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ANALYSIS OF CLINICAL OUTCOMES BASED ON MOLECULAR SUBTYPES IN PATIENTS WITH BREAST CANCER THAT RECEIVED NEOADJUVANT CHEMOTHERAPY

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Objectives: To evaluate the survival outcomes based on molecular subtypes of patients with breast cancer that received neoadjuvant chemotherapy (NAC). **Methodology:** We performed a retrospective analysis of all non-metastatic breast cancer patients treated between 2008 and 2014 at two institutions who had received NAC followed by surgery and post-operative radiation therapy. Patients were divided into four groups based on the tumor molecular subtype: luminal (estrogen receptor [ER] / progesterone receptor [PR] positive, human epithelial growth factor receptor-2 [HER2] negative), HER2 (HER2 positive), and triple negative (TNBC; HER2, ER and PR negative). Multivariate analyses for disease-free survival (DFS) and overall survival (OS) were also performed adjusting for unbalanced variables: pathologic complete response (pCR), histologic type and grade tumor. **Results:** A total of 653 women were included. Most (589; 91.1%) of the patients had locally advanced disease (clinical stage IIB to IIIC). Patients were distributed as following (N; %): luminal (300; 45.9%), HER2 (173; 26.5%), TNBC (180; 27.6%). The groups differ regarding pathologic complete response rate (pCR), histologic type and grade, where pCR were more frequent in HER2 (64; 37.0%) and TNBC (52; 28.9%) vs. Luminal (18;6%). The median follow-up time for surviving patients was 33 months. The disease-free survival (DFS) and overall survival (OS) rates for all patients at 3 years were 71 and 86%, respectively. The DFS and OS rates for all patients at 3 years were 71 and 86%, respectively. Patients with TNBC had worse DFS and OS rates at 3 years: (3year-DFS: 72, 76, and 64%; 3year-OS: 88, 88 and 78%, for Luminal, HER2 and TNBC, respectively). Comparing to TNBC, Luminal had better DFS (HR 0.67; 95%CI 0.46–0.97) and OS (HR 0.54; 95%CI 0.32–0.90), in multivariate analysis, while no statically difference was seen between HER2 vs. TNBC (DFS HR 0.73; 95%CI 0.49–1.10; OS HR 0.63; 95%CI 0.36–1.09). **Conclusion:** In locally advanced breast cancer patients who underwent NAC, survival rates were different based on the molecular subtype, with TNBC having the poorest prognosis.