium coli	Rare
Blastocystis spp.	Not Detected
Chilomastix mesnili	Not Detected
Dientamoeba fragilis	Not Detected
Endolimax nana	Not Detected
Entamoeba coli	Not Detected
Entamoeba hartmanni	Not Detected
Entamoeba histolytica/Entamoeba dispar	Few
Entamoeba polecki	Not Detected
Enteromonas hominis	Not Detected
Giardia duodenalis	Moderate
Iodamoeba bütschlii	Not Detected
Isospora belli	Not Detected
Pentatrichomonas hominis	Not Detected
Retortamonas intestinalis	Not Detected
Nematodes - Roundworms	
Ascaris lumbricoides	Not Detected
Capillaria hepatica	Not Detected
Capillaria philippinensis	Not Detected
Enterobius vermicularis	Not Detected
Strongyloides stercoralis	Not Detected
Trichuris trichiura	Not Detected
Hookworm	Not Detected
Cestodes - Tapeworms	
Diphyllobothrium latum	Not Detected
Dipylidium caninum	Not Detected
Hymenolepis diminuta	Not Detected
Hymenolepis nana	Not Detected
Taenia	Not Detected

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Parasitology; Microscopy

Trematodes - Flukes	Result
Clonorchis sinensis	Not Detected
Fasciola hepatica/Fasciolopsis buski	Not Detected
Heterophyes heterophyes	Not Detected
Paragonimus westermani	Not Detected

Other Markers		Reference Interval
Yeast	Many	None – Rare
RBC	Not Detected	None – Rare
WBC	Not Detected	None – Rare
Muscle fibers	Not Detected	None – Rare
Vegetable fibers	Not Detected	None – Few
Charcot-Leyden Crystals	Not Detected	None
Pollen	Not Detected	None

Macroscopic Appearance	
Mucus	Negative

Parasitology Information

This test is not designed to detect *Cyclospora cayetanensis* or *Microsproridia* spp.

Intestinal parasites are abnormal inhabitants of the gastrointestinal tract that have the potential to cause damage to their host. The presence of any parasite within the intestine generally confirms that the patient has acquired the organism through fecal-oral contamination. Damage to the host includes parasitic burden, migration, blockage and pressure. Immunologic inflammation, hypersensitivity reactions and cytotoxicity also play a large role in the morbidity of these diseases. The infective dose often relates to severity of the disease and repeat encounters can be additive.

There are two main classes of intestinal parasites, they include protozoa and helminths. The protozoa typically have two stages; the trophozoite stage that is the metabolically active, invasive stage and the cyst stage, which is the vegetative inactive form resistant to unfavorable environmental conditions outside the human host. Helminths are large, multicellular organisms. Like protozoa, helminths can be either free-living or parasitic in nature. In their adult form, helminths cannot multiply in humans.

In general, acute manifestations of parasitic infection may involve diarrhea with or without mucus and or blood, fever, nausea, or abdominal pain. However these symptoms do not always occur. Consequently, parasitic infections may not be diagnosed or eradicated. If left untreated, chronic parasitic infections can cause damage to the intestinal lining and can be an unsuspected cause of illness and fatigue. Chronic parasitic infections can also be associated with increased intestinal permeability, irritable bowel syndrome, irregular bowel movements, malabsorption, gastritis or indigestion, skin disorders, joint pain, allergic reactions, and decreased immune function.

In some instances, parasites may enter the circulation and travel to various organs causing severe organ diseases such as liver abscesses and cysticercosis. In addition, some larval migration can cause pneumonia and in rare cases hyper infection syndrome with large numbers of larvae being produced and found in every tissue of the body.

Red Blood Cells (RBC) in the stool may be associated with a parasitic or bacterial infection, or an inflammatory bowel condition such as ulcerative colitis. Colorectal cancer, anal fistulas, and hemorrhoids should also be ruled out.

White Blood Cells (WBC) and **Mucus** in the stool can occur with bacterial and parasitic infections, with mucosal irritation, and inflammatory bowel diseases such as Crohn's disease or ulcerative colitis

Muscle fibers in the stool are an indicator of incomplete digestion. Bloating, flatulence, feelings of "fullness" may be associated with increase in muscle fibers.

Vegetable fibers in the stool may be indicative of inadequate chewing, or eating "on the run".

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