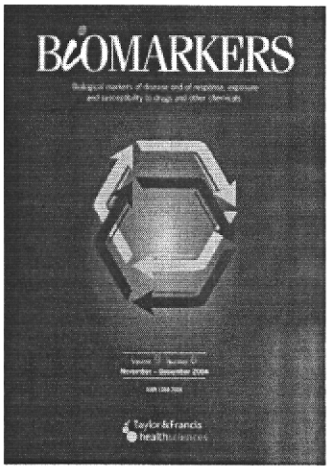
6.



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# Clinical evaluation of the simultaneous determination of CA 15-3, CA 125 and sHER2 in breast cancer

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**Abstract**

*Objective* We investigated serum levels of CA 15-3, sHER2 and CA 125, and their usefulness in the detection of metastatic disease in breast cancer patients.

*Methods* The levels of CA 15-3, sHER2 and CA 125 tumour markers were determined in 60 patients, 40 with localized and 20 with metastatic breast carcinoma. The control group consisted of 10 healthy women.

*Results* We found that, at the time of diagnosis, serum levels of all three tumour markers were elevated in patients with distant metastases, but of minute importance in the detection of any breast cancer. When the data for the individual markers were combined the overall sensitivity of metastases detection with all three markers improved. In this regard, 90% of patients with distant metastases had an increase in serum level of at least one of tested tumour markers. Similar results were obtained using receiver operating characteristic curve (ROC). Moreover, using ROC we defined cut-off values for metastasis detection for each of the tested markers.

*Conclusion* Our findings indicate that measurement of CA 15-3 serum values in conjunction with sHER2 and CA 15-3 can increase sensitivity in metastasis detection.

**Keywords:** *Breast cancer, CA 15-3, sHER2, CA 125, serum levels*

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## Introduction

One of the major aims in cancer research has been to develop biochemical tests for aiding screening and early diagnosis, assessing prognosis, predicting response to therapy and monitoring patients. All of these tasks, as well as treatment decisions for individual breast cancer patients were frequently (virtually obligatorily) based on traditional pathological parameters or other tissue-based assays. However, all of these methods require tumour tissue and thus invasive procedures. Consequently, the possibility of using the circulating markers as a way to predict patients' outcomes is more desirable.

To date, no tumour marker has demonstrated significant benefits in randomized controlled trials of screening and early diagnosis in the general population.

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