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# DOES THE BODY MASS INDEX (BMI) IMPACT THE OVERALL SURVIVAL (OS) OF BRAZILIAN WOMEN WITH BREAST CANCER (BC) WHO HAVE ACHIEVED PATHOLOGICAL COMPLETE RESPONSE (PCR) AFTER NEOADJUVANT CHEMOTHERAPY (NCT)?

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**Objective:** This study aimed to evaluate the impact of obesity on the survival of patients with breast cancer (BC) treated with neoadjuvant chemotherapy (NCT) in two public hospitals in Brazil. **Methods:** This is a retrospective, multicenter study that evaluates women with BC at Pérola Byington (HPB) and State Public Servant (HSPE) hospitals between January 2011 and May 2020. Stages I–III, age  $\geq 18$  years, and who underwent NCT were included. Patients were categorized by the World Health Organization definition as follows: body mass index (BMI)  $< 18.5$  kg/m<sup>2</sup>: malnutrition; 18.5 to  $< 25$  kg/m<sup>2</sup>: normal; 25 to  $< 30$  kg/m<sup>2</sup>: overweight;  $\geq 30$  kg/m<sup>2</sup>: obesity. Pathological complete response (pCR) was defined as the absence of invasive breast and axillary tumors. T-test or chi-square test was used to individually analyze the association of each variable between groups with and without pCR. Univariate and multivariate analyses were performed to calculate odds ratios, 95% confidence intervals of the independent variables BMI, age, and clinical stage, correlated with pCR with p-value  $< 0.05$  as statistically significant. **Results:** We enrolled 1779 patients, mean age of 50 years, and mean BMI of 28.08 kg/m<sup>2</sup>. Most of them were in stage III (68%) with ductal histological type (95.11%). After NCT, 1435 patients had residual disease and 344 patients had pCR. The BMI ratio was 1.57% malnutrition, 30.58% normal, 35.13% overweight, and 32.72% obese. When the pCR was associated with BMI, there was no significance on overall survival (OS) when evaluating separate centers (HPB:  $p=0.46$ , HSPE:  $p=0.49$ ) or together ( $p=0.83$ ). Disease-free survival was only possible in HPB without significance ( $p=0.83$ ) for BMI. **Conclusion:** This Brazilian study showed no interference of BMI on OS in patients submitted to NCT with pCR. There were few patients achieving pCR (19.34%) probably because of the initial stage. Despite not having an impact on survival, most of our women were overweight or obese (72.85%), showing how obesity is common in Brazilian women and should be understood as a public health problem.

**Keywords:** Breast cancer. Neoadjuvant chemotherapy. Overweight. BMI.