A Framework for Breast Cancer Prevention Using a Computerized Decision Aid

Elissa Ozanne, Ph.D.

Kelly Adduci, M.P.H.

Caroline Annis, M.S.

Laura Esserman, M.D., M.B.A.

Abstract

Background

Current prevention decision making typically uses the Gail, Claus, and BRCA risk assessment models, followed by a discussion of intervention options and recommendations. In this setting, patients rarely choose a preventive intervention. We hypothesize that prevention decisions would be better supported by a shared decision-making framework in order to provide the clinical context and data that can appropriately motivate women to choose appropriate interventions. Investigators have developed a computerized shared decision-making aid for breast cancer prevention decisions that includes individual risk assessments in a contextual framework.

Methods

Physicians in the prevention clinic at the UCSF Breast Care Center were trained to use the shared decision-making framework. The decision algorithm includes a general health and breast cancer risk assessment using both the Gail and Claus risk models. Standard format for data presentation was implemented using absolute risk information with consistent graphical presentation. Breast cancer risk over time is presented in the context of age-matched women and evidence-based models using biomarkers (atypia, serum estradiol levels in postmenopausal women, status of BRCA1/2 mutations) as risk discriminators and predictors of benefit from interventions. Pilot-testing compared use of the computerized decision aid with the physician training only.

Results

The proposed shared decision-making framework increased patient interest in prevention interventions. Initially, 13% of patients were interested in prevention interventions before the consultations, as compared with 23% after the consultation. Similarly, patient interest in risk refinement interventions increased from 7% to 23%. The feasibility outcomes showed that the computerized decision aid did not interfere with the consultation as measured by consultation duration, user satisfaction, patient knowledge, and decisional conflict.

Conclusions

The decision framework provides access to key information during consultations and allows the integration of emerging biomarkers in the prevention setting. As compared with previously studied clinical behavior, the framework increased patient interest in both preventive interventions and learning more about their level of risk. Initial results suggest that the decision aid is feasible for use in the consultation room. Future applications of the decision aid include a randomized trial to determine impact on decision making and the integration of tools to store data and track decisions and outcomes.