Breast cancer

Metronomic oral combination chemotherapy with capecitabine and cyclophosphamide in patients with HER2-negative metastatic breast cancer

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Aim/Background: Capecitabine (X) and Cyclophosphamide (C) are active in MBC patients, have non-overlapping toxic effects and synergy pre-clinically. In this study, we retrospectively evaluated the efficacy and safety of a metronomic oral combination of XC therapy in patients with HER2-negative metastatic breast cancer at our institution.

Methods: A retrospective review was conducted of human epidermal growth factor receptor (HER) 2-negative patients with MBC who received XC therapy at Hiroshima City Hospital. Adverse events, time to progression (TTP), and overall survival (OS) were used to evaluate the clinical response to metronomic XC therapy. A dose of 1657 mg/m²/day capecitabine and 65 mg/m²/day cyclophosphamide was given orally twice daily for 14 days. The treatment was repeated at 3-week intervals until disease progression or treatment interruption due to adverse events.

Results: Between 2009 and 2015, we analyzed 71 patients with MBC (median age, 56), with a median previous chemotherapy regimen (range 3). The overall response rate (RR) was 40.3%. The median TTP was 273 days (95% confidence interval (CI), 224–363 days) and median OS was 1045 days (95% CI, 665–1749 days). Of note, median TTP and RR was 247 days and 33.3% in patients with anthracycline- and taxane-pretreated, whereas 328 days and 46.9% in patients without their regimens (p = 0.1571). Further, 40 patients with progression disease with XC therapy were administered next therapy. CR was achieved in 3 (Paclitaxel + Bevacizumab, Tamoxifen + LH-RH-a, TS-1), PR was in 5 (Eribulin, Capecitabine, TS-1) and response rate was 20%. Grade 3 or 4 leukopenia was observed in 12 cases (16.9%), neutropenia in 10 (14.1%), anemia in 3 (4.2%), and thrombocytopenia in 0 cases (0%). Non-hematological toxicities were mild. HFS was observed in 14 cases (19.7%), although no cases of grade 4 HFS occurred. Only two patients with grade 3 hemorrhagic cystitis interrupted therapy due to adverse events.

Conclusions: Oral XC therapy was very effective with less toxicity in HER2-negative MBC. This metronomic oral combination could be beneficial for the treatment of HER2 negative MBC in light of quality of life, and preference of MBC patients.

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