Retinal Thickness in Pregnant Women with Diabetes

S.Golar¹, H.Wharton¹, M.Clarke¹ and P.Dodson¹,²
¹Departments of Ophthalmology and Diabetes, Heartlands Hospital, Birmingham UK
²School of Life and Health Sciences, Aston University, Birmingham UK

Introduction

Women with diabetes are at an increased risk of developing proliferative diabetic retinopathy (DR) and macular oedema during pregnancy. As a consequence, NICE guidelines suggest that women should be screened more regularly for DR during their pregnancy.

It is not known what happens to the thickness of the macula during pregnancy in women with diabetes.

The aim of the audit is to assess whether foveal thickness (FT) and total macular volume (TMV) alter during pregnancy in women with diabetes.

Methods

The audit consisted of pregnant women with diabetes who completed their antenatal care at Birmingham Heartlands Hospital between February 2010 and May 2011.

The Zeiss Stratus Optical Coherence Tomography (OCT) was performed on patients attending diabetic eye screening at intervals throughout their pregnancy.

Inclusion criteria

• No maculopathy present on fundus images throughout pregnancy
• At least one OCT scan during pregnancy

Statistical analysis used was the unpaired t-test.

Results

30 patients were included in total, 8 had type 1 diabetes and 22 had type 2 diabetes. Mean diabetes duration at the start of pregnancy was 6 years (range 1-20).

The number of patients screened in each trimester and the average weeks of gestation when screened can be seen in table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Number of Patients screened</th>
<th>Average week of gestation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st trimester</td>
<td>22</td>
<td>9.7</td>
<td>(6-13)</td>
</tr>
<tr>
<td>2nd trimester</td>
<td>25</td>
<td>23.4</td>
<td>(16-26)</td>
</tr>
<tr>
<td>3rd trimester</td>
<td>15</td>
<td>31.1</td>
<td>(27-36)</td>
</tr>
</tbody>
</table>

None of the patients showed any signs of macula oedema on the OCT scans during their pregnancy.

Conclusion

* The results suggest there is no significant change in foveal thickness in pregnancy in patients with diabetes.
* There was a significant statistical difference in total macular volume in the second trimester in one eye, however this would not be important clinically.
* This is an Important observation proven by the OCT which has not been previously studied.

* There was a significant difference in TMV between the first and second trimesters for the left eye only (p=<0.05) but not between the second and third trimesters (fig 1).

* There was no significant difference in FT between the three trimesters in both eyes (fig 2).