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CAN A BREAST RAPID DIAGNOSIS CLINIC WORK IN A DISTRICT GENERAL HOSPITAL?

H. Umeh, T. Walker, L. Horton, S. Courtney
Department of Surgery, Radiology and Pathology, Royal Berkshire Hospital, Reading, U.K.

A Breast Rapid Diagnosis Clinic (BRDC) was set up on 1 October 1993 at the Royal Berkshire Hospital. This study evaluates the effectiveness of the clinic and triple assessment in managing patients with breast disease. 558 new patients were referred to the BRDC in the first six months, all patients being seen within 10 days of referral. A rise in referrals was noted but not a rise in the number of diagnosed breast cancers. 74 (13%) were diagnosed with breast cancer (19 screen detected). Of the symptomatic cases 80% had a diagnosis of breast cancer established by triple assessment at the first visit. 190 patients (34%) had fine needle aspiration cytology with immediate results and 387 patients (69%) same day breast imaging. All symptomatic breast cancers had triple scores greater than 8 (8–15). Only 7 patients with benign breast change had triple scores greater than 8. Patients can be seen with short waiting times and be expeditiously diagnosed and managed using triple assessment.

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UROKINASE PLASMINOGEN ACTIVATOR, A POTENTIAL PROGNOSTIC MARKER FOR NODE-NEGATIVE BREAST CANCER

M.J. Duffy, C. Duggan, H. Mulcahy, E.W. McDermott, J.J. Fenelly, J. Crown, N.J. O'Higgins
Departments of Nuclear Medicine, Gastroenterology, Surgery and Oncology, St Vincent's Hospital, Dublin 4, Ireland

Urokinase plaminogen activator (uPA) is a serine protease directly involved in cancer invasion and metastasis. The aim of this study was to evaluate uPA as a prognostic marker in breast cancer, especially in the node-negative subgroup. uPA was assayed by ELISA (American Diagnostica). Using univariate analysis, uPA was a significant prognostic marker for both disease-free interval ($P = 0.002$) and overall survival ($P = 0.001$). In multivariate analysis using nodal status, tumor size, ER status and patient age, uPA was also a significant and independant prognostic marker. For patients with node-negative disease, high levels of uPA were significantly related to both shortened disease-free interval ($P = 0.005$) and survival ($P = 0.003$). We conclude that uPA is a significant and independent prognostic marker in breast cancer and may be a marker for node-negative disease.

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HISTOLOGICAL CORRELATIONS WITH THE VISIBILITY OF TUMOR EXTENSION IN 3-D MR-MAMMOGRAPHY OF BREAST CANCER

M. Fukuda[1], T. Takahara[3], K. Shimizu[1], T. Arimura[1], T. Ohta[1], S. Yamaguchi[1], H. Kawamoto[2], A. Ihara[2], M. Takagi[2], M. Tadokoro[2], Y. Nakajima[3]
[1]Departments of Surgery, [2]Pathology and [3]Radiology, St. Marianna University School of Medicine, Kawasaki 216, Japan

Magnetic resonance imaging of the breast (MR-Mammography, MRM) is useful for surgical planning if it could show high tumor-gland contrast and clear three-dimensional (3-D) demonstration. In this study histological correlations with the visibility of tumor extension in 3-D MRM (0.5 T) were evaluated in 21 breast cancer cases. T1 weighted gradient echo with fat suppression and magnetization transfer contrast were obtained pre and postinfusion of Gd-DTPA. 3-D reconstruction was done for preoperative mapping of tumor extension. In 15 out of 21 cases (71%) tumor lesions could be clearly demonstrated against fatty breast gland. The fat suppression was effective to determine the invasion of tumor into the pectoral muscle. In 6 out of 21 cases (29%) the tumor lesions could not be clearly separated from the breast gland surrounding them. In these cases either numerous loubles remained surrounding the tumor or marked intraductal spreading of cancer were observed. In conclusion, 3-D MRM is useful for surgical planning. However, the visibility of tumor mainly depends on the nature of background gland.

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FLOW CYTOMETRICALLY DETERMINED S-PHASE FRACTION IS A STRONGER PROGNOSTIC FACTOR IN NODE-NEGATIVE BREAST CANCER THAN IMMUNOHISTOCHEMICALLY DETECTED MIB1 (KI-67)

N. Harbeck, P. Dettmar[1], C. Thomssen, L. Pache, M. Schmitt, F. Jänicke, H. Graeff
Frauenklinik
[1]Institut für Pathologie, Technische Universität, München, Germany

The proliferation markers, S-phase fraction (SPF) and MIB1, were evaluated in 90 primary node-negative breast carcinomas. SPF was determined flow cytometrically using an improved Hedley protocol for release of pure nuclei from formalin-fixed, paraffin-embedded sections. SPF analysis was performed using the ModFit software program (Verity, Maine, U.S.A.). MIB1 immunostaining (Dianova, Hamburg, Germany) was performed on adjacent paraffin sections using APAAP. The percentage of MIB1 positive cells was calculated in 500 randomly chosen tumor cells. Median follow-up was 34 (9–72) months. An optimal cutoff of 8% SPF was found using isotonic regression analysis: 61 (68%) tumors had low (≤8%) and 29 (32%) high (>8%) SPF. The optimal cutoff for MIB1 was 25%: 75 (83%) tumors had a low (≤25%) and 15 (17%) a high (>25%) MIB1 staining percentage. MIB1 was significantly correlated to grading ($P = 0.018$) and medullary histological tumor type ($P < 0.05$), SPF to tumor size ($P = 0.041$) and hormone receptor status ($P = 0.030$). A significant correlation between MIB1 and SPF was found in aneuploid ($P = 0.026$), but not in diploid tumors ($P = 0.164$). In univariate analysis, SPF ($P = 0.0028$) and MIB1 ($P = 0.0224$) were significant predictors of disease-free survival (DFS). Established prognostic factors like tumor size, menopausal or hormone receptor status, and grading were not significant in univariate analysis. In multivariate analysis SPF was the strongest predictor of DFS ($P = 0.0073$); neither MIB1 nor established prognostic factors were significant. Our data suggest that SPF is an important prognostic factor in node-negative breast cancer with a stronger prognostic impact than MIB1. It may therefore be better suited for clinical decision making.

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DECISION MODELS FOR TREATMENT OF *LOBULAR CARCINOMA IN SITU*

T.J. Jordan[1], R.L. Montgomery[2], R.L. De Jager[3]
[1]New York University, NY, U.S.A.
[2]University of Medicine and Dentistry of New Jersey, NJ, U.S.A.
[3]PerImmune, Inc, Rockville, MD, U.S.A.

Since its identification in the 1940's, *Lobular Carcinoma in situ* has posed a treatment dilemma: Whether to "watch, and wait" until the benign lesion becomes malignant, or to perform preventive bilateral mastectomy. This lesion occurs most frequently in premenopausal women, and may remain benign for the remainder of the lifespan. Furthermore, with the advent of low radiation dosage mammography in the 1970's, there is some evidence to suggest that frequent mammographic screening, i.e., at least twice per year, is preferable to preventive mastectomy. The major issue addressed in this investigation is whether frequent screening is, in fact, the preferred alternative when risks of malignancy, patient age, premature deaths, excessive radiation exposure, and compliance with a strict screening regimen are taken into account. The decision models developed in this investigation incorporate these factors; utilize risk estimates obtained from several longitudinal databases' and incorporate three methods for assigning utility values to the outcomes of each course of action. Results of decision analyses suggest that preventive bilateral mastectomy may be the treatment of choice in women younger than 50 years, and that screening may be preferable for women aged 75 and older. The most equivocal findings are for middle aged women in their fifties: It is this group for whom quality of life issues play the most significant role in determining optional course of medical action, because it is at this point in life that life expectancies do not clearly outweigh subjective values.