Switching from ranibizumab to aflibercept for the treatment of retinal vein occlusion

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Background:

- Retinal vein occlusion (RVO) is the second most common retinal vascular disorder manifesting in loss of vision secondary to complications including macular oedema.
- There is strong data to support the use of intravitreal anti-vascular endothelial growth factors (anti-VEGF) for persistent macular oedema.
- Aflibercept is a decoy receptor which is a fusion protein consisting of portions of extracellular VEGF domains and Fc portion of human immunoglobulin. The higher binding capacity for VEGF may impart greater durability and equivalent efficacy with ranibizumab**.**

Aim:

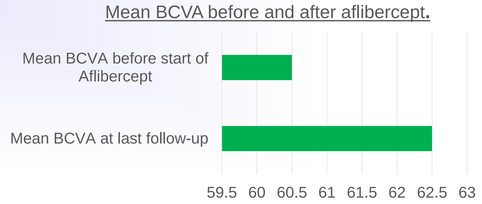
The management of RVO focuses on the control and monitoring of the associated complications. We sought to assess the outcomes in patients from switching to aflibercept whom had previously received ranibizumab for their RVO.

Methods:

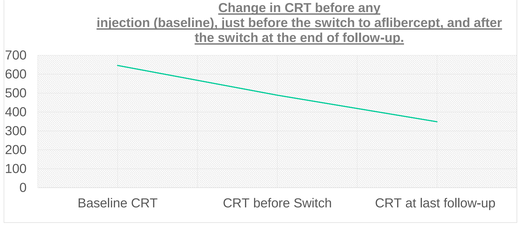
- This was a retrospective case note review of 23 eyes initially treated with ranibizumab with persistent fluid on OCT or recurrence of fluid beyond 4 weeks, and subsequently switched to aflibercept.
- Data collection included patient demographics, co-existing ocular and medical history and type of RVO.
- The primary outcome was the proportion of patients maintaining vision (<5 letter loss in best corrected visual acuity (BCVA)) compared to baseline and final ranibizumab injection.
- Secondary outcomes included the change in final BCVA and change in mean central retinal thickness (CRT) compared to baseline and final ranibizumab injection.
- We also reviewed the frequency of treatment necessary and the safety of intravitreal aflibercept.

Results:

- Data was collected on 13 women and 10 men, with a mean age of 76.
- Seventeen patients had branch RVO (73.9%), 5 had a central RVO (21.7%) and 1 had a hemi- RVO (4.4%).
- Of the 23 patients, 10 had also received ozurdex or laser therapy during or prior to ranibizumab therapy.
- The mean number of ranibizumab injections was 15.2 and mean duration of treatment was 21.4 months prior to switching to aflibercept.
- The mean baseline ETDRS BCVA was 49 and at final ranibizumab was 60.5**.** This improved to 62.5 at final aflibercept injection.



- 17 switched patients (73.9%) gained vision (≥ 5 letter gain), 3 patients (13%) maintained vision (<5 letter loss) and 3 patients (13%) lost vision (≥ 5 letter loss) from baseline.
- The visual acuities were similar at final ranibizumab injection compared to final follow-up with aflibercept.
- The mean CRT was 489.4µm before aflibercept injection and was 348.7µm at final aflibercept injection (mean change -28.7%).
- 16 of the switched patients (69.6%) adopted a treat and extend regime (varying from 6-10 weeks between injections) whilst maintaining vision and a dry macula.
- There were no recorded adverse events.



Discussion:

A significant proportion of our switched aflibercept patients maintained visual acuity whilst undergoing less frequent injections compared to their previous monthly ranibizumab.

Possible explanations for this include the proposed longer intravitreal half-life of aflibercept due to binding to multiple isoforms of human VEGF-A and VEGF-B and placental growth factor. This is in contrast to the potential loss of efficacy described in patients who have been treated over extended periods. The effects of switching to another drug are difficult to establish, since some effects might have occurred even if the eyes had not switched treatment over the course of time.

Although the study population was small (23 people), our results do demonstrate that in the short-term it appears to be beneficial to switch patients to aflibercept whom have received an extended course of ranibizumab for the management of macular oedema secondary to RVO.

References:

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