Correlation of diabetic retinopathy with duration of Diabetes mellitus

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Introduction
Chronic complication of diabetes mellitus affect many organ systems. Chronic hyperglycemia results in microvascular and macrovascular complications. Diabetic retinopathy is a specific marker of microvascular disease in type 2 diabetes. Furthermore, the fundus examination is inexpensive and is routinely performed for the screening of chronic diabetes complications. Therefore, it is worthwhile to comprehensively study the predictive role of Diabetic Retinopathy for duration for diabetes. Therefore we conducted this study in order to examine the associations between retinal microvascular changes and duration of diabetes.

Aims and Objectives
To study correlation of diabetic retinopathy with duration of diabetes.

Materials and Methods
This prospective observational study was conducted on 100 patients with type 2 Diabetes mellitus with retinopathy attending OPD of MGM Hospital, Kamothe, Navi Mumbai for a period of Two year (January 2016- Oct 2017) to know the underlying disease whether it is new onset or old.

Methodology
This study was carried out in Tertiary care hospital. In this study 100 patients who fulfilled the inclusion and exclusion criteria and who gave a written informed consent was considered for study. The ethics clearance was obtained from the appropriate authority appointed by the institution (ethics committee).After clinical history thorough clinical examination was done this will consist of general and systemic examination with special emphasis on
- Fundus examination

Results
Table No 1 Years of Diabetes amongst study population

| Years of DM      | Frequency | Percent |
|------------------|-----------|---------|
| Valid            |           |         |
| less than 10 yrs | 17        | 17.0    |
| 10 to 20 years   | 25        | 25.0    |
| more than 20 years| 58        | 58.0    |
| Total            | 100       | 100.0   |

As seen in the table, the most of study population had diabetes from more than 20 years (58%) followed by 10 to 20 years (25%) and less than 10 yrs (17%)
Table no 2 Fundus Findings amongst study population

| Fundus Findings | Frequency | Percent |
|-----------------|-----------|---------|
| Valid           |           |         |
| Mild NPDR       | 58        | 58.0    |
| Moderate NPDR   | 42        | 42.0    |
| Total           | 100       | 100.0   |

As seen in the table, the most of study population had Mild NPDR (58%) followed by Moderate NPDR (42%).

Table no 3 Comparison of different age group with Fundus finding amongst study population

| Age group          | Count | Mild NPDR | Moderate NPDR | Total |
|--------------------|-------|-----------|---------------|-------|
| 41 to 50 years     | 27    | 10        | 37            |
| %                  | 46.6% | 23.8%     | 37.0%         |
| 51 to 60 years     | 23    | 23        | 46            |
| %                  | 39.7% | 54.8%     | 46.0%         |
| 61 to 70 years     | 8     | 4         | 12            |
| %                  | 13.8% | 9.5%      | 12.0%         |
| more than 70 years | 0     | 5         | 5             |
| %                  | 0.0%  | 11.9%     | 5.0%          |
| Total              | 58    | 42        | 100           |
| %                  | 100.0%| 100.0%    | 100.0%        |

Chi square – 11.88, df-3, P value – 0.008
As seen in the table, Mild NPDR was most commonly observed in 41 to 50 years (46.6%) followed by 51 to 60 years (39.7%), Moderate NPDR was most commonly observed in 51 to 60 years (54.8%) followed by 41 to 50 years (23.8%).

### Table no 4: Comparison of years of DM with Fundus finding amongst study population

| Fundus finding | Mild NPDR | Moderate NPDR | Total |
|----------------|-----------|---------------|-------|
| years of DM    | Count     | %             |       |
| 10 to 20 years| 8         | 17            | 25    |
| 10 to 20 yrs | 13.8%     | 40.5%         | 25.0% |
| less than 10 yrs | 11       | 6             | 17    |
| more than 20 years | 39      | 19            | 58    |
| more than 20 yrs | 67.2%   | 45.2%         | 58.0% |
| Total          | 58        | 42            | 100   |
| %              | 100.0%    | 100.0%        | 100.0%|

As seen in the table, Mild NPDR was most commonly observed in more than 20 years (67.7%) followed by less than 10 yrs (19%), Moderate NPDR was most commonly observed in more than 20 years (45.2%) followed by 10 to 20 years (40.5%) and this difference was statistically significant.
Discussion
Chronic hyperglycemia results in microvascular and macrovascular complications. The microvascular complications like diabetic retinopathy (DR) usually play a critical role in the life of diabetics. In the present study, the most common age group amongst study population was 51 to 60 years (46%) followed by 41 to 50 years (37%) and 61 to 70 years (12%).

In the present study, there was male predominance (58%) amongst study population.

In the present study, the most of study population had Mild NPDR (58%) followed by Moderate NPDR (42%).

In the present study, Mild NPDR was most commonly observed in DM more than 20 years (67.7%) followed by less than 10 yrs (19%) , Moderate NPDR was most commonly observed in more than 20 years (45.2%) followed by 10 to 20 years (40.5%) and this difference was statistically significant.

In the present study, Mild NPDR was observed in equally in male (50%) and female (50%) and Moderate NPDR was most commonly observed in male (69%) followed by female (31%).

The retinal vascular system is known to share various anatomical and physiological characteristics with the cerebrovascular and cardiovascular system. It is, therefore, highly likely that patients with diabetic retinopathy have concomitant arteriolar lesions in the cerebrovascular and cardiovascular systems, suggesting that retinopathy may reflect macro- as well as microangiopathy.

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