**Study of Cancer of the Fallopian Tube**

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**Abstract**

The purpose of this study is to examine cancer originating in the fallopian tube and the number of known occurrences in women. Additionally, this document details the classification system and the influences and outcomes of fallopian tube cancer. Factors such as age, race, and comorbidities (multiple occurrences of diseases, in this case multiple types of cancer) are examined to provide a full comparison of possible connections. Cancer that originates in the fallopian tube is typically in the distal region or the fimbriae, which are the fingerlike projections connecting the fallopian tube to the ovaries. The cancer can then spread from there, made easier by the physical connection and close proximity to a woman’s other reproductive organs.

**Introduction**

Cancer specifically developed in the fallopian tube is, itself, considered a rare diagnosis. There is only 1% of cases per gynecological cancer cases in women or, put in simpler terms, the number of cases in the fallopian tube compared to the other organs in a woman’s reproductive system. It is also currently being traced as a factor in the development of ovarian cancer. 40-60% of tumors of the peritoneum and ovary have possible origins in the fallopian tube in the fimbriae end. Some tumors possibly originate from endometriosis as well.

There are connections of cancer of the fallopian tube to mutations of BRAC1 and BRAC2 which are tumor suppressor genes. There also studies concluded to indicate these mutations are possibly genetically hereditary. The mutations can be passed through a family and can have a number of possible effects on a female reproductive system.

Fallopian tube cancer is studied through a series of tissue studies, comparisons of lineage, and possible comorbidities and their proximity to the fallopian tube if cancer is shown to be present.

**Recent Progress**

Recent research has been conducted with the Ontario Cancer Registry which aided in identification of an increase in cases of fallopian tube cancer in women. The statistical study was initially conducted from 1990-1998 of histological studies (a microscopic study of tissues) in which the data was collected and compared. Detailed family pedigrees were collected, as well as a study restricted to living patients with the diagnosis of fallopian cancer.

The detailed analysis of both living patients, those with family members who had the same diagnosis, and the comparison to patients without fallopian tube cancer showed a difference in the genes BRCA1 and BRCA2, showing mutations present in those with fallopian tube cancer.

According to the article by Aziz et. al., it was actually very difficult to obtain data for the study. The researchers involved had to reach out to physicians. Some physicians didn’t respond. Some of the patients didn’t respond. Some of the patients couldn’t speak English, which created a barrier in the research. Out of 60 patients they attempted to reach out to, 45 responded to the research. Of these, who gave full results of their tests, they found 11% had the protein BRCA1.

As detailed in the article by Prat, the staging of fallopian tube cancer uses a FIGO system. In stage one, the tumor is confined to the ovaries or the fallopian tubes (as the two are connected, it is logical that they would share the same stage). In the second stage, tumors may be found in one or both ovaries and fallopian tubes and extend below the pelvic brim. In stage three, the tumor is found in one or both ovaries or fallopian tubes, has become peritoneal cancer, and has cytologically or histologically been confirmed spread to the peritoneum outside of the pelvis or located further in the retroperitoneal lymph nodes. In the fourth and final stage, metastasis (the continued movement of cancer) has proceeded outward, excluding peritoneal metastases meaning the cancer originated in the fallopian tube but has spread to very distant parts of the woman’s body.

**Discussion**

Fallopian tube cancer is becoming more prevalent in research as data is beginning to suggest cases are higher than initially thought. Research initially began with ovarian and uterine cancer, but as scans began to show tumor development in the fallopian tube, it became recognized as a possible, albeit rare, site of origin. The staging process of fallopian tube cancer is best monitored through surgical means with a histological confirmation (meaning a study of the tissue that shows cancer is present, and the extent of that presence in the fallopian tube is observed).

The mutation present in BRCA1 and BRCA 2 suggests the function of these tumor suppressor genes is lost with this particular mutation. This loss of function would result in a failed attempt to prevent the tumors that develop in the fallopian tube, as well as those that may develop in the uterus, and in the ovaries. I believe this could also possibly contribute to cervical cancer as it shares the same proximity the uterus does in regard to the fallopian tube.

Berek et. al. shows fallopian and ovarian tumors can occur in all ages. In patients age 20 or younger it is usually attributed to stem cell development. Hereditary factors have been attributed to 10% of cancer incidents in women. It seems the cause of fallopian cancer is still widely unknown. There are certain factors that may act as influences in cancer development, but research has yet to yield true results defining the development and growth of ovarian cancer. It is necessary to continue research as it seems ovarian and fallopian tube cancer is very prevalent in women, and yet it is unclear what causes it. The initial assumed cause of fallopian tube cancer, BRCA1 and BRCA2, does not play as large of a role as is initially insinuated.

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