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Case Report
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Intermediate Uveitis under Adjuvant Hormone Therapy with Anastrozole: A New Observation

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Abstract

A 45-year-old woman was treated in January 2015 by conservative surgery for a stage breast cancer, luminal a subtype, node negative breast cancer. She received after a loco-regional radiotherapy followed by adjuvant hormone therapy by anastrozole since May 2015 for a programmed period of 5 years. Treatment was good tolerated excluding hot flushes and osteoarticular pain. She complained since March 2018 from visual disorders with blurry vision. Clinical exam showed a visual function at 8/10 for both eyes. Ophthalmic explorations showed a normal anterior segment and signs of intermediate uveitis of both eyes with positive vitreous Tyndall. Optical Coherence Tomography (OCT) and Fluorescein angiography were normal. Anastrozole was stopped after 3 years of treatment leading to symptoms resolution.

Keywords: Breast; Cancer; Localized; Adjuvant; Hormonotherapy; Anastrozole; Side effects; Intermediate uveitis

Introduction

Anastrozole is a non-steroidal Aromatase Inhibitor (AI) usually used as adjuvant therapy for estrogen receptor–positive breast cancer for post-menopausal women. Although ocular adverse effects of tamoxifen (a selective estrogen receptor modulator) are well described, only a few studies have reported ocular adverse effects of AIs [1-4]. This case report describes a patient with documented uveitis during anastrozole treatment.

Observation/Case Presentation

A 45-year-old woman was treated since January 2015 by conservative surgery for a stage 2, luminal a subtype, node negative ductal invasive breast cancer. After surgery, she received a loco-regional radiotherapy then adjuvant hormone therapy by oral one-daily anastrozole since May 2015 for a programmed duration of 5 years. Treatment was good tolerated excluding hot flushes and osteoarticular pain. She complained after 3 years of treatment, in March 2018 from reduced bilateral visual acuity with blurry vision. The patient had no history of eye disease or diabetes or past other medication. Clinical exam showed a visual acuity at 8/10 for both eyes. Ophthalmic explorations showed a normal anterior segment and signs of probable intermediate uveitis of both eyes with positive vitreous Tyndall. Optical Coherence Tomography (OCT) and Fluorescein angiography were normal.

After a systemic workup and precise anamnesis without previous history of ocular signs, we eliminated etiologies, like bacterial disease or vasculitis and rheumatologic disorders. Anastrozole was stopped after 3 years of treatment leading to symptoms resolution.

Discussion

Ocular adverse effects of aromatase inhibitors are not well identified and reported cases concerned retinal hemorrhages, optic disk swelling, vitreoretinal traction and eye dryness, our patient consulted for reduced visual acuity [1-4]. A case of hemi-central retinal artery occlusion diagnosed in a breast cancer patient using anastrozole was also reported [5]. Conversely to AI's, Tamoxifen, a selective estrogen receptor modulator has more ocular effects, when used also in adjuvant setting. It increases the risk of posterior sub capsular cataract and optic disk swelling and deteriorates the perceived color of flashed lights detected *via* Short-Wavelength-Sensitive (SWS) cone response isolated psychophysically [6]. However, Tamoxifen induced retinopathy is rare compared to AI's [1-4,6]. Our patient presented clinical and ophthalmologic signs, suggesting an

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intermediate uveitis, exceptionally related to AIs and more frequently observed in auto immune or infectious disease, but can also be iatrogenic [7]. We concluded then, in the absence of other systemic inflammatory processes, infectious causes and other medications taken by our patient that it has been caused by anastrozole. In our case, the patient had a reduced visual acuity and blurry vision. The most common symptoms of uveitis reported in the literature were ocular pain, photophobia, redness, watering, and diminished vision [8,9].

Another case of uveitis was previously reported in a 65-year-old patient with breast cancer receiving anastrozole during 2 years *vs.* 3 years for our part [10]. This patient was treated by difluprednate ophthalmic emulsion for 1 month inducing 1 month later, iritis and cystoid macular edema resolution on ocular coherence tomography and conversely to our, this patient continued to receive anastrozole with complete resolution of symptoms [10]. In our case, the suspension of anastrozole leads to symptoms resolution which enhances the implication of this drug. In another case, macular edema which can be a result of uveitis was reported in a 72-year woman receiving letrozole for breast cancer. However, examination found a pigment epithelial detachment that resolved with ranibizumab (a monoclonal antibody fragment anti VEGF-A, Vascular Endothelial Growth Factor-A) suggesting an exudative age-related macular degeneration [11]. The pathogenesis of aromatase inhibitors related uveitis is not known until now. Theoretical data suggest that depriving the retina of estrogen's neuroprotective effects leads to breakdown of the blood-retinal barrier which can induce uveitis [11]. Moschos et al. [12] reported a decrease in retinal nerve fiber layer thickness using OCT in patients receiving AIs suggesting that these drugs may cause structural changes in retina [12]. Physicians should be aware of the possible rare association between anastrozole and uveitis as described in our case. Ophthalmological surveillance of patients receiving aromatase inhibitors seems necessary. Future studies should aim to estimate the prevalence of ocular side effects, as well as targeting optimal management.

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