

Molecular Subtypes in Tunisian Breast Cancer

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Purpose: The aim of this study was to report the particularities of breast cancer molecular subtypes and their correlations with the clinicopathological characteristics in a large cohort of South Tunisia.

Patients and Methods:

-We retrospectively analyzed **617** breast cancer cases diagnosed at Habib Bourguiba Hospital of Sfax, Tunisia between **2016 and 2019**.

-Molecular subtypes were determined based on 4 parameters:

- ✓ Estrogen and progesterone receptors expression.
- ✓ Human epidermal growth factor receptor 2 overexpression.
- ✓ Proliferation index (Ki 67)

-Five subgroups were reported:

- ***Luminal A**,
- ***Luminal B HER2 (+)**,
- ***Luminal B HER2 (-)**,
- ***Triple negative**
- ***HER (+)**

-Chi-squared test was performed to evaluate the correlation between pathology and molecular subtype classifications.

Results:

- ✓ The mean age at diagnosis was **51.6 years** ; **6.8%** of cases reported in women aged less than 35 years old.
- ✓ **Invasive ductal cancer** was the predominant histology type **87, 4%**
- ✓ Hormone receptor were positive in **80.8%** and **35.3%** of cases were HER positive.
- ✓ **Luminal B HER2 negative** was the most frequent molecular subtype (30%) (figure 1).

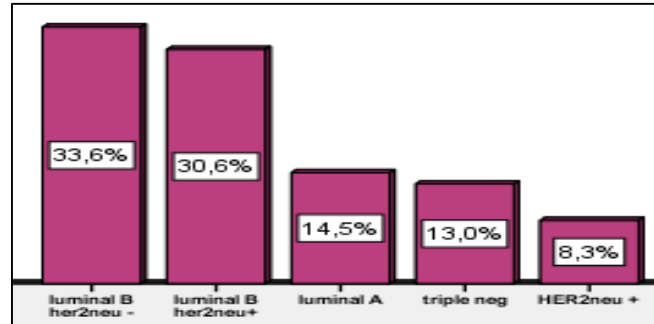


Figure 1: Molecular Subtypes in our Cohort

- ✓ **Clinicopathological characteristics** of each molecular subtypes are summarized in table1:

	Luminal A	Luminal B Her2neu+	Luminal B Her2neu-	Triple negative	Her2neu+
SBR I	20,8%	3,8%	5,5%	1,5%	2,4%
SBR II	61%	52,2%	62,6%	18,2%	31%
SBR III	18,2%	44%	31,9%	80,3%	66,7%
T1	38%	22,8%	25,7%	16,9%	40%
T2	53,2%	53,9%	54,1%	62%	33,3%
T3	6,3%	9%	7,7%	8,5%	11,1%
T4	0%	7,2%	7,7%	7%	4,4%
NO	50,6%	60,2%	56,1%	50%	56,8%
N+	49,4%	39,8%	43,9%	50%	43,2%

Table 1: Clinicopathological characteristics of each molecular subgroup

- ✓ 78% of **T4** stage was in luminal B subgroups (p=0.03).
- ✓ Luminal A group had lower Histological grade (20.8 %, p < 0.001) and more negative lymph nodes status (49.4%, p=0.01).
- ✓ Triple negative group was significantly associated with high histological grade (80%, p <0.001) and tended to significance for HER2 positive (66%, p=0.07).

Conclusion:

-Our data demonstrated that the **luminal B subtype was the most frequent subtype in South Tunisian population**;

However, the proportion of luminal A subtype was less than reported in other studies.

Moreover, HER2 positive breast cancer subtype occurred at a high incidence.

-According to this molecular profile, we suggest that breast cancer in our region seems to be aggressive tumor that needs more systematic treatment intensification