Comparing histopathological and molecular subtypes of breast tumors between elderly and younger patients: A population-based study

Afrah Aladwani

University of Strathclyde, UK

Introduction: Breast cancer is a heterogeneous disease that exhibits different biological characteristics and hence different responses to therapeutic agents. Understanding histological and molecular characteristics has led to introducing more classifications and subtypes of breast tumours in the treatment guidelines and changing aspects of treating patients from applying standardized treatment protocols to tailoring individualized treatment protocols. Questions were raised regarding the impact of advanced age on biological changes of tumour cells. The current study compares the intrinsic subtypes of breast tumours between younger and older patients in the Kuwait Cancer Control Centre (KCCC).

Methods: In a comparative population-based cross-sectional study, a total of 180 patients with breast cancer were randomly selected and subdivided into two age categories (<60 years or ≥60 years). Principle characteristics were: newly diagnosed female patients aged 21 years and above and referred to the medical oncology department in the Kuwait Cancer Control Centre (KCCC) to receive systemic treatment between April 2016 and April 2018. Individual baseline tumour characteristics, including histopathology, TNM staging, Ki67% proliferative index status, hormonal (HR) and Human Epidermal Growth Factor (HER-2) receptor status, were assessed and compared between the two age cohorts using the Chi-Square Test.

Results: On diagnosis, non-metastatic breast cancer occurred in 93.3% and 85% of older and younger patients, respectively (p-value 0.11). Invasive Ductal Carcinoma (IDC) was the most predominant histopathological subtype in both age cohorts (93.3% and 96.7% in older and younger patients, respectively). Based on the TNM staging system, a statistically significant higher rate of stage II breast cancer was detected in older patients compared to younger patients (46.5% and 28.3% respectively; p value=0.046). The Ki67% status did not differ by age cohort, whether considering ≥14% or ≥30% over-expression. Intrinsic molecular subtypes did not differ by age with HR and HER-2 positive tumours being the most common (p-value= 0.77).

Conclusion: Breast cancer patients aged 60 years and above exhibited histopathological and molecular characteristics similar to younger patients in Kuwait. Also, the status of disease metastasis and proliferation did not differ by age. The only significant difference detected was the disease stage at diagnosis with more advanced non-metastatic tumours detected in younger patients.

Biography

Afrah Aladwani is from University of Strathclyde, UK.