

Use of CA15-3, CEA and prolactin for the primary diagnosis of breast cancer and correlation with the prognostic factors at the time of initial diagnosis

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The main goals of the clinical use of tumor markers are to evaluate the adequacy of the treatment, monitor recurrence and follow up response to the treatment applied. For this purpose a baseline level for the commonly used tumor marker must be known at the time of initial diagnosis, before any therapy, in order to compare with the tumor marker levels which will be obtained after the treatment and during the clinical follow-up. The aim of this study was to investigate the correlation, if there is any, of the baseline levels of CA15-3, CEA and prolactin (PRL) in patients with breast cancer with the most commonly used prognostic factors, i) the presence of distant metastasis, ii) the presence of axillary lymphatic invasion, iii) the number of invaded axillary lymph nodes, iv) tumor size and v) stage of the disease, for breast cancer. Baseline serum CA15-3, CEA and PRL levels of 172 patients with breast masses were determined prior to biopsy. The sensitivity and specificity of baseline CA15-3, CEA and PRL were; 23.2% and 95.3% ,17.4% and 83.7% , 5.8% and 97.6% , respectively. At least one of the three tumor markers was high in 36% (31/86) of the breast cancer patients. Baseline CA15-3 levels were frequently higher than CEA in patients with bone metastasis (60% vs. 20%) and axillary lymphatic invasion (31.8% vs. 25%), and showed a better correlation with the stage of disease. Baseline tumor marker levels showed no statistically significant correlation with either the number of invaded axillary lymph nodes or tumor size. In conclusion, sensitivities and negative predictive values for baseline CA15-3, CEA and PRL were not satisfactory for primary diagnosis of breast cancer. Correlation of baseline CA15-3 was found superior to CEA and PRL in terms of stage of disease, presence of axillary invasion and distant metastasis.

Key words: breast cancer, tumor markers, primary diagnosis, prognostic factor