CONTINUING EDUCATION

Strengths and Limitations of Breast Cancer Risk Assessment

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Purpose/Objectives: To evaluate current definitions of breast cancer risk and breast cancer risk assessment models, including the Gail, Claus, and BRCAPRO models, and discuss potential markers to enhance and standardize individual risk assessment.

Data Sources: Published articles, conference proceedings, and textbooks.

Data Synthesis: Defining high risk for breast cancer development is explored, and options for high-risk women are discussed. The risk factors frequently used for risk evaluation, including age, age at menarche, age at first live birth, past history of breast biopsy, family history of breast cancer, and the presence of atypical hyperplasia, are reviewed.

Conclusions: Current models of breast cancer risk assessment are limited. Exploring the progression from healthy tissue to malignancy through techniques such as fine needle aspiration, ductal lavage, and nipple aspiration may lead to more precise individualized risk prediction.

Implications for Nursing: More accurate information regarding personal breast cancer risk is necessary. Oncology nurses may facilitate the use of appropriate tools that provide the most individualized risk assessment.

Key Points . . .

➤ Assessing individual breast cancer risk has not been articulated in the United States despite an abundance of research devoted to risk factors.

➤ Currently employed risk assessment tools include the Gail model, the Claus model, and BRCAPRO.

➤ Exploring biologic markers such as atypical hyperplasia using minimally invasive methods (e.g., fine needle aspiration, ductal lavage, nipple aspiration) may enhance risk prediction.

Goal for CE Enrollees:

To enhance nurses' knowledge about breast cancer risk factors, risk assessment models, and potential areas for refinement.

Objectives for CE Enrollees:

1. Summarize the impact of known risk factors on the development of breast cancer.
2. Discuss the strengths and limitations of currently used breast cancer risk assessment models.
3. Describe the potential role of pathologic information in more precisely determining breast cancer risk.

Fear of developing breast cancer is well founded among women in the United States. Breast cancer is the leading cause of death among women aged 35–50 years and the second-leading cause of death in women older than 50 years (Jemal et al., 2005). Approximately 40,000 women will die from this disease in the United States in 2005. Refining the science of breast cancer risk assessment has become more important with the availability of genetic testing for mutations associated with an increased risk of breast cancer development and the manufacture of medications to reduce breast cancer risk (Hollingsworth, Nall, & Dill, 2002).

A standardized algorithm for breast cancer risk assessment is not available at this time in the clinical setting. Women are categorized as either having possible genetic or hereditary risk or as having risk factors unrelated to a family history of breast cancer. Genetic testing is limited as a risk assessment tool because only a small percentage of women carry known genetic mutations that result in an increased risk of breast cancer development. Mathematical models calculate probabilities of developing breast cancer over specified periods of

time; however, the factors included in the models contribute a relatively small degree of risk for the eventual development of breast cancer. Hollingsworth et al. (2002) suggested that

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