Changes in Macular Perfusion after ILUVIEN implant for Diabetic Macular Edema: an OCTA study

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LA ROCHE, NOVARTIS, NTC PHARMA, SIFI, THROMBOGENICS, ZEISS
This OCTA study evaluated changes in macular perfusion in patients affected by diabetic macular edema (DME) and treated with ILUVIEN® (fluocinolone acetonide intravitreal implant) 0.19 mg. The qualitative and quantitative assessment demonstrated that this treatment is not associated with worsening in retinal perfusion. Areas of reperfusion may be related to reversible retinal vessel closure secondary to leukostasis.
Recent evidences suggest that macular perfusion doesn’t modify after 12 months of intravitreal aflibercept therapy.

Because nonperfusion is expected to progress in diabetic retinopathy, this finding may represent a beneficial association between anti–VEGF therapy and macular vascular density.
• To investigate changes in macular perfusion in patients affected by diabetic macular edema (DME) and treated with ILUVIEN® (fluocinolone acetonide intravitreal implant) 0.19 mg
Methods

- Ten patients (10 eyes) older than 18 years of age and with type 2 non-proliferative DR and DME at baseline were included.
- Nine patients (9 eyes) without disease were included for comparison.
- All patients were treated with the ILUVIEN® implant.
- In order to investigate macular perfusion changes, patients had two OCTA scans: (i) baseline, and (ii) 4-month FU OCTA images.
The qualitative grading demonstrated that treatment was associated with both areas of loss of perfusion and regions of reperfusion.
Results – Quantitative analysis

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>4-month FU</th>
<th>P value</th>
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</thead>
<tbody>
<tr>
<td><strong>DR eyes treated with Iluvien</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parafoveal perfusion density</td>
<td>64.1±1.8%</td>
<td>66.1±2.9%</td>
<td>0.013</td>
</tr>
<tr>
<td>Perifoveal perfusion density</td>
<td>64.4±2.1%</td>
<td>65.2±2.6%</td>
<td>0.024</td>
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<tr>
<td><strong>DR eyes without treatment</strong></td>
<td></td>
<td></td>
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<tr>
<td>Parafoveal perfusion density</td>
<td>63.7±2.3%</td>
<td>63.1±4.4%</td>
<td>0.875</td>
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<tr>
<td>Perifoveal perfusion density</td>
<td>64.0±4.1%</td>
<td>64.2±3.7%</td>
<td>1.0</td>
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</tbody>
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The quantitative analysis proved a slight improvement in macular perfusion at the 4-month FU visit.
Conclusions

- This study confirms recent OCTA evidences that intravitreal treatments are not associated with worsening in retinal perfusion.
- Reversible retinal vessel closure (areas of reperfusion) may be related to leukostasis.
- Inflammation suppression with Iluvien is associated with areas of reperfusion and an overall no worsening of macular perfusion.
Thanks for your attention