

Platinum agents have been shown to increase pathological complete response rates when added to neoadjuvant chemotherapy for triple-negative breast cancer (TNBC). The PEARLY multicenter, randomized, phase 3 trial investigated the efficacy and safety of adding carboplatin to standard anthracycline-based/taxane chemotherapy for patients with early-stage TNBC in the neoadjuvant or adjuvant settings. Patients with stage II or III TNBC were enrolled. Patients received either standard therapy with doxorubicin and cyclophosphamide followed by a taxane (control arm), or carboplatin in addition to a taxane following doxorubicin and cyclophosphamide (carboplatin arm). The primary endpoint was event-free survival. Secondary endpoints included overall survival, invasive disease-free survival, distant recurrence-free survival, pathologic complete response rate, and safety.

Between Jan 2016 and Jun 2020, 868 patients across 22 institutions in the Republic of Korea were randomly assigned to either control arm or carboplatin arm. At a median follow-up of 57.2 months, carboplatin significantly improved event-free survival compared with the control arm (hazard ratio, 0.67; 95% confidence interval [CI]: 0.49-0.92; $P=0.012$). The 5-year event-free survival rates increased from 75.1% to 82.3% with absolute 7.2% difference. Secondary endpoints also favored the carboplatin arm. The overall survival data were immature. Grade 3 or higher treatment-related adverse event rates were 74.7% and 56.7% in the carboplatin and control arms, respectively.

The addition of carboplatin to doxorubicin and cyclophosphamide followed by taxane therapy significantly improved event-free survival in patients with early-stage TNBC, with a safety profile was consistent with those for each regimen (NCT02441933). Through this meeting, the other studies that have used carboplatin in early TNBC will be reviewed on top of PEARLY data.