Hereditary Breast and Ovarian Cancer

What are the risks and how can they be reduced ?

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1- What is hereditary / familial breast and ovarian cancer?

To find out if it is possible that breast and/or ovarian cancer run in your family, look at your whole family history; both the maternal (mother's) and paternal (father's) sides.

Most breast cancers are not related to genetics at all, however; about 5-10 percent are due to an inherited mutation (alteration) in the breast/ovarian cancer genes, known as BRCA 1 and BRCA 2.

Characteristics of families with BRCA mutations:
Families with BRCA 1 and 2 mutations generally have one or more of the following:

1. Several close relatives with breast cancer
2. Family members with breast cancer diagnosed under the age of 50
3. Individuals with bilateral breast cancer (cancer in both breasts)
4. Ovarian cancer in at least one family member
5. Breast and ovarian cancer in the same individual
6. Large numbers of relatives with other cancers such as prostate and pancreatic cancer
7. Family members with male breast cancer.

If you recognize any of the above features from your own family you may find it helpful to talk to your primary healthcare physician to get referral to high risk clinic at the National Center for Cancer Care and Research.

2- What is BRCA Testing?

BRCA testing is for individuals at risk of developing hereditary breast or ovarian cancer. If your physician and genetic counselor determine that you may be at risk, following an assessment at the high risk clinic at NCCCR, you will be referred for BRCA testing.
BRCA testing does not tell you whether you have cancer, but detects genetic mistakes in the BRCA 1 and BRCA 2 genes. These genetic mistakes in these genes are responsible for the vast majority of hereditary breast and ovarian cancer. BRCA testing doesn't tell whether you will definitely develop cancer, it can only predict your approximate risk for future cancers related to hereditary breast and ovarian cancers. The test involves just a small blood sample being taken for analysis. Results can be obtained from your health care provider when you have post genetic test counseling clinic appointement at NCCCR in 4-6 weeks

3- What are the possible outcomes and benefit of genetic testing?

Test results may enable you and your family to make more informed choices about how you want to prepare yourself against hereditary breast and ovarian cancer.

Check your genes

There are three possible outcomes from the test:

1. A mistake or mutation is identified which is known to increase the risk of breast and ovarian cancer. You will then go for screening and couseling so you can decide what you want to do. Predictive testing will also be offered to your relatives. It is possible to reduce the chances of developing cancer through medication or surgery. Your doctor will be able to support you to decide what is the right path for you. Even if you have already been diagnosed with breast or ovarian cancer, there are certain steps you can take to help prevent a secondary cancer.
2. A genetic variation is found, but whether or not this could cause cancer is unknown. Further studies may be necessary.

3. No mistake or mutation is found. If BRCA testing doesn't detect any mistakes or mutations in the genes, your risk for breast or ovarian cancer will be the same as the general population. Depending on your personal or family history, regular breast screening may still be required, particularly when there is a strong family history of breast or ovarian cancer in three possible outcomes.

4- What option are there if a mutation is identified in the BRCA1/2 genes?

There are many options available should a mutation be discovered. You need to discuss with your clinical team and your loved ones to decide what is right for you.

1. Surveillance – you could wait and see what happens, using regular screening
2. Surgery – it is possible to have pre-emptive surgery to reduce the risk of cancer
3. Preventative drug therapy – there are some drugs you can take that will reduce the risk of developing cancer

People who test negative, or whose results shows a variant, might need to be on surveillance depending on the personal and family history.

BRCA testing can help you find your hereditary breast and ovarian cancer risk, so you can be prepared and take decisions to manage the risk if you want to, before any cancer develops.

1. Surveillance

Keeping an eye on things is one way to manage the risk.

Breasts:

- Education. To be breast aware from the age of 18.
- Clinical breast examination every 6 months from the age of 25.
- Regular breast X- rays.
- Ovaries: pelvic ultrasound and testing for CA-125 levels in the blood every six months starting at age 35, or, if there is ovarian cancer in the family, 5-10 years earlier than the age of the youngest person at the time of their diagnosis.

2. Preventative drug therapy:

Drugs such as Tamoxifen and Raloxifene have been shown to reduce the risk of both breast and ovarian cancer in high-risk women.

3. Preventative surgery:

A. Preventative removal of the breasts (mastectomy) significantly reduces the risk of developing breast cancer.

B. Preventive removal of the ovaries and fallopian tubes (salpingo-oophorectomy) significantly reduces the risk of ovarian cancer and may also reduce the risk of breast cancer.

What is right for you?

Everyone is different and only you can decide what the right course of action is for you. Be sure you understand all the pros and cons of all the options before making your mind up. It may help to ask questions of the clinical team so you feel fully informed and confident about your decision.