

ABSTRACT SUMMARY

CURRENT COMPREHENSIVE ASSESSMENT AND MANAGEMENT OF WOMEN AT INCREASED RISK FOR BREAST CANCER

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ABSTRACT

The potential for reducing the risk of breast cancer through selective estrogen receptor modulators, aromatase inhibitors, and surgery has generated interest in the use of quantitative models of risk assessment. With the addition of ductal lavage cytology to traditional epidemiologic risk factors, a discovery of cellular atypia can result in refinement of assigned risk values, while simultaneously optimizing patient selection for selective estrogen receptor modulators utilization. In view of increasing complexity in this arena, a Risk Assessment Working Group was formed to outline management strategies for the patient at an elevated risk for the development of breast cancer. No longer a statistical exercise, quantitative risk assessment is part of basic breast care and comprehensive management includes a discussion of the following: ductal lavage for improved risk stratification, multiple options for risk reduction, and high risk surveillance strategies that might incorporate investigational imaging protocols.

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BENIGN BREAST DISEASE AND THE RISK OF BREAST CANCER

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ABSTRACT

BACKGROUND Benign breast disease is an important risk factor for breast cancer. We studied a large group of women with benign breast disease to obtain reliable estimates of this risk.

METHODS We identified all women who received a diagnosis of benign breast disease at the Mayo Clinic between 1967 and 1991. Breast-cancer events were obtained from medical records and questionnaires. To estimate relative risks, we compared the number of observed breast cancers with the number expected on the basis of the rates of breast cancer in the Iowa Surveillance, Epidemiology, and End Results registry.

RESULTS We followed 9087 women for a median of 15 years. The histologic findings were nonproliferative lesions in 67 percent of women, proliferative lesions without atypia in 30 percent, and atypical hyperplasia in 4 percent. To date, 707 breast cancers have developed. The relative risk of breast cancer for the cohort was 1.56 (95 percent confidence interval, 1.45 to 1.68), and this increased risk persisted for at least 25 years after biopsy. The relative risk associated with atypia was 4.24 (95 percent confidence interval, 3.26 to 5.41), as compared with a relative risk of 1.88 (95 percent confidence interval, 1.66 to 2.12) for proliferative changes without atypia and of 1.27 (95 percent confidence interval, 1.15 to 1.41) for nonproliferative lesions. The strength of the family history of breast cancer, available for 4808 women, was a risk factor that was independent of histologic findings. No increased risk was found among women with no family history and nonproliferative findings. In the first 10 years after the initial biopsy, an excess of cancers occurred in the same breast, especially in women with atypia.

CONCLUSIONS Risk factors for breast cancer after the diagnosis of benign breast disease include the histologic classification of a benign breast lesion and a family history of breast cancer.
[*N Engl J Med*, 2005; 253:229-237]

BREAST CANCER INCIDENCE IN WOMEN WITH ABNORMAL CYTOLOGY IN NIPPLE ASPIRATES OF BREAST FLUID

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ABSTRACT

BACKGROUND This is a prospective study of breast cancer risk in relation to nipple aspirate fluid cytology in 2,701 volunteer white women from the San Francisco Bay Area first enrolled between 1973 and 1980.

METHODS The women were not pregnant or lactating and were free of breast cancer within 6 months of entry into the study. The breast cancer status of this cohort was determined between June 1988 and April 1991. Follow-up was complete for 87% (n = 2,343) of the cohort, representing 29,961 person-years and an average of 12.7 years of follow-up. The overall breast cancer incidence was 4.4% (104 of 2,343) and rose with fluid cytology findings as follows: no fluid obtained, 2.6% (9 of 352); unsatisfactory specimen, 4.8% (15 of 315); normal cytology, 4.3% (56 of 1,291); epithelial hyperplasia, 5.5% (18 of 327); and atypical hyperplasia, 10.3% (6 of 58). Relative risks for breast cancer and their 95% confidence intervals were estimated by Cox regression, adjusting for age and year of entry. Compared with the relative risk for women who yielded no fluid, relative risks were: unsatisfactory specimen, relative risk (RR) = 1.4 (95% confidence interval (CI) 0.6-3.3); normal cytology, RR = 1.8 (95% CI 0.9-3.6); epithelial hyperplasia, RR = 2.5 (95% CI 1.1-5.5); and atypical hyperplasia, RR = 4.9 (95% CI 1.7-13.9). These findings were strongest for and were mainly confined to women aged 25-54 years. Women with atypical hyperplasia and a first-degree family history of breast cancer were six times more likely to develop breast cancer than were women with atypical hyperplasia but without a family history of breast cancer (95% CI 1.0-30.2).

CONCLUSIONS These findings provide strong support for our hypothesis that hyperplasia and atypical hyperplasia diagnosed in nipple aspirates of breast fluid are associated with an increased risk of breast cancer.
[*Am J Epidemiol*, 1992;135:130-41]

CYTOLOGIC FEATURES OF NIPPLE ASPIRATE FLUID USING AN AUTOMATED NON-INVASIVE COLLECTION DEVICE: A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

BACKGROUND Detection of cytologic atypia in nipple aspirate fluid (NAF) has been shown to be a predictor of risk for development of breast carcinoma. Manual collection of NAF for cytologic evaluation varies widely in terms of efficacy, ease of use, and patient acceptance. We investigated a new automated device for the non-invasive collection of NAF in the office setting.

METHODS A multi-center prospective observational clinical trial involving asymptomatic women designed to assess fluid production, adequacy, safety and patient acceptance of the HALO NAF Collection System (NeoMatrix, Irvine, CA). Cytologic evaluation of all NAF samples was performed using previously described classification categories.

RESULTS 500 healthy women were successfully enrolled. Thirty-eight percent (190/500) produced fluid and 187 were available for cytologic analysis. Cytologic classification of fluid producers showed 50% (93/187) Category 0 (insufficient cellular material), 38% (71/187) Category I (benign nonhyperplastic ductal epithelial cells), 10% (18/187) Category II (benign hyperplastic ductal epithelial cells), 3% (5/187) Category III (atypical ductal epithelial cells) and none were Category IV (unequivocal malignancy). Overall, 19% of the subjects produced NAF with adequate cellularity and 1% were found to have cytologic atypia.

CONCLUSIONS The HALO system is a simple, safe, rapid, automated method for standardized collection of NAF which is acceptable to patients. Cytologic assessment of HALO-collected NAF showed the ability to detect benign and pre-neoplastic ductal epithelial cells from asymptomatic volunteers.

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CYTOPATHOLOGY OF ABNORMAL NIPPLE DISCHARGE: A CYTO-HISTOLOGICAL CORRELATION

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ABSTRACT

Spontaneous or expressible nipple discharge may occur in palpable and nonpalpable breast lesions. The aim of the study was to evaluate the sensitivity and specificity of nipple discharge cytology in palpable and nonpalpable breast lesions. One hundred and seventy-four nipple discharge specimens were reviewed, of which 82 had corresponding surgical pathology, including 34 palpable breast lesions and 48 nonpalpable breast lesions. There was good correlation between nipple discharge cytology and concomitant fine needle aspiration (FNA) cytology. Nipple discharge cytology is as specific as concomitant FNA cytology but is slightly less sensitive in detecting papillomas or malignant lesions. The sensitivity and specificity of the nonpalpable and palpable breast lesions were similar. Nipple discharge cytology is very helpful in detecting an underlying breast lesion even if the case has no palpable mass in the breast.

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