Aim: The relation between chemotherapy dose intensity and patient outcome in the management of early stage breast cancer is still arguable. Randomised trials showed benefit of full standard doses of chemotherapy on schedule. The aim of this study is to assess the impact of chemotherapy dose and intensity related factors on 5-year overall survival in group of early breast cancer (EBC) patients, treated with anthracycline based chemotherapy.

Methods: 1826 EBC cases diagnosed and treated in Affiliate of Lithuanian University of Health Sciences Kaunas Oncology Hospital from January 2004 to December 2007 were retrospectively analysed. Inclusion criteria were I – IIIA stage breast cancer and adjuvant anthracycline based chemotherapy. Only 294 patients were included in the analysis. Survival related endpoints were analysed with Kaplan-Meier estimates, long rank tests and Cox proportional hazards models.

Results: Patients who have undergone either > 2 cycle-delay (delay at any cycle defined as >3 days vs. plan), or 7 day-delay across the whole chemotherapy systematic plan, or < 85% relative dose intensity (RDI) showed significantly worse 5-year overall survival as compared to patients with no dose and intensity modifications (p< 0.001, p = 0.04, p< 0.001, respectively). 4 groups according to RDI level were analysed (Table 1). Decreasing RDI level was associated with significantly worse 5-year overall survival as compared to RDI >85%. According to dose and intensity modifications 4 group were analysed: no reductions or delays, reductions only, delays only, both reductions and delays. Our results suggest that shorter survival is related with reductions only, delays only and both delays and reductions as compared to no reductions and delays (p< 0.001 for all groups). Table 1. Prognostic value of anthracycline RDI level as compared to RDI >85%.

Conclusions: Delayed chemotherapy cycles and treatment with insufficient dose of anthracyclines were associated with reduced overall survival in women with early stage breast cancer. Moreover, worse survival is associated with reduced RDI level.

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