Extended Abstract International Journal of Inflammation, Cancer and Integrative Therapy

2020

Vol.7 No.1

# Disparity in Metabolic Conditions among Hispanic/Latina Women with Breast Cancer

**Dr. Nahleh Z**

Department of Hematology/Oncology, Maroone Cancer Center, Cleveland Clinic Florida, USA

**Abstract**

Breast cancer is the most common cancer in Hispanic / Latin women. Common metabolic conditions prevalent in American Hispanics include diabetes mellitus, dyslipidemia, hypertension and obesity and have been associated with poor overall survival. The association of these coexisting conditions with the risk of breast cancer, the treatment and the characteristics of breast cancer in this population is largely under-studied. In this study, we sought to explore the prevalence of one or a combination of these comorbid conditions with breast cancer and the possible association with the characteristics and subtypes of breast cancer in a patient population. predominantly Hispanic.

**Methods:**

After IRB approval, we conducted a retrospective cross-sectional study of consecutive breast cancer patients treated in a University based tertiary medical center in the large border city of El Paso, TX. We evaluated the prevalence of 4 common metabolic conditions in a Hispanic patient population using the breast cancer center database of patients treated between 2005 and 2014. Adjusted association analyses were carried out using multiple Poisson regression analyses and results were presented with prevalence ratio (PR) and p-value.

**Results:**

1,003 patients with breast cancer were included in the analysis. The majority of patients had at least one comorbid condition (72%) with a high prevalence obesity 49.8% (95% CI: 24.58%, 30.1%), followed by hypertension, diabetes mellitus and dyslipidemia. After adjusting for variable of interests, the presence of all four comorbidities combined was associated with Estrogen Receptor positive (ER+)/Progesterone Receptor positive (PgR+) breast cancer subtype and Human Epidermal Receptor 2 neu negative ER+/PgR+/HER2 - status Presence of at least one of the comorbidities appeared to show a positive association with HER2 – subtype (PR=1.16, p=0.10) and ER+/PgR+/disease (PR=1.08, p=0.09).

**Conclusion:**

Our study suggests an increased prevalence of diabetes, hyperlipidemia, hypertension and obesity in Hispanic woman with breast cancer, particularly in the hormone receptor positive group. These findings have potential implications, not only on raising awareness to screen for these conditions but possibly on future cancer preventive strategies in this underserved population. Further research is needed to confirm the increased risk of breast cancer in patients with metabolic co-morbidities and to elucidate potential underlying etiologies.

**Keywords**

Breast cancer; Hypertension; Hyperlipidemia; Diabetes mellitus

**Introduction**

Breast cancer is the most common invasive cancer in women worldwide and the second leading cause of death from cancer in women in the United States. It has been shown that people with breast cancer who also have common metabolic conditions or diseases such as diabetes mellitus (DM), dyslipidemia, hypertension and obesity have lower overall survival. In women with early breast cancer, cardio-metabolic risk factors have been associated with cardiovascular mortality and other causes, but not with mortality from breast cancer. It is not yet known whether the complex etiology of these co-morbidities can lead to an increased risk of breast cancer and whether it affects the severity of the presentation of the disease. The presence of these comorbidities, however, increases the complexity of the decision-making process due to their significant impact on treatment and results. In the era of personalized medicine, it would be important to understand how common these conditions are and whether they are associated with different characteristics of breast cancer.

**Methods**

After obtaining Institutional Review Board (IRB) approval, we conducted a retrospective cross-sectional study utilizing the electronic medical database at a tertiary university based medical center. We identified all Hispanic women diagnosed with primary breast cancer consecutively between 2005 to 2014. We completed any missing diagnostic and comorbidities information of the target population using individual records from the cancer research core facility database housed at Texas Tech University Health Sciences Center in El Paso, TX. Age, Body mass index (BMI), ethnicity, breast cancer diagnosis, subtype, type of surgery and treatment, comorbidities including diabetes mellitus (DM), dyslipidemia, hypertension(HTN), obesity defined using Body Mass Index ≥ 30 kg/m2, and coronary artery disease (CAD), as well as patient demographics and disease characteristics including menopausal status (by age older than 50 years ), stage, estrogen receptor (ER), progesterone receptor (PgR) and Human epidermal receptor 2 neu (HER2) status were extracted from the database.

**Results**

A total of 1,003 breast cancer patients were included in the analysis. Average age was 56 years (SD: 12) and average body mass index (BMI) was 30.7 Kg/m2 (SD: 6.3) (Table 1). displays the patients' characteristics for the entire cohort and the presence of the metabolic cardiovascular risk factors of interest. Of total, 85% of the cohort were self-identified Hispanics. Pathological type and characteristics of breast cancer were distributed as follows: 86.7% invasive ductal carcinoma, 68% ER+ tumors, 57% PgR+, and 18.6% HER2+ tumors. One-third of the patients were pre-menopausal.

**Conclusion**

The strengths of our study include the focus on Hispanic/Latina women with breast cancer and is to our knowledge, the first study to determine the correlation of the combined metabolic comorbidities with breast cancer in this unique population. Also, the study adds to the body of evidence linking the metabolic conditions evaluated with ER + breast cancer (p=0.048).

**References**

1 Stanley K, Stjernsward J, Koroltchouk V (1987) Women and cancer. World Health Stat Q 40: 267-278.

2 Hershman DL (2018) Association of cardiovascular risk factors with cardiac events and survival outcomes among patients with breast cancer enrolled in SWOG clinical trials. J Clin Oncol 22: 201777-204414.

nahlehz@ccf.org

This work is partly presented at Joint Event on 2nd Global Summit on Oncology & Cancer March 12-14, 2018 Singapore