

The basics of BRCA genes and cancer

Determining your individual risk BY KRISTINE BURNETT

According to Mary Cianfrocca, D.O., director of the Breast Cancer Program and medical director of the Clinical Cancer Genetics Program at Banner MD Anderson Cancer Center in Gilbert, less than 10 percent of breast cancer patients have either the BRCA1 or BRCA2 susceptibility gene mutation. "BRCA genes predispose a woman to breast cancer, ovarian cancer and various other forms of cancer, but it's not a guarantee that cancer will develop," she said. "Also, the vast majority of cancers occur sporadically."

Furthermore, the risk varies between BRCA genes. Robert Kuske, M.D., medical director of Arizona Breast Cancer Specialists, said that the lifetime risk of developing breast cancer is between 75 and 85 percent for BRCA1 and BRCA2 carriers, while the risk of the more lethal ovarian and/or fallopian tube cancer is up to 44 percent.

Not just women

Pointing out that women are not the only ones who need to understand the risks, Kuske said that in addition to passing the genes on to their children, men who are BRCA carriers face their own risk of developing breast cancer or another form of cancer.

"Men usually do not get tested for BRCA1/2, but their risk of breast cancer is between one and 10 percent," he said. "If they carry the gene, they have a

three- to seven-fold increased risk of prostate cancer. Pancreatic cancer also is associated with BRCA1/2."

Genetic testing

While having a BRCA gene is certainly cause for concern, not everyone can or should be tested for the mutation. Determining whether to undergo genetic testing is based on one's personal and/or family health history.

Mike Janicek, M.D., gynecologic oncologist with Arizona Oncology and medical director of the Virginia G. Piper Cancer Center's Cancer Genetic Risk Assessment and Prevention Program, clarified the role of genetics and family history. "Disease patterns in families can tell a lot about what to look for, what preventive measures to consider, and even which treatment approaches are most appropriate," he said. "Recognizing these patterns promptly can be life-saving."

Cianfrocca stressed the importance of looking at all types of cancer in the family as well as ancestry (including countries of origin) since certain ethnicities have an increased risk. She highlighted factors such as a presence of cancer under age 50, same or related cancers among two or more relatives on the same side of the family, breast and ovarian cancer in the same family, male breast cancer and any rare form of cancer as examples of reasons for genetic testing.

Free online disease mapping and pedigree tools like the Surgeon General's My Family Health Portrait (available on the U.S. Department of Health and Human Services website, FamilyHistory.hhs.gov) can help determine your individual risk.

Informed decision-making

Confirming the presence of BRCA1/2 enables people to make informed decisions about their health. This could include preventive breast and/or ovary and/or fallopian tube removal or enhanced active surveillance and screening. Janicek noted that there is a relatively new class of drugs called PARP inhibitors that are designed specifically for cancer patients with BRCA genes.

"How to proceed following confirmation of BRCA1/2 is an incredibly personal choice and women need to know they have options," Kuske said. "About 60 percent of my patients choose preventive surgery. The social and emotional implications of surgery weigh heavily on one's decision."

Insurance coverage

Though not all insurance plans cover genetic testing, Janicek said many insurance companies do want high-risk patients to be tested. "It's much less expensive to pay for preventive care than cancer treatment," he said.

If not covered by their insurance plan, a person can elect to pay out-of-pocket, something Kuske recommends for individuals who may be paralyzed by the fear of not knowing whether they carry a gene mutation.

For those who may worry that genetic testing could lead to denial of insurance coverage, Kuske hopes to calm their fears by discussing the Affordable Care Act and its stance on not allowing coverage exclusions based on pre-existing conditions.

Resources

American Cancer Society:
cancer.org

National Cancer Institute:
cancer.gov

U.S. Department of Health and Human Services, Office on Women's Health: womenshealth.gov

