

Prophylactic Mastectomy and Genetic Testing: An Update

Shauna L. Houshmand, RN, BSN, Craig T. Campbell, MSc, PhD, Sheri E. Briggs, RN, BSN, Andrew W.J. McFadden, MD, FRCSC, and Taher Al-Tweigeri, MBBch, FRCPC

Purpose/Objectives: To examine and discuss the possible benefits and difficulties with recommending prophylactic mastectomy to BRCA1- and BRCA2-positive women.

Data Sources: Published research articles, professional review articles, textbooks.

Data Synthesis: Women with BRCA1 and BRCA2 mutations face a much higher risk of developing breast cancer than the general population, with limited options available for prevention. Prophylactic mastectomy has been shown to have a survival advantage in young women who carry BRCA1 and BRCA2 mutations. Challenges exist, however, in the use of prophylactic mastectomy and genetic testing.

Conclusions: Methods of preventing breast cancer in BRCA1- and BRCA2-positive women currently are limited to watch-and-wait surveillance, prophylactic mastectomy, and, perhaps, chemoprevention. Genetic testing and prophylactic mastectomy each present unique challenges while offering certain benefits as well. Recent studies have shown survival advantages to BRCA1- and BRCA2-positive women who undergo prophylactic mastectomy.

Implications for Nursing Practice: Nurses need to be aware of the complex issues surrounding testing for BRCA1 and BRCA2 mutations and prophylactic mastectomy to be able to provide current information to patients and assist in decision making.

Key Points . . .

- ▶ Women who inherit BRCA1 or BRCA2 gene mutations face a much higher risk of developing breast cancer and other cancers than the general public, despite accounting for less than 10% of all breast cancers.
- ▶ Methods for the prevention of breast cancer in carriers of BRCA1 and BRCA2 mutations have not been proven conclusively.
- ▶ Many controversies, ethical dilemmas, and psychological implications surround genetic testing for breast cancer susceptibility genes and prophylactic mastectomy.
- ▶ Recent studies have demonstrated a survival advantage for a subgroup of BRCA-positive women who have undergone prophylactic mastectomy.

Examination of the issues surrounding the role of prophylactic mastectomy in the prevention of breast cancer is not new. Some consider the surgery a radical and disfiguring modality; others consider it the only preventive treatment for breast cancer presently

Shauna L. Houshmand, RN, BSN, is an oncology nurse at Saskatoon Cancer Centre; Craig T. Campbell, MSc, PhD, is a research genetic counselor with the Saskatchewan Hereditary Cancer Program at Saskatoon Cancer Centre and the University of Saskatchewan; Sheri E. Briggs, RN, BSN, is an oncology nurse at Saskatoon Cancer Centre; Andrew W.J. McFadden, MD, FRCSC, is an associate professor of surgery and program director—general surgery in the Department of Surgery at the University of Saskatchewan; and, at the time this article was written, Taher Al-Tweigeri, MBBch, FRCPC, was a medical oncology and clinical associate professor in the College of Medicine at the University of Saskatchewan, all in Saskatoon, Saskatchewan, Canada. (Submitted November 1999. Accepted for publication May 1, 2000.)

Objectives for CE Enrollees

On completion of this CE, the participant will be able to

1. Discuss the indications for prophylactic mastectomy.
2. Discuss the challenge of interpreting genetic test results.
3. Discuss the ethical issues associated with genetic testing.