

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

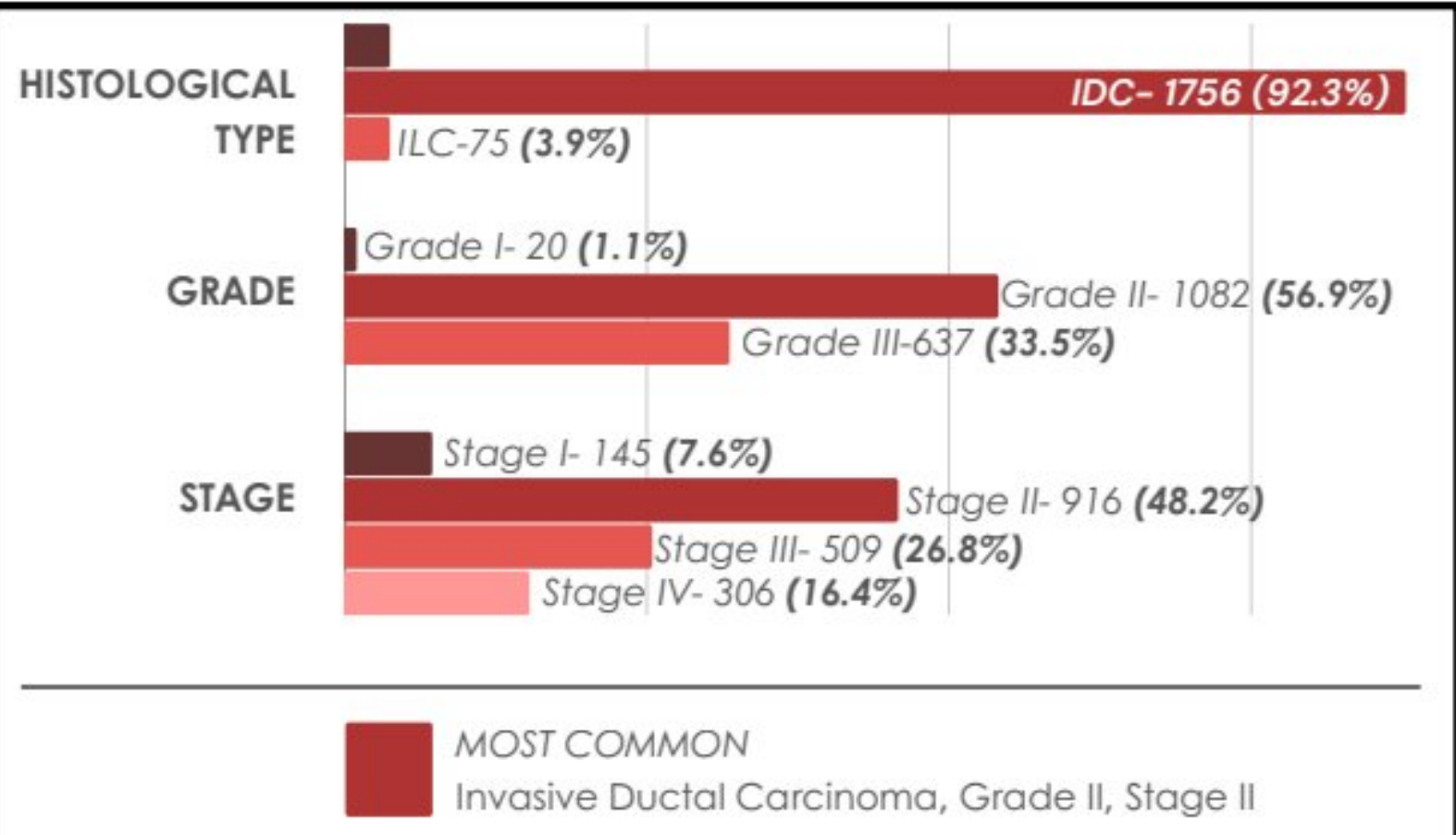
Data from South Asian population is limited and a generalization of western data is unjust given cancer varies ethnicity to ethnicity. This provides a rationale for looking into an association between age and molecular subtypes of breast cancer in our population.

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%)

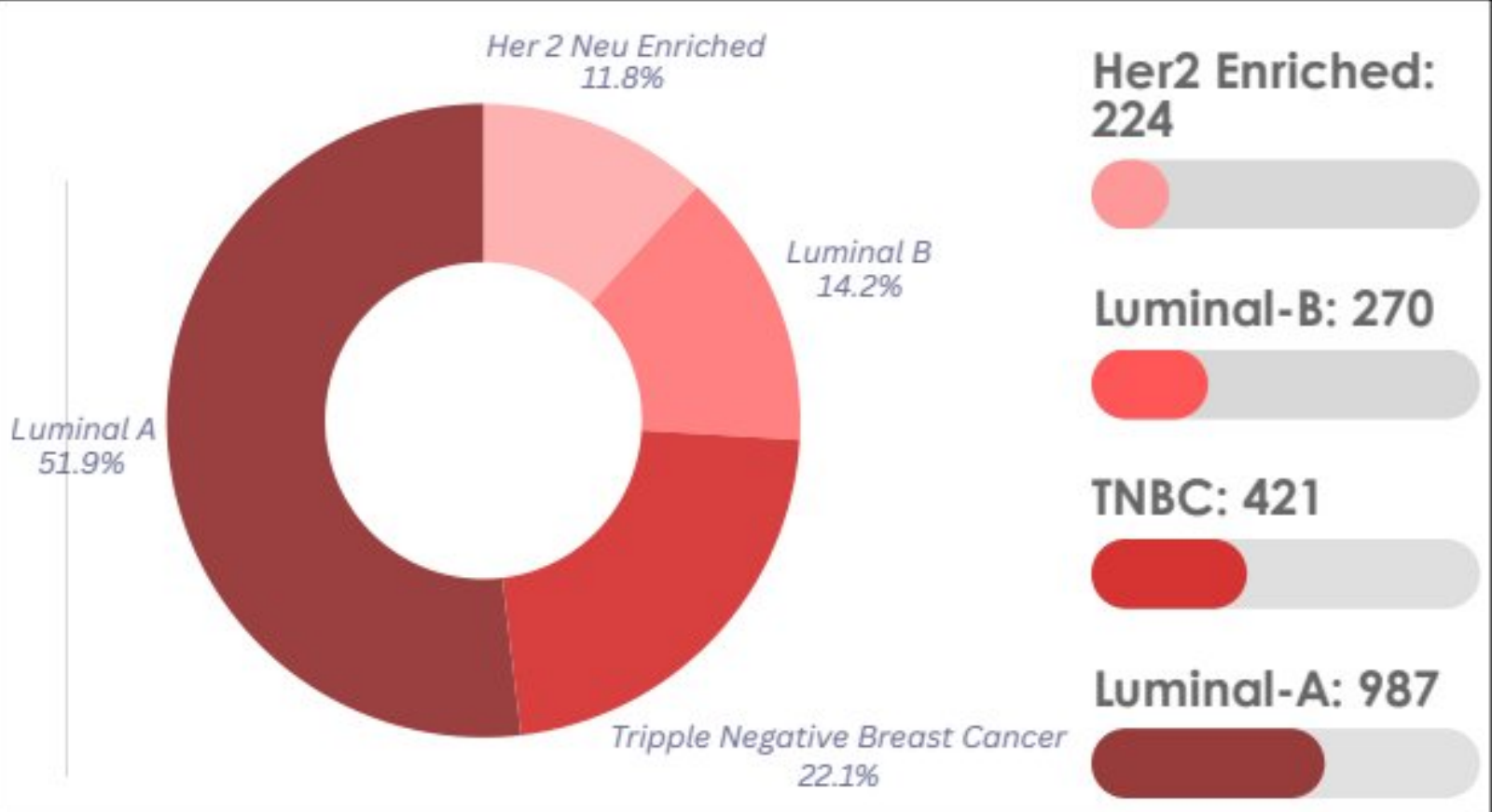


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MOLECULAR SUBTYPE

FREQUENCIES



- Key Associations:
- Luminal-A: Older age (>55), Grade II, Stage I-IIA
 - Luminal-B: Age 36–55, Grade II, Stage IIB/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.