Vaginal microbes point toward early detection and screening for endometrial cancer

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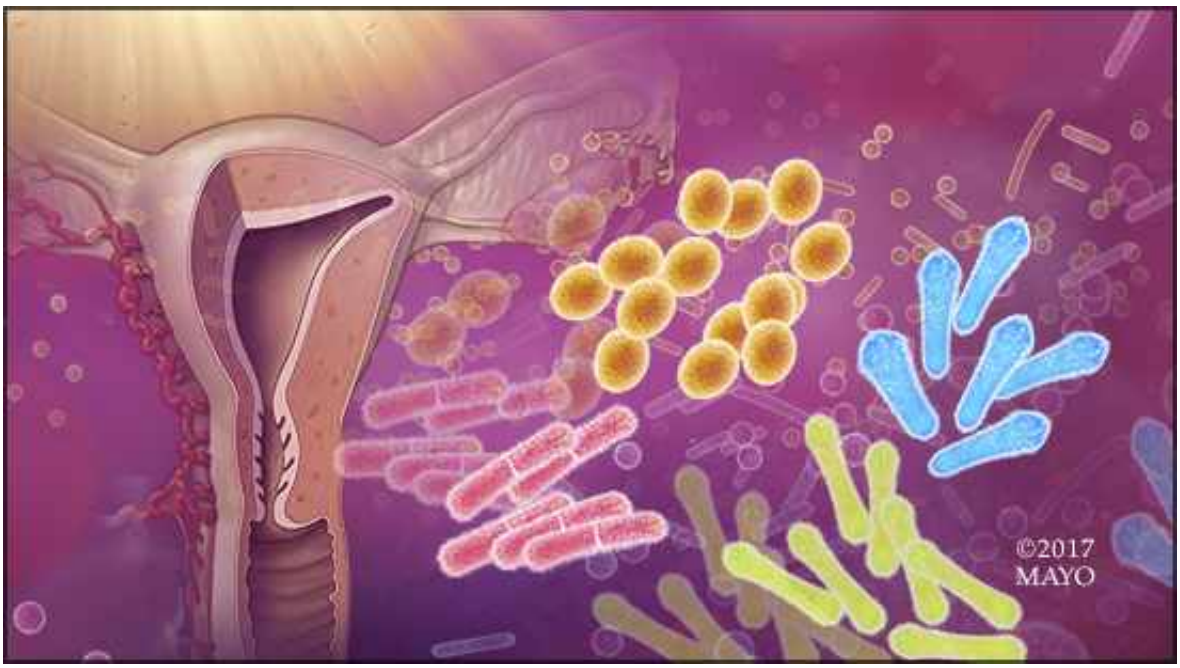

Credit: Mayo Clinic

Endometrial cancer triggers remain elusive, despite continued research. But given the typical inflammatory profile in these cases, microbes in the uterine environment are suspected to play a role in the development of this disease.

To probe the microbes directly within the uterine environment and

examine how these microbes could influence cancer within the endometrial lining, Mayo researchers conducted the first direct assessment uterine microbiome study published in *Genome Medicine*.

"We set out to discover whether there is a microbiome component in the malignancy of tumors and if its appearance in patients diagnosed with the disease is distinguishable from that of patients without malignancy," says Marina Walther-Antonio, Ph.D., lead author of the Mayo Clinic study.

As a result of the study, researchers now know that:

- The uterine microbiome of women with endometrial cancer is different from the uterine microbiome of women without endometrial cancer.
- The microbes present in the vaginal environment of women with endometrial cancer are also different from the microbes present in the vaginal environment of women without endometrial cancer.

The research team studied 31 Caucasian women undergoing hysterectomy. Of those, 10 women were diagnosed with a benign gynecologic condition, four women were diagnosed with endometrial hyperplasia, and 17 women were diagnosed with endometrial cancer. All diagnoses were made based on the final surgical pathology following hysterectomy. The authors report that the populations of microbes found throughout the reproductive tract are shifted in the presence of cancer and hyperplasia, and were distinct from the benign cases.

Based on the results of the study, the researchers are seeking an ethnically diverse patient population to investigate whether the results extend to other populations. And further investigation is needed into the role of the microbiome in the manifestation, cause, or progression of

endometrial cancer. According to Dr. Walther-Antonio, because of the modifiable nature of the microbiome, this discovery also holds the promise of a critical advance in endometrial cancer prevention.

Researchers are looking ahead:

- Investigating the possibility of using vaginal swabs as an early screening tool for endometrial cancer
- Investigating the possibility of using benign endometrial biopsies to identify patients who will develop endometrial cancer in the future

"These findings provide important insights into the etiology or manifestation of the disease with broad implications for biomarker development in the early detection of, and screening for, endometrial cancer," says Dr. Walther-Antonio.

More information: Marina R. S. Walther-António et al. Potential contribution of the uterine microbiome in the development of endometrial cancer, *Genome Medicine* (2016). DOI: 10.1186/s13073-016-0368-y

Provided by Mayo Clinic