

Metastatic Behavior of Breast Cancer Subtypes

Majid Akrami ^{1,*}, S Tahmasebi ¹, V Zangouri ¹, S Hosseini ¹, Ar Talei ¹

¹ Breast Diseases Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

* Corresponding Author: Majid Akrami, Assistant Professor of Surgery, Department of Surgery, Faghihi Hospital, Zand Blvd., Shiraz, Iran. Tel: +98-9173116280, E-mail: akramimd@yahoo.com

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Abstract

Introduction: Invasive ductal carcinoma (IDC) is the most common form of breast cancer, including 80 percent of all breast cancer diagnoses. The objective of our retrospective cohort study was to investigate patterns of subtype-specific metastatic spread in these patients.

Materials and Methods: Patients with IDC referred to Breast Diseases Research Center affiliated with Shiraz University of Medical Sciences, and diagnosed between the years 1993 and 2017 were included. Statistical analysis was performed via SPSS Statistics for Windows, Version 21.

Results: Mean follow-up time among 4674 eligible patients was 46 months (range 0-277 months). The longest Distant Metastasis Free Survival (DMFS) time was observed in the Luminal B subtype (mean 194 months) whereas the shortest was observed in the Triple Negative Breast Cancer (TNBC) subtype (mean 129 months, P=0.006). The lowest DMFS rate pertained to TNBC tumors (73.8%). Luminal A-associated metastases were found to be solitary in 83.1% of cases, whereas HER2+ tumors showed multi-organ relapses in 30.5% of cases. Luminal A and B tumors expressed a preference for bone metastasis (55.3% vs. 36.5) while HER2+ and triple negative breast cancer (TNBC) cases showed liver (40.7%) and lung (36.4%) metastasis, respectively, as the most common site of metastasis.

Conclusions: These findings further represent that breast tumor subtypes differ not only in tumor characteristics but also in their metastatic behavior. TNBC tumors featured the most aggressive clinical course. Further identification of subtype-specific factors influencing prognosis might have an impact on appropriate strategy for follow-up of newly diagnosed IDC breast cancer patients.