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Editorial

Why BRCA Mutation Testing for Breast Cancer?

Dr. DM Arifur Rahman, Prof. Moudud Hossain Alamgir

Breast cancer is a group of heterogeneous tumors with a wide spectrum of morphologic subtypes and biologic behaviors.¹ One of the major challenge in the treatment of breast cancer is to identify subgroups of breast cancer patients who will benefit from a particular adjuvant therapy regimen, with the goal of minimizing overtreatment or undertreatment.^{2, 3}

Contemporary management approaches for breast cancer depends on consideration of a group of key clinicopathologic factors that include patient age, menopausal status, tumor size, histologic type, lymphovascular invasion, lymph node staging, tumor grade, and evidence of distant metastasis along with the estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2) status of the tumor.

Familial breast cancer is another area of concern as 10% to 20% women with breast cancer also have an affected first degree relative (parent, sister, or daughter).⁴ Meta-analysis has reported that the rate of lifetime risk of breast cancer is in the range of 47% to 66% for BRCA1 mutation carriers and 40% to 57% for BRCA2.^{5, 6} BRCA1 and BRCA2 have a major role in DNA repair. Genetic deletion of these genes results in genomic instability.^{7, 8}

Because BRCA mutation carriers having significant breast cancer risk, they are ideal candidate for interventions aimed at cancer prevention or cancer risk reduction. These interventions can include frequent screenings with mammograms, screenings with magnetic resonance imaging, chemoprevention with tamoxifen, and prophylactic oophorectomy or mastectomy.^{9, 10, 11}

Recent understanding about the molecular biology of BRCA1 and BRCA2 reveals that cells with mutations in these genes are sensitive to blockade of poly ADP ribose polymerase (PARP) and the alternative base-excision DNA repair (BER) pathway. Studies

show promising result in platinum-based chemotherapeutic agents and of PARP inhibitors for treatment of breast cancers with BRCA1 or BRCA2 mutation.¹²

NCCN guideline published the indications for BRCA testing. Most important indications include: breast cancer diagnosed at the age of 45 or less, tripple negative breast cancer diagnosed at the age of sixty or less, two first-degree relatives under the age of 50 years with a diagnosis of breast cancer, three or more first- or second-degree relatives with breast cancer regardless of age at diagnosis, a combination of first- or second-degree relatives with breast or ovarian cancer, individuals with any blood relative having BRCA mutation.¹³

In a nutshell, early intervention of a BRCA mutation can reduce familial breast cancer incidence and the clinical benefits of PARP inhibitor in BRCA-related diagnosed breast cancer pose the utmost importance BRCA testing in targeted population. As the cost of BRCA testing is within the limit of lower/middle income peoples of Bangladesh now, we strongly recommend BRCA testing for indicated population.

References

1. Impson PT, Reis-Filho JS, Gale T, Lakhani SR. Molecular evolution of breast cancer. *J Pathol.* 2005; 205:248-254.
2. Eifel P, Axelson JA, Costa J, et al. National Institutes of Health Consensus Development Conference statement: adjuvant therapy for breast cancer, November 1-3, 2000. *J Natl Cancer Inst.* 2001; 93:979-989.
3. Ravdin PM, Siminoff LA, Davis GJ, et al. Computer program to assist in making decisions about adjuvant therapy for women with early breast cancer. *J Clin Oncol.* 2001; 19:980-991.

4. Tan D, Lynch HT. Principles of molecular diagnostics and personalized cancer medicine. Lippincott Williams & Wilkins; 2012 Dec 7.
5. Antoniou A, Pharoah PD, Narod S, Risch HA, Eyfjord JE, Hopper JL, Loman N, Olsson H, Johannsson O, Borg Å, Pasini B. Average risks of breast and ovarian cancer associated with BRCA1 or BRCA2 mutations detected in case series unselected for family history: a combined analysis of 22 studies. The American Journal of Human Genetics. 2003 May 1; 72(5):1117-30.
6. Chen S, Iversen ES, Friebel T, Finkelstein D, Weber BL, Eisen A, Peterson LE, Schildkraut JM, Isaacs C, Peshkin BN, Corio C. Characterization of BRCA1 and BRCA2 mutations in a large United States sample. Journal of clinical oncology: official journal of the American Society of Clinical Oncology. 2006 Feb 2; 24(6):863.
7. Walsh T, King MC. Ten genes for inherited breast cancer. Cancer Cell. 2007; 11:103-105.
8. Konishi H, Mohseni M, Tamaki A, et al. Mutation of a single allele of the cancer susceptibility gene BRCA1 leads to genomic instability in human breast epithelial cells. Proc Natl Acad Sci U S A. 2011;108:17773-17778
9. Warner E, Plewes DB, Hill KA, Causer PA, Zubovits JT, Jong RA, Cutrara MR, DeBoer G, Yaffe MJ, Messner SJ, Meschino WS. Surveillance of BRCA1 and BRCA2 mutation carriers with magnetic resonance imaging, ultrasound, mammography, and clinical breast examination. Jama. 2004 Sep 15; 292(11): 1317-25.
10. Metcalfe K, Lynch HT, Ghadirian P, Tung N, Olivetto I, Warner E, Olopade OI, Eisen A, Weber B, McLennan J, Sun P. Contralateral breast cancer in BRCA1 and BRCA2 mutation carriers. Journal of Clinical Oncology. 2004 Jun 15;22(12):2328-35.
11. Kauff ND, Domchek SM, Friebel TM, et al. Risk-reducing oophorectomy for the prevention of BRCA1 and BRCA2-associated breast and gynecologic cancer: a multicenter, prospective study. J Clin Oncol. 2008; 26:1331-1337.
12. Rodler ET, Kurland BF, Griffin M, Gralow JR, Porter P, Yeh RF, Gadi VK, Guenthoer J, Beumer JH, Korde L, Strychor S. Phase I Study of Veliparib (ABT-888) Combined with Cisplatin and Vinorelbine in Advanced Triple-Negative Breast Cancer and/or BRCA Mutation–Associated Breast Cancer. Clinical Cancer Research. 2016 Jun 15; 22(12):2855-64.
13. Daly MB, Pilarski R, Yurgelun MB, Berry MP, Buys SS, Dickson P, Domchek SM, Elkhany A, Friedman S, Garber JE, Goggins M. NCCN guidelines insights: genetic/familial high-risk assessment: breast, ovarian, and pancreatic, version 1.2020: featured updates to the NCCN guidelines. Journal of the National Comprehensive Cancer Network. 2020 Apr 1;18 (4):380-91.

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