

ASSOCIATION OF MOLECULAR SUBTYPES OF BREAST CANCER WITH AGE AT DIAGNOSIS: A Retrospective Analysis

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INTRODUCTION

Breast cancer is a heterogeneous disease with distinct molecular subtypes. Subtypes, LUMINAL A, LUMINAL B, HER2 enriched and TNBC dictate cancer prognosis as well, e.g TNBC presents with unfavourable prognosis [1,2]. Cancer presentation also depends upon the age at diagnosis, it being aggressive at early age[3] The presentation of age and subtype differs among ethnicities [4]

In our population breast cancer is seen presenting early in age (in contrast to the west with mean ages of 63 and 60 Years in Japan and U.S respectively. [3][5]

OBJECTIVE

1. To evaluate the distribution of molecular subtypes of invasive breast carcinoma
2. To analyze their association with clinicopathological factors, specially Age with Molecular Subtype

RATIONALE

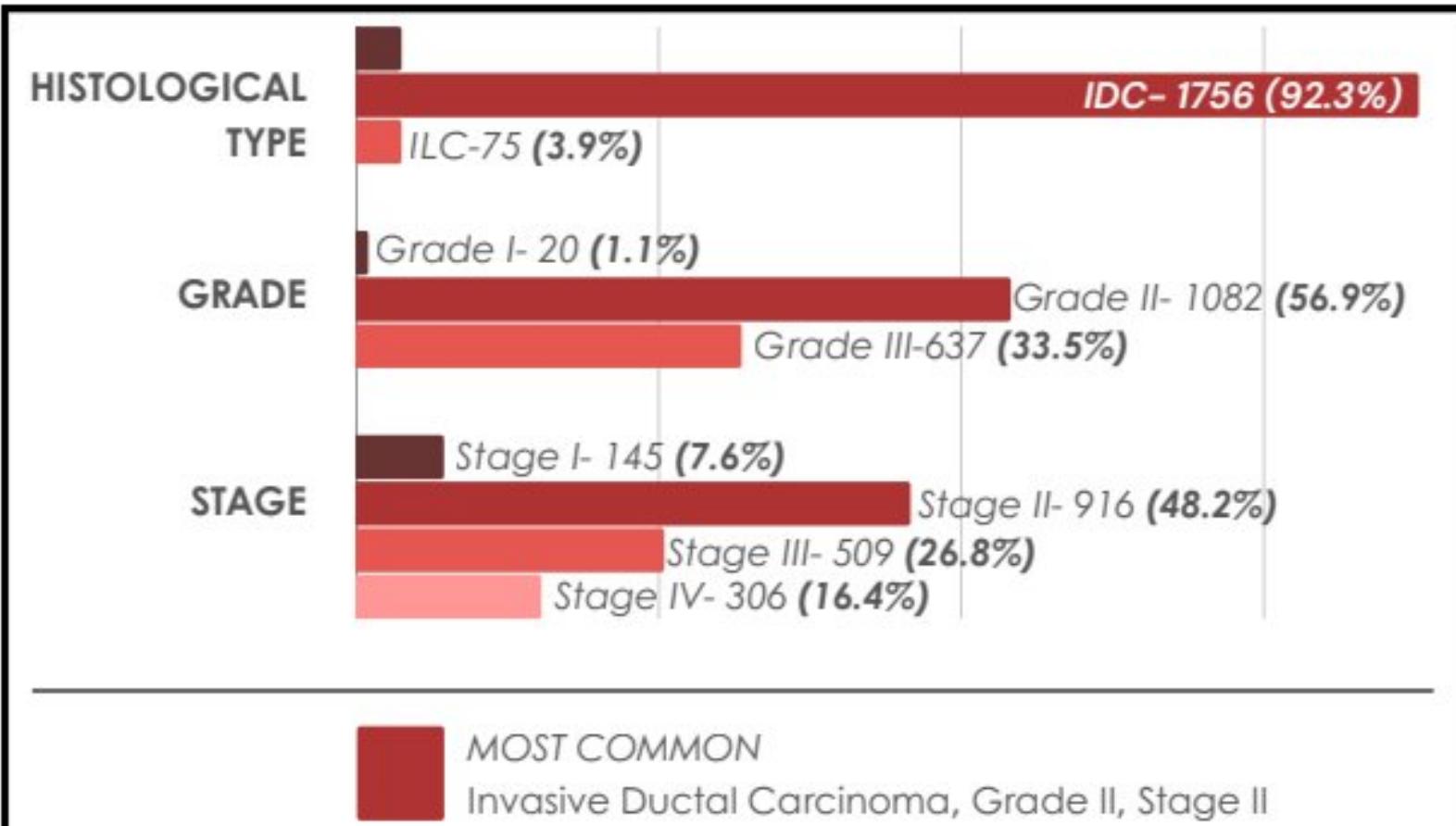
Data from South Asian population is limited and a generalization of western data is unjust given cancer varies ethnicity to ethnicity. This provides a rationale for looking into an association between age and molecular subtypes of breast cancer in our population.

METHODOLOGY

- Design: Retrospective study (Dec 2019 – 2024)
- Setting: Khyber Teaching Hospital, Peshawar
- Sample: 1902 cases of invasive breast carcinoma
- Inclusion: Primary diagnosis of IDC and ILC
- Variables studied: Age, Menopausal status, Histopathological type, Grade, Stage (AJCC 8th Edition), Receptor status (in extension Molecular Subtype)
- Analysis: Quantitative data was presented as means & SD and qualitative using frequencies. Chi Squared test was applied for evaluating associations (p value <0.05)

RESULTS

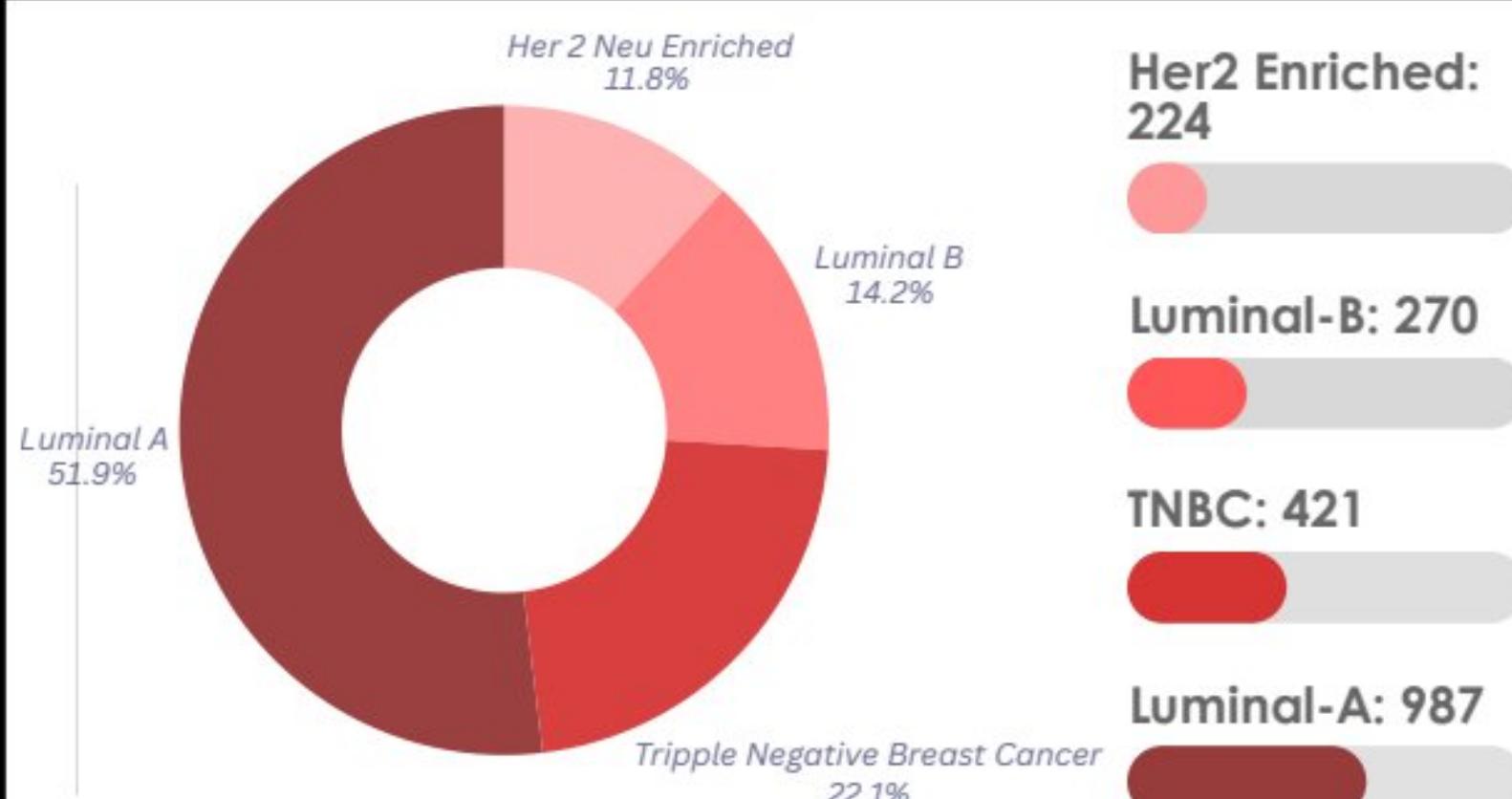
- Mean age: 48 ± 13 years (range 16–93)
- Age peaks: 36–45 (26%) & 46–55 (24.9%)



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MOLECULAR SUBTYPE



Key Associations:

- Luminal-A: Older age (>55), Grade II, Stage I-II
- Luminal-B: Age 36–55, Grade II, Stage II/IV
- HER2-enriched: Age <25, Grade III, STAGE III
- TNBC: Younger age 36–55, Grade III, Stage III

CONCLUSION

Breast Cancer in Pakistan is diagnosed at a relatively lower age than western populations.

Luminal-A: most common, linked with older age and lower grade/stage. While Non-luminal subtypes (HER2, TNBC) are associated with younger age & advanced disease

Women in our country are being diagnosed with breast CA at their prime age and measures should be taken to promote early detection to change outcomes for them.