What Causes Ovarian Cancer?

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Little is known about the causes of ovarian carcinoma, a major type of cancer affecting women. Fortunately, scientists at the College of Veterinary Medicine have performed a study that attempts to identify the effects of specific genetic changes (mutations) on the development of the disease. Usually, cancer is caused by multiple mutations. Importantly, different combinations of mutations can lead to the same type of cancer.

In order to find out which combinations of mutations were causing ovarian cancer, researchers used the Cancer Genome Atlas, an international project listing the mutated genes found in patient tumor samples. They then created combinations of mutations in two different kinds of ovarian cells. They looked at epithelial cells (cells that are found on the surface of the ovaries) and ovarian epithelial stem cells (more primitive cells that have the ability to change into other kinds of cells). They found that the stem cells turned out to be were more easily changed into cancerous cells.

The researchers were able to identify which combinations of genes were able to cause the development of ovarian cancer, at least in the laboratory. Surprisingly, they also found some mutations that were able to block the development of cancerous traits. This information will be helpful to patients because doctors will be able to figure out which mutations are behind their condition. Drugs targeting specific mutations could be developed to improve treatment and patient outcomes.

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