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Screening for ocular tamoxifen toxicity versus neurological metastasis in breast cancer: A systematic review

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Objective: A systematic review was carried out comparing the clinic and management of tamoxifen (TAM) retinopathy and neurological metastasis after breast cancer. **Methodology:** In this study, we performed a systematic review of the literature. We searched for relevant papers published in electronic databases PubMed, Lilacs, SciELO, and ScienceDirect, from 2004 to 2023. We used the keywords “tamoxifen” AND “retina” AND “breast cancer” AND “neural metastasis” and similar operative words in Portuguese and Spanish. The work was done according to PRISMA guidelines, on March 2023. After the eligibility criteria, we included 16 papers. **Results:** TAM has application in breast cancer due to its effects on the upregulation of transforming growth factor B and downregulation of insulin-like growth factor 1, preventing tumor growth and appearance of metastasis. Moreover, TAM binds to estrogen receptors present in breast and neural retina tissue. While the risk of metastases, including neurological tumors, implies a powerful reason to prescribe TAM, we must keep pharmacovigilance on ocular toxicity, which starts with retinopathy, progressing to corneal changes and neuritis — all with symptoms that mimic neoplastic and paraneoplastic symptoms on nervous tissue. Even though the retinopathy is associated with high doses of TAM, the ocular toxicity is not derisory, resulting in visual impairment symptoms, dry eye, and paracentral corneal opacities — all these being reversible upon discontinuation of the medicine, unlike neoplastic disease. **Conclusion:** Although the use of a low dose of TAM performs safely for the majority of people, there is a myriad of ophthalmic events that can cause anxiety in routine appointments, both for the health team and for the patient. With that in mind, we must advocate for greater attention to early screening of symptoms and cost–benefit evaluation of dose maintenance to minimize side effects and promote a better quality of life.

Keywords: breast neoplasms; neoplasm metastasis; pharmacovigilance; tamoxifen; toxicity; vision disorders.