

Cancer Advances: Extent of Cancer Risk Reduction through Ovary Removal Depends on BRCA Mutation Type

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Preventive removal of the ovaries and fallopian tubes in women with *BRCA1/2* mutations has been shown to substantially reduce the risk of both gynecological and breast cancers.

In a new study, researchers have shown that the extent of cancer risk reduction resulting from the procedure varies according to the type of genetic mutation women have. The researchers, from Memorial Sloan-Kettering Cancer Center, University of Pennsylvania and nine other institutions, found that women with mutations in the *BRCA2* gene have nearly twice the reduction in breast cancer risk following the surgery compared to women with *BRCA1* mutations. The study was published in the *Journal of Clinical Oncology (JCO)*.

The study also found that women with *BRCA1* mutations have a significantly reduced risk of gynecologic (ovarian, fallopian tube or primary peritoneal) cancer following surgery; the study was not able to estimate the impact of surgery on gynecologic cancer risk for women with *BRCA2* mutations, due to a smaller number of cancers occurring in these women.

Researchers compared the number of breast and gynecologic cancers between 509 women with a *BRCA1* or *BRCA2* mutation who had their ovaries and fallopian tubes surgically removed (a procedure known as risk-reducing salpingo-oophorectomy, or RRSO) and 283 women with these mutations who did not have the surgery. After an average of three years, RRSO reduced breast cancer risk in women with a *BRCA2* mutation by 72 percent, compared with 39 percent among those with a *BRCA1* mutation.

The surgery reduced gynecologic cancer risk in women with a *BRCA1* mutation by 85 percent. Because very few gynecologic cancers were observed in the *BRCA2* group (two among those who did not have RRSO versus zero among those who did), researchers were not able to conclude the level of risk reduction for these women.

The investigators also found that in the group overall, RRSO markedly reduced the risk of developing estrogen-receptor-positive breast cancer (by 78 percent), but had no significant effect on the development of breast cancer that did not express this receptor.

What Does This Mean for Patients?

These findings may help women with *BRCA* mutations and their doctors make more informed choices about strategies to reduce their risk of breast and gynecological cancers. In women with *BRCA2* mutations, for example, preventive removal of the ovaries and fallopian tubes appears to be very protective against breast cancer.

And while RRSO greatly reduces gynecologic cancer risk in women with *BRCA1* mutations, it has less effect on reducing *breast* cancer risk in these women. As a result, women with *BRCA1* mutations may want to consider other strategies (such as intensive monitoring or prophylactic mastectomy).

In addition, women with *BRCA1* mutations should also consider the fact that RRSO had no impact on the development of estrogen-receptor-negative breast cancers, since these cancers occur more frequently among women with *BRCA1* mutations.

Helpful Links

People Living with Cancer Web site: www.plwc.org/breast [2] and www.plwc.org/ovarian [3]

Links:

[1] <http://www.jco.org>

[2] <http://www.plwc.org/breast>

[3] <http://www.plwc.org/ovarian>