Weekly Carboplatin and Paclitaxel with Trastuzumab and Pertuzumab (HER2+) or Bevacizumab (HER2-) in the Neoadjuvant Treatment of Breast Cancer: a Phase II Trial

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Background and Objective

• Anthracycline-based regimens demonstrate efficacy in the neoadjuvant setting, but their use is limited by long-term toxicities, and their benefit is confined to HER2+ tumors[2,3].

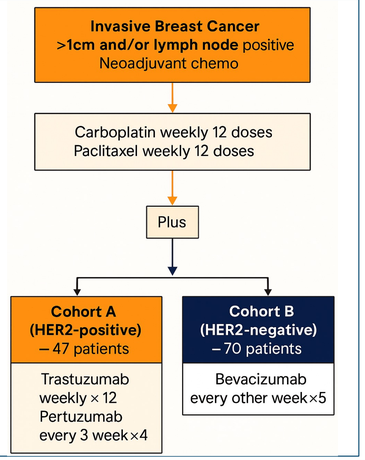
• Weekly taxane-based regimens offer improved tolerability[4]. HER2-targeted therapy with trastuzumab and pertuzumab demonstrated high pathologic complete response (pCR) rates[5], and antiangiogenic therapy with bevacizumab may help improve response rates in HER2- disease.[6]

•**Objective:** Evaluate the efficacy, safety, and tolerability of an anthracycline-free neoadjuvant regimen of weekly carboplatin and paclitaxel with trastuzumab/pertuzumab (HER2+) or bevacizumab (HER2-).

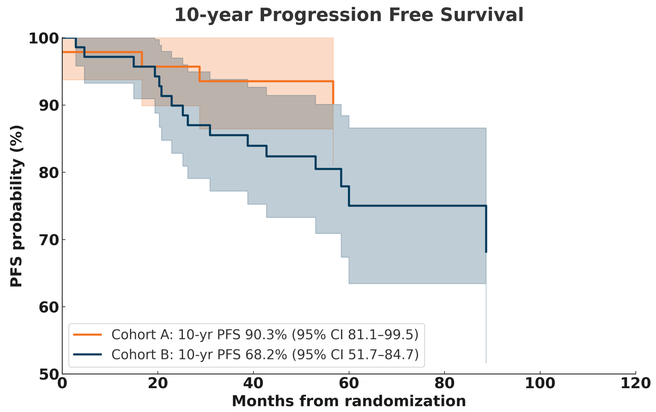
Methods

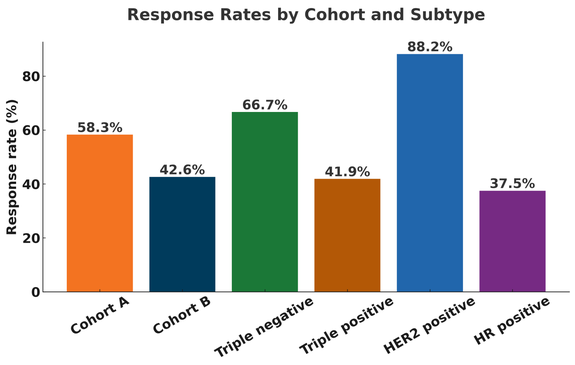
• Single-institution, open-label, phase II trial

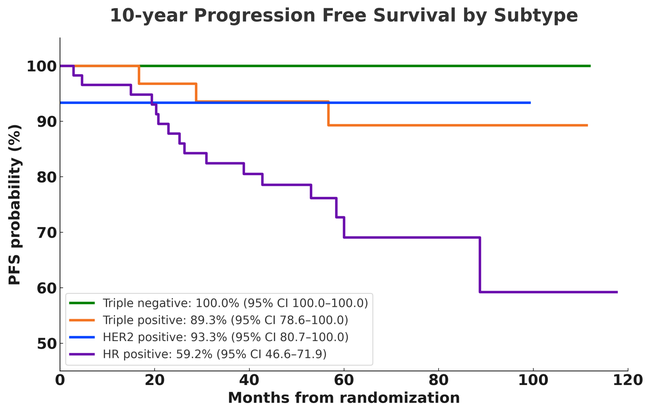
• **Primary endpoint:**
•2-year progression-free survival (PFS)

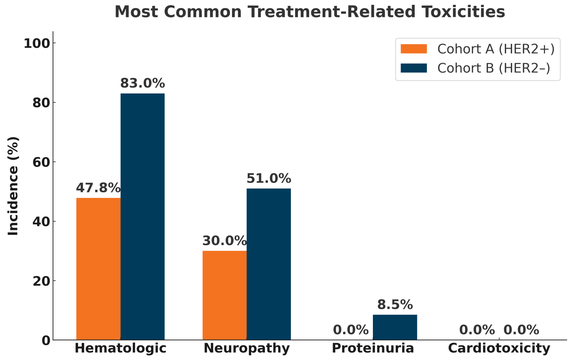


Results









Toxicity

• Grade ≥3 treatment-related adverse events (AE) occurred in 28% (Cohort A) and 40% (Cohort B) of patients.

• Neutropenia was the most common AE of any grade in both groups.

• Neuropathy was reported in 30% (Cohort A) and 51% (Cohort B) of patients, mostly grade 1–2.

• No cardiotoxicity occurred in Cohort A.

• Proteinuria was observed in 8.3% of Cohort B patients without treatment delays.

Conclusions

• Anthracycline-free neoadjuvant chemotherapy demonstrated high long-term PFS and favorable tolerability in HER2+ breast cancer, particularly among HR- subgroups.

• Given that pembrolizumab is now the standard of care in TNBC, excellent outcomes in our small series of patients with bevacizumab-paclitaxel-carboplatin suggests a potential combination strategy of chemotherapy, bevacizumab and immunotherapy in high-risk patients.

• 10-year follow-up highlighted favorable outcomes across most subtypes except HR+/HER2- patients. Integration of CDK4/6 inhibitors can help improve outcomes in this subset of patients.

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