Prognostic value of chromosome 1 and 8 copy number in invasive ductal breast carcinoma among Iranian women: an interphase FISH analysis.

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Breast cancer is amongst the leading causes of death in women worldwide and the most common cancer amongst Iranian women. Unfortunately, the current clinical and histological criteria can only help 60 percent of women with breast cancer in diagnosis and long-term treatment. Therefore, genetic markers both at single gene and chromosomal level can play an important role in improving the diagnosis and prognosis of breast cancer patients. The aim of this retrospective study was to investigate the role of chromosome 1 and 8 copy number assessed by interphase fluorescence in situ hybridization (FISH), as prognostic parameters in 50 Iranian women, aged 35 to 64 years, with sporadic invasive ductal breast carcinoma. Chromosome 1 and 8 copy numbers were evaluated in relation to established clinicopathological parameters, the immunohistochemical markers ER, PR, P53 and cathepsin D, DNA index by flow cytometry, age and survival status of the patients. FISH using centromeric probes for chromosomes 1 and 8 was applied to interphase cell suspensions prepared from archived, Carnoyfixed tumor cells and selected paraffin-embedded tumor sections. Aneusomy for chromosomes 1 and 8 was present in all 50 patients to different levels. The total abnormality rate for chromosome 1 was 33.92 percent (4.24 percent monosomy and 29.68 percent polysomy), whereas for chromosome 8 this rate was 28.30 percent (6.48 percent monosomy and 21.82 percent polysomy). Statistically significant association (p