Inference of Tamoxifen's Effects on Prevention of Breast Cancer

by
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Abstract

The largest randomized, double-blinded, placebo- controlled chemoprevention trial, the National Surgical Adjuvant Breast and Bowel Project's Breast Cancer Prevention Trial (NSABP-BCPT), evaluated the efficacy of tamoxifen in the prevention of breast cancer among women at high risk of developing the disease. The effect of tamoxifen on the time to diagnosis of the disease over the six-year follow-up of the trial has not been explored in literature. One related issue is that most of trial participants are not susceptible to breast cancer. We propose a flexible semiparametric model to assess the effects of tamoxifen on the incidence of breast cancer as well as time to the diagnosis of the disease, separately, in the framework of a cure-rate model. We used an estimating equation approach to estimating the unknown parameters, and assessed the semiparametric model assumption with a test based on the area between two survival curves.

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