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EVALUATION OF CYP2D6 POLYMORPHISM IN PATIENTS WITH BREAST CANCER AND TAMOXIFEN USERS OF TWO BREAST SERVICES OF BELO HORIZONTE

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Objective: This study aimed to assess the CYP2D6*4 polymorphism and the association of this polymorphism with the evolution of breast cancer since the reduction of the CYP2D6 activity due to polymorphisms of the gene that encodes the enzyme or the use of inhibitory drugs has been linked to reduced levels of endoxifen (EDF) and worse prognosis in women treated with tamoxifen (TAM). The treatment is multidisciplinary; TAM is an established and important therapeutic modality. This drug is metabolized by the CYP2D6 enzyme into its active metabolites, 4-hydroxytamoxifen (HTF), and EDF. **Methods:** The study was approved by the local ethical committee (CEP) and registered as CEP number 065/2009. This is a prospective study in which interviews were conducted by graduated mastologists with 138 patients with breast cancer treated with TAM in two public outpatient clinics. The inclusion criteria were invasive breast cancer diagnosis and use of the TAM as part of the treatment. Clinical data and blood samples were collected for CYP2D6 genotyping with the Restriction Fragment Length Polymorphism technique. The statistical analysis was conducted through the STATA 10.3 program. **Results:** We observed that 14.5% of patients had a recurrence and 30% of premenopausal patients had menstrual cycles. The average disease-free survival was 43.6±45.7 months, and the average overall survival was 44.5±46.1 months. Regarding the polymorphism, 81.15% were extensive metabolizers (*1/*1), 16.66% were intermediate metabolizers (*1/*4), and 2.17% were poor metabolizers (*4/*4). The data corroborate with the literature in relation to CYP2D6 polymorphism. **Conclusion:** Considering the high incidence of BC and the wide use of TAM in the treatment of this tumor, conducting research addressing the pharmacogenetics of TAM is of great importance to assess the impact of CYP2D6 polymorphisms in the adjuvant treatment of BC.

Keywords: Breast cancer. Polymorphism. CYP2D6. Tamoxifen.