Aim: Anthracyclines and taxanes based regimens have been established as one of standard adjuvant chemotherapy for early breast cancer. For the high-risk patients, sequential rather than the concomitant use of both agents should be considered. Conventionally, Anthracyclines followed by taxanes (AT) are preferred. However, some recent trials reported that preceding taxanes had equivalent efficacy. Since each has different toxic profile, it is important to compare AT with TA in terms of toxicity and relative dose intensity (RDI). The purpose of this retrospective study was to assess the influence of administration order.

Methods: We analyzed 88 patients with early breast cancer who were treated with each 4 cycles of FEC (5-fluorouracil, epirubicin and cyclophosphamide) and Doc (docetaxel) as adjuvant chemotherapy. Consecutive 46 and 42 patients received FEC → Doc (AT group) From January to December of 2012 and Doc → FEC (TA group) for the same period of 2013, respectively. The data was collected from medical records, and toxicities were evaluated by CTCAE criteria. Statistical analysis was performed using Fisher’s exact test.

Results: There was no significant bias in patients’ characteristics between both groups. Although the hematological toxicities seen in FEC and Doc phase were equal in both group, schedule delay of FEC were found more frequent in TA (19.0%) than AT (8.6%) because of insufficient recovery of neutropenia (p < 0.05). As a result, RDI of FEC was reduced to 0.94 in TA, while that of AT was 0.98. Regarding non-hematological toxicities, grade 2 or more hand-foot syndrome (HFS) during Doc were observed more frequently in AT (54%) than TA (33%) (p < 0.05). However, grade 3 HFS which affected the treatment schedule was comparable (11% and 12%). Supporting these results, RDI of Doc was also comparable showing 0.97 in AT and 0.95 in TA. Interestingly, HFS significantly increased in the winter (November to February), regardless of administration order (p < 0.01).

Conclusions: The administration of Doc before FEC results in reduced HFS by Doc, but RDI of FEC tends to decrease because of altered hematological toxicity. Evaluation of the prospective study is desired.

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