ABSTRACT: INTRODUCTION: Intraocular pressure constitutes the most important risk factor for the emergence of glaucoma. Diabetes has been associated with raised intraocular pressure. It is an important ocular risk factor associated with the occurrence of retinopathy, certain types of lens opacification (cataract), intraocular pressure increase and also open angle glaucoma during its course. The main objective of this study is to study variation in Intra Ocular Pressure (IOP) in normal subjects and subjects with diabetes.

METHODS: 60 subjects, aged between 40-70 years, were equally divided into study group and control group. Their IOP was recorded using standard procedure after obtaining their informed consent.

RESULTS: The mean IOP in diabetic group in Right and Left eyes showed an increase in IOP of 0.61 and 0.37 mm Hg when compared with the non-diabetic (control) group.

CONCLUSION: With this study, we conclude that the mean IOP in diabetic subjects showed a marginal increase when compared with non-diabetic subjects.

KEYWORDS: Intraocular Pressure, Glaucoma, Diabetes.
performed between 9:00 am-12:00 pm by Schiotz tonometry to minimize the diurnal variation. Blood glucose was estimated using Glucometer.

**INCLUSION CRITERIA:**
- Subjects with age group 40-70 years.
- Subjects were considered diabetics when fasting glucose was > 120mg/dl or [postprandial blood glucose > 150mg/dl].
- Subjects who are willing to participate in the study after written informed consent.

**EXCLUSION CRITERIA:**
- Glaucoma or IOP lowering medications,
- Ocular diseases
- H/O of smoking
- H/O of alcohol use
- H/O of hypertension

**STATISTICAL ANALYSIS:** Data thus collected using a proforma and entered in MS excel sheet. Data analysis is done by using SPSS 19.0 version. All the results were shown as Mean ± SD. Statistical analysis was done by using unpaired ‘t’ test for comparison of mean values in two groups. A ‘p’ value less than 0.05 is considered as significant whereas less than 0.001 is highly significant.

**RESULTS:** In our study, we observed that mean age of subjects in case group was 55.2 ± 6.2 and in controls was 48.3 ± 4.5. The mean random blood sugar level was 201.4 ± 67.1 in diabetics whereas it was 89.7 ± 12.9 in non-diabetics. (Table 1) On measuring the IOP in the right eye, we obtained mean value of 17.21 ± 1.4 in diabetic cases whereas it was 16.60 ± 0.99 in non-diabetics. This variation was statistically not significant. (Table 2). Similar measurement for the left eye showed mean IOP of 16.58 ± 1.28 for diabetics and 16.21 ± 1.25 for non-diabetics. This difference is also not significant. (Table 3).

<table>
<thead>
<tr>
<th>Study Group</th>
<th>Mean age (yrs)</th>
<th>Mean RBS (mg %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases (DM) n=30</td>
<td>55.2±6.2</td>
<td>201.4 ± 67.1</td>
</tr>
<tr>
<td>Controls (NDM) n=30</td>
<td>48.3±4.5</td>
<td>89.7 ± 12.9</td>
</tr>
</tbody>
</table>

Table 1: Distribution of cases and controls according to age group

<table>
<thead>
<tr>
<th>Study Group</th>
<th>Mean IOP (mmHg)</th>
<th>S. D</th>
<th>‘t’</th>
<th>P value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases (DM) n=30</td>
<td>17.21</td>
<td>1.4</td>
<td>1.77</td>
<td>0.08 (&gt;0.05)</td>
<td>Not significant</td>
</tr>
<tr>
<td>Controls (NDM) n=30</td>
<td>16.60</td>
<td>0.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Comparison of IOP in Right eye in Non-diabetic and diabetic
Table 3: Comparison of IOP in left eye in Non-diabetic and diabetic

<table>
<thead>
<tr>
<th>Study Groups</th>
<th>Mean IOP (mmHg)</th>
<th>S. D</th>
<th>‘t’</th>
<th>P value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases (DM) n=30</td>
<td>16.58</td>
<td>1.28</td>
<td>1.14</td>
<td>0.25</td>
<td>Not significant</td>
</tr>
<tr>
<td>Controls (NDM) n=30</td>
<td>16.21</td>
<td>1.25</td>
<td></td>
<td>(&gt;0.05)</td>
<td></td>
</tr>
</tbody>
</table>

The individual recording of IOP in right eye & left eye was plotted in a bar graph and is presented as Graph 1 (Right eye) and Graph 2 (Left eye).
**DISCUSSION:** In present study, the diabetics showed marginal higher IOP than non-diabetics. The mean IOP in control population (i.e., non-diabetics) was 16.60±0.99 and 16.21±1.25 mmHg in right and left eyes respectively. The normal mean IOP reported by Becker⁵ was 16.1 mmHg. A marginal increase in mean IOP in diabetics was found in our study. However, our study is not in agreement with the report of Palomar⁶ and Armaly⁷ who observed low IOP in diabetics as compared to non-diabetics.

**CONCLUSION:** The mean IOP in diabetic group in Right and Left eyes showed an increase in IOP of 0.6 and 0.3 mm Hg when compared with the non-diabetic (control) group. With this study, we conclude that the mean IOP in diabetic subjects showed a marginal increase when compared with non-diabetic subjects which is not statistically significant. Hence, in diabetics IOP should be monitored regularly so as to prevent complications.

**REFERENCES:**

1. Sang Woo Oh, Sangyeo up Lee, Cheolyoung Park & Dong Jun Kim; Elevated intraocular pressure is associated with insulin resistance and metabolic syndrome; Diabetes/Metabolism Research and Reviews 2005; 21 (5): 434-40.
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Date of Submission: 12/03/2015.
Date of Peer Review: 13/03/2015.
Date of Acceptance: 23/03/2015.
Date of Publishing: 04/04/2015.