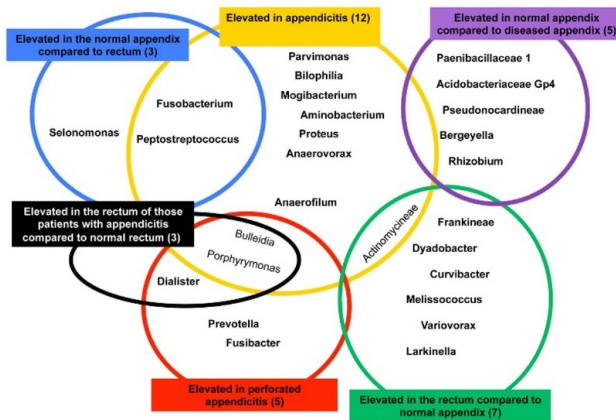


TECHNOLOGY

Compositions and Methods for Determining the Likelihood of Appendicitis

OVERVIEW

Appendicitis is a condition that is easily treated through the surgical removal of the appendix. However, delays in diagnosis beyond 24-36 hours from the start of symptoms can lead to an increased risk of mortality, morbidity, and costs due to complications. Diagnosis is complicated by the heterogeneous clinical presentation of appendicitis, which can be very similar to many other conditions contributing to a rate of unnecessary appendectomies ranging from 3-30%. This technology is a method to determine the likelihood of appendicitis in a subject using the relative abundance of operational taxonomic unit (OTU) microorganisms in a patient's appendix and rectum to indicate a high risk of appendicitis in the patient. Researchers used a culture-independent, 16S rRNA gene analysis to analyze the microbiota of pediatric patients either diagnosed with appendicitis or undergoing appendectomy incidental to abdominal surgery for another indication. Comparison of the relative abundance of bacteria in the appendix and rectal samples were cataloged to identify distinct differences in the appendix and rectal microbiota, as well as differences between patients with or without appendicitis (see figure). These microbiota "signatures" may be used to guide the treatment and diagnosis of appendicitis.



APPLICATIONS

The lifetime risk of appendicitis is estimated at 7-14% and approximately 195,000 - 300,000 people in the US undergo an appendectomy. The wide range in appendectomy reflects the difficulties in diagnosis are often leading to unnecessary surgical procedures. The lack of a definitive diagnostic test increases the associated healthcare cost, as physicians use a combination of blood work results, ultrasound, and computerized tomography (CT) to make their diagnosis. CT is the gold standard for diagnosing appendicitis, used in 98% of patients undergoing appendectomy in the US. However, it carries a significant radiation exposure, which is of particular concern in children, who have the highest rate of misdiagnosis. This technology allows for the determination of the likelihood of appendicitis in a subject without requiring a CT scan or ultrasound, obviating the need for a radiologist or sonographer. This invention is a safer, cheaper alternative to current methods.

ADVANTAGES

Cheaper, faster, and more precise than imaging-based tests for appendicitis

Does not require CT or ultrasound equipment nor a highly skilled radiologist or ultrasonographer

STAGE OF DEVELOPMENT

Comparison studies completed with appendix and rectal samples from children undergoing appendectomy, normal appendices and with appendicitis.

(As of 10/2019)- MEW

LICENSING POTENTIAL

Available for licensing

Available for sponsored research

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PATENT STATUS

US Patent 2015/0225784 (allowed)

LICENSE STATUS

Available for licensing; Available for sponsored research

CATEGORIES

- Diagnostics
- Biomarker
- Genomics/Proteomics/Database

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ATTACHMENTS

-  [Download CF-2014-074 Marketing Sheet 10_16_2019 FINAL.pdf](#)

EXTERNAL RESOURCES

- [Culture-Independent Evaluation of the Appendix and Rectum Microbiomes in Children with and without Appendicitis](#)

CF-2014-074