

[Anticancer Res.](#) 2011 Jan;31(1):97-103.

Prognostic value of mitotic counts in breast cancer of Saudi Arabian patients.

[Buhmeida A](#), [Al-Maghrabi J](#), [Merdad A](#), [Al-Thubaity F](#), [Chaudhary A](#), [Gari M](#), [Abuzenadah A](#), [Collan Y](#), [Syriänen K](#),
[Al-Qahtani M](#).

Source

Center of Excellence in Genomic Medicine Research (CEGMR), King Abdul-Aziz University, Jeddah 21589, Saudi Arabia. abuhmeida@kau.edu.sa.

Abstract

BACKGROUND:

Quantitative methods in combination with other objective prognostic criteria can improve the evaluation of a cancer patient's prognosis, and possibly predict response to therapy. One of the important prognostic and predictive markers is the mitotic count, which has proven valuable in many aspects. In this study, the prognostic value of the mitotic count was assessed in breast cancer (BC) patients in Saudi Arabia.

PATIENTS AND METHODS:

The study comprised a series of 87 patients diagnosed and treated for breast cancer at the Departments of Surgery and Oncology, King Abdul-Aziz University Hospital, between 2000 and 2008. Mitotic counts were carried out using a standard laboratory microscope (objective, $\times 40$; field diameter, 420 μm). The number of mitotic figures in 10 consecutive high-power fields (hpf) from the most cellular area of the sample gave the mitotic activity index (MAI, mitotic figures/10 hpf). The standardized mitotic index (SMI) recorded the mitotic count as the number of mitotic figures by area of the neoplastic tissue in the microscopic field, thus the number of mitoses in 10 consecutive fields was corrected for the volume fraction and field size (mitotic figures/ mm^2).

RESULTS:

The means of MAI and SMI of the tumors in the entire series of 87 patients were 15 mitotic figures/10 hpf (range 4-45) and 4 mitotic figures/mm² (range 1-9), respectively. The mitotic counts were higher in advanced stages than in early cancer ($p < 0.04$). The mitotic counts were significantly larger in patients with high-grade tumor ($p < 0.004$) and in cases with tumor metastasis ($p < 0.004$). The mitotic counts were also significantly larger in the recurrent cases than in non-recurrent ones ($p < 0.02$).

CONCLUSION:

The quantitatively measurable mitotic counts of cancer cell nuclei are of significant prognostic value in invasive ductal carcinoma of the breast in Saudi Arabia and the mean cut-off values of MAI and SMI can be applied as objective (quantitative) criteria to distinguish breast cancer patients into groups with favorable and less favorable prognosis