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Pathologic complete response and efficacy with neoadjuvant anthracycline followed by paclitaxel, trastuzumab, and pertuzumab in patients with HER2-positive early breast cancer: A real-world experience of Brazil

Leandro Gonçalves Oliveira¹, Ana Claudia Gonçalves Lima¹, Frank Lane Braga Rodrigues¹, Alexandre Marchiori¹, Rosemar Macedo Sousa Rahal², Deidimar Cassia Batista Abreu¹, Lays Costa Marques¹, Felipe Marcio Araujo Oliveira¹

¹Instituto Goiano de Oncologia e Hematologia – Goiânia (GO), Brazil.

²Universidade Federal de Goiás – Goiânia (GO), Brazil.

Objective: Compared with other subtypes of breast cancer, a higher percentage of HER2-positive patients achieve a pathologic complete response (pCR) to neoadjuvant chemotherapy (NACT). Most randomized studies of neoadjuvant therapy in HER2-positive breast cancer have employed anthracycline and taxane-based NACT regimens. In the aggregate, these studies suggest a pCR rate approaching 50% among patients with operable HER2-positive disease receiving anthracycline, taxane, and trastuzumab-based therapy (AC-TH). In the phase II TRYPHAENA study, the pCR rate reported for the docetaxel, carboplatin, trastuzumab, and pertuzumab (TCHP) regimen was 64% compared with 55% among those treated with an anthracycline-based regimen (FEC-THP), a difference that was not statistically significant. Anthracycline-free regimens are currently preferred as NACT in international guidelines, but, in the Brazilian reality, anthracycline regimens such as AC-THP are still widely used. As a practical example, a portion of patients with locally advanced disease need to start NACT but depend on ISH (in-situ hybridization) result to HER-2 directed therapy. **Methodology:** A retrospective analysis was conducted on patients treated with AC-THP in the neoadjuvant setting in a Brazilian breast cancer center in Goiânia, Goiás. A medical record review was conducted on patients treated with AC-THP in the neoadjuvant setting and at least 1 year of follow-up after surgery. Data on patient demographics, stage of breast cancer, systemic therapy, pathology reports, and surgical data were collected. **Results:** Information from 44 patients was reviewed and evaluated for total pCR (tpCR, ypT0/is ypN0). The average age was 50.3 years (range 28–75 years, with 18% over 65 years old). HER2 positivity by IHC 3+ was achieved in 80% of patients, and 20% had IHC 2+ and ISH positive. In the 63.4%, the estrogen receptor (ER) positivity was > or = 10%, and 38.6% and 25% had clinical stages IIB and IIA, respectively. Overall, 35 (80%) received AC dose dense, 18 (41%) patients underwent lumpectomy, and 26 (59%) underwent mastectomy. The average number of nodes removed in SNB patients (86.3%) was 3 compared with 15.5 in ALND patients (13.7%). A tpCR occurred in 31/44 (70.5%) patients overall, in 14/16 (87.5%) patients with HR-negative or weak, and in 17/28 (60.7%) HR-positive disease. After an average of 44.2 months of follow-up, 95.45% of patients were still free of breast cancer recurrence (2 relapses) and the overall survival was 100%. **Conclusion:** In the report from Memorial Sloan Kettering Cancer Center in 2017, tpCR occurred in 41/57 (72%) patients. In the cohort A from Berenice trial, the pCR rate was 61.8%. Cross-trial comparisons should be interpreted with caution given the differences in patient populations, but based on this report, our real-world results were at least comparable with randomized trials and with results from developed countries.

Keywords: breast cancer; anthracycline.