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Service (sector) Electrophysiology - Clinical Electrophysiology Lab N° CEP

Retinal toxicity assessed by multifocal erg in asymptomatic patients treated with low-dosage tamoxifen.

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Purpose. Tamoxifen, an antiestrogen, has been used as an effective therapeutic agent in the treatment of breast cancer. This drug can cause ocular toxic effects mainly in the retina. The purpose of this study is to investigate central retinal toxicity by multifocal electroretinography (mfERG) in asymptomatic patients treated with low-dosage tamoxifen (20mg/day) for breast cancer. **Material and Methods.** mfERGs were prospectively recorded from 103 retinal locations within the central 25o with VERIS Science™ 5.1.2 Imaging System. Participants were 68 asymptomatic females with BCVA \geq 0.1 logMAR assigned in 3 groups: *Tamoxifen* – 30 patients (41-66 years, mean 54.0 \pm 6.7; median=53.1), treated with low dosage tamoxifen for breast cancer from 24 to 65 months (41.7 \pm 12.2; median =39.5 months); *Breast Cancer Control* – 17 patients (28-76 years, mean 48.1 \pm 14.4; median=47.7) with previously diagnosed for breast cancer who have not received tamoxifen as treatment until ERG testing; *Normal Control* – 21 normal volunteers (30-71 years, mean 49.2 \pm 11.1, median=50.9). Parameters of response densities (nV/deg²) and implicit times (ms) for N1 and P1 components of the first order kernel were determined and statistically analyzed (one-way ANOVA/ Mann-Whitney). **Results:** Mean N1-P1 response densities (RD), N1 and P1 implicit times (IT) for retinal eccentricities at 0°, 5o, 10o, 15o, 20o, e 25o were, respectively - *Tamoxifen: A* – 53.4 \pm 18.3; 35.1 \pm 11.2; 25.8 \pm 8.5; 22.5 \pm 8.0; 19.3 \pm 7.3; 20.1 \pm 7.8; IT N1 - 15.1 \pm 1.3; 15.1 \pm 1.2; 13.5 \pm 1.2; 13.1 \pm 1.4; 13.7 \pm 1.4; 13.7 \pm 0.8; IT P1 – 29.1 \pm 2.0; 27.2 \pm 3.1; 26.9 \pm 2.3; 26.3 \pm 2.4; 26.4 \pm 2.2; 26.6 \pm 6.7; *Breast Cancer Control:* RD 54.2 \pm 17.1; 34.9 \pm 11.3; 24.8 \pm 8.6; 20.9 \pm 7.2; 18.0 \pm 5.9; 18.1 \pm 5.8; IT N1 15.0 \pm 2.0; 15.0 \pm 1.1; 13.6 \pm 1.1; 13.9 \pm 2.1; 14.4 \pm 2.0; 14.2 \pm 1.4; IT P1 – 28.6 \pm 2.5; 28.6 \pm 2.0; 28.1 \pm 3.2; 27.6 \pm 3.5; 28.3 \pm 3.4; 28.1 \pm 3.1. *Normal Control:* RD 60.3 \pm 16.9; 37.4 \pm 7.8; 27.9 \pm 6.9; 23.2 \pm 5.8; 20.0 \pm 4.8; 20.7 \pm 5.0; IT N1 15.1 \pm 1.6; 15.0 \pm 1.1; 13.4 \pm 0.7; 12.9 \pm 0.5; 13.5 \pm 0.6; 13.8 \pm 0.7; IT P1 – 28.1 \pm 1.3; 27.7 \pm 0.9; 26.4 \pm 0.9; 25.5 \pm 0.9; 25.9 \pm 0.9; 26.0 \pm 0.8. Amplitude and implicit times were comparable across the 3 groups (p=0,108). **Conclusions:** Central retinal function assessed by multifocal ERG was normal in asymptomatic patients treated at least for two years with Low-dosage tamoxifen. These results confirm previous reports about the safety of tamoxifen regarding retinal toxicity.