

Intraoperative ketorolac in high-risk breast cancer patients with and without inflammation. A prospective, randomized, placebo-controlled clinical trial.

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Abstract

Introduction: Perioperative events may affect the risk of breast cancer recurrence after surgery. Ketorolac, a non-steroidal anti-inflammatory drug routinely used to improve pain control postoperatively has been associated with better breast cancer outcome in retrospective studies. But whether a single dose of pre-incisional ketorolac may be sufficient to prolong recurrence-free survival is still unknown.

Patients and methods: The KBCt trial (NCT01806259) is a national, multicenter, prospective, double-blind, placebo-controlled, randomized phase III trial in high risk breast cancer patients. Each patient was assigned to the ketorolac or the placebo group. Patients were given one dose of ketorolac tromethamine (Taradyl®, N.V. Roche S.A., Belgium) or a matching placebo 30 minutes before surgery. Eligible patients were ≥ 18 and ≤ 75 years with histologically or cytologically confirmed, invasive ductal or lobular breast carcinoma planned for curative breast cancer surgery, and with at least one of those 3 criteria: a Neutrophil-to-Lymphocyte Ratio ≥ 4 , node-positive disease (cN1-N3) or a triple-negative histology. The primary endpoint of the study was Disease-Free Survival (DFS). Secondary endpoints included safety, pain assessment and OS.

Results: 203 patients were assigned to ketorolac (n=96) or placebo (n=107). Baseline characteristics were similar between arms. Patients had a mean age of 55.7 (SD 14) years. Both intra- and post-operative blood losses were not different between groups and there was no difference in pain at D1 after surgery. There was no difference neither for DFS (p=0.52) not for OS (p=0.88).

Discussion and conclusion: This study shows that a single administration of 30 mg of ketorolac tromethamine before surgery does not increase disease-free survival in high risk breast cancer patients. Overall survival is also comparable. No safety concerns were observed in this study.