**Impact of subtypes of breast cancer on Distant Disease Free Survival in young patients**

**Corresponding Author name: Macheroum Fatma Zohra**

**Affiliation:** Kouba Hospital Algiers

**Ph. No:213670013771**

**Email ID’s: ninimach777@gmail.com**

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**Abstract**

**Background**

Young women with Breast cancer (BC) are exposed to cancer-related death , but stages I to III are highly curable regardless of age. It is known that HER2-positive disease has a poor prognosis but few studies have shown the impact of anti-HER2 treatments. Defining the time before recurrence can determine follow-up and follow-up time, which are crucial for a population with potentially long survival.

**Methods**

Our study was a retrospective analysis of young breast cancer patients YBCP (≤45 years) diagnosed with early infiltrating breast cancer between 2020-2023 and a follow up of 20 months. We have determined distant disease-free survival (DDFS) and time to distant relapse adjusted by subtypes and stage in patients with stages I to III. The Kaplan-Meier method was made to analyze DDFS and the interaction between prognostic variables.

**Results**

This study recruted 130 patients, HR+/HER2- : 53% (69) ; triple negative (TN) :15.38% (n=20) ; HR+/HER2+ :15.38% (n=20) ; HR-/HER2+ :16.1% (n=21). The median of follow-up was 76.4 months and the relapses was observed in 18.46 %. The association between histological subtype and DDFS was significant (P=0.0032). The median DDFS or death was : 32.3, 72.3, 56.6 and 52.6 months for TN, HR+/HER2-, HR+/HER2+ and HR-/HER2+ respectively. We found a significantly shorter time to recurrence or death for TN breast cancer (P=0.0021). We found No differences between HR-positive disease and HR-negative/HER2-positive in time to distant relapse.

**Conclusions**

YBCP are prone to a poor prognosis and risk of recurrence , so, follow up is needed .We observed an association between tumor subtype and the time of distant recurrence ; a shorter systemic recurrence time for TN patients, and a prolonged DDFS for patients with HR+ or HER2. These results lead us to offer personalized monitoring of young patients with BC.