INTRAVITREAL RANIBIZUMAB FOR CHOROIDAL NEOVASCULARIZATION IN ANGIOID STREAKS: FOUR YEARS FOLLOW-UP

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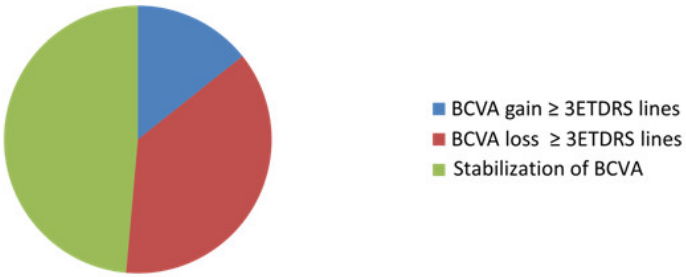
Purpose: The spontaneous evolution of angioid streaks-associated CNV is poor and frequently results in legal blindness, given that both eyes are affected in more than 70% of cases. In the last years, several studies have shown the benefits of intravitreal injections of anti-vascular endothelial growth factor (VEGF) in angioid streaks associated CNV, in small series over short study period, using ranibizumab or bevacizumab. Our purpose was to analyze retrospectively the efficacy of intravitreal ranibizumab injections for the management of choroidal neovascularization (CNV) in a large series of patients with angioid streaks over a long-term.

Methods: A consecutive series of patients affected with subfoveal CNV associated with angioid streaks were treated with intravitreal ranibizumab injections (0.5 mg/0.05 mL) between February 2007 and August 2012 at the Department of Ophthalmology at the University Paris-Est Creteil or at the Ecole Militaire Center in Paris. We recorded data about age at presentation, gender, medical history, ocular complaints and history, duration of the disease, prior ocular treatment, association with pseudoxanthoma elasticum. Patients followed for less than 6 months were excluded from the study. Best-corrected visual acuity (BCVA), fundus photography, optical coherence tomography (OCT), fluorescein angiography (FA) (and, if needed ICG angiography) were performed at the baseline visit. Patients were examined one month after the first injection and then monthly, with measurement of BCVA, fundus biomicroscopy, and optical coherence tomography. Fluorescein angiography was performed systematically at baseline and again if active CNV was suspected on clinical examination or on OCT. FA was performed systematically at the baseline visit, then every 3 months. The primary endpoint was the percentage of eyes with stable/improved visual acuity at the end of follow-up (loss of less than 3 ETDRS lines). Secondary endpoints were the percentage of eyes with stable/decreased macular thickness on OCT (less than a 10% increase in macular thickness), and the percentage of eyes with persistent leakage on FA at the last observation carried forward.

ICG angiography of a 48 year-old woman (right eye). She had already been trated with laser photocoagulation (**) for CNV. This shows juxtafoveal CNV (*) at first visit (VA = 20/20) and, after 5 years and 11 ranibizumab intravitreal injections, no CNV (VA= 20/25).

Results: **Thirty-five eyes of 27 patients** were treated with repeated intravitreal ranibizumab injections (mean of 9.9 +/- 7.2 injections, range 2-26) for a mean of **48.6** +/- **17.1 months** (range 8-66). Ten out of 35 eyes (28.6 %) were CNV treatment-naïve. At the end of follow-up, **BCVA was stabilized or improved** in 22/35 eyes (**62.9 %**). It was improved (≥ 3 ETDRS lines) in 5/35 eyes (14.3 %) and stabilized (+/- 2 ETDRS lines) in 17/35 eyes (48.6%). A loss of visual acuity (≥ 3 ETDRS lines) occurred in 13/35 eyes (37.1 %). In treatment-naïve eyes (10/35), BCVA stabilized in 2/10 eyes (20%) and decreased in 8/10 eyes (80 %). Subgroup analysis did not reveal any difference between PXE patients and non-PXE patients. Macular thickness had stabilized/decreased in 16/35 eyes (45.7%). At the last follow-up examination, on FA, no further leakage was observed in 27/35 eyes (77.1%). No severe side-effects were oberved.



Conclusion:
In this large series of patients with angioid streaks-associated CNV followed for 4 years, ranibizumab injections allowed stabilization of BCVA in most eyes. Ranibizumab appear as an effective therapeutic option in CNV associated with angioid streaks over long time.