

Optimal delivery of anthracycline-based chemotherapy in the adjuvant setting improves outcome of breast cancer patients.

Chirivella I, Bermejo B, Insa A, et al. *Breast Cancer Res Treat.* 2009;114(3):479-84.

Study overview: The aim of this retrospective database analysis was to determine the relationship between chemotherapy dose and treatment response in early stage breast cancer patients treated with adjuvant anthracycline-based non-taxane chemotherapy. The outcomes of 793 patients treated at a single centre between 1980 – 2000 were examined. A standard dose-modification procedure was in place in this hospital, where dose was delayed in response to haematological toxicity and delayed and/or reduced in response to continuing non-haematologic toxicity. None of these patients received granulocyte-colony stimulating factor support.

Key findings: Delivery of sub-optimal chemotherapy had a negative impact on treatment response. At 10 years follow-up, both Kaplan-Meier disease-free survival (DFS) and overall survival (OS) were significantly affected by the number of delayed cycles (> 2 cycles; DFS HR: 2.07, 95% CI: 1.61-2.67; OS HR: 1.70, 95% CI: 1.24-2.33), number of delayed days (\geq 15 days; DFS HR: 1.77, 95% CI: 1.38-2.28; OS HR: 1.49, 95% CI: 1.09-2.04) and relative dose intensity (< 85%; DFS HR: 1.65, 95% CI: 1.18-2.30; OS HR: 1.73, 95% CI: 1.17-2.55). Cox regression models, controlling for other known clinically relevant disease characteristics, showed that these three variables were significantly associated with poorer disease-free survival (for > 2 cycles, HR: 1.64, 95% CI: 1.21–2.22; for \geq 15 days, HR: 1.41, 95% CI: 1.04–1.90; for RDI < 85%, HR: 1.57, 95% CI: 1.06–2.31) but not overall survival.

Conclusions: The authors concluded that the practice of delays/reductions in chemotherapy to restrict toxicity should be avoided to achieve maximal benefit.

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