Original Research Paper

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General Medicine

DETERMINATION OF AVERAGE AGE FROM TIME OF ONSET TO DIAGNOSIS OF DIABETIC RETINOPATHY

Dr. Subhan Quraishi*	Junior Resident Department Of General Medicine Mgm Institute Of Health Sciences, Navi Mumbai Kamothe, Navi Mumbai *Corresponding Author
Dr. Mohammad Awais Farooqui	Junior Resident Department Of General Medicine Mgm Institute Of Health Sciences, Navi Mumbai Kamothe, Navi Mumbai
Dr. Sandeep Rai	Professor Department Of General Medicine Mgm Institute Of Health Sciences, Navi Mumbai Kamothe, Navi Mumbai

KEYWORDS :

INTRODUCTION

Diabetes mellitus is an enduring disease related with significant morbidity and mortality. The main pathogenesis behind this disease is its numerous micro- and macrovascular complications. In developing countries, diabetic retinopathy (DR) is one of the major sources of vision impairment in working age population. DR has been classified into two categories: proliferative diabetic retinopathy (PDR) and non-proliferative diabetic retinopathy (NPDR). NPDR is further classified into mild, moderate and severe, while PDR is further classified into early PDR, high risk PDR and advanced diabetic eye disease. DR is a disease caused due to high blood glucose levels which result in vision loss or permanent blindness. High-level advancements in the field of bio-medical image processing have speeded up the automated process of disease diagnoses and analysis. Much research has been conducted and computerized systems have been designed to detect and analyze retinal diseases through image processing. Similarly, a number of algorithms have been designed to detect and grade DR by analyzing different symptoms including microaneurysms, soft exudates, hard exudates, cotton wool spots, fibrotic bands, neovascularization on disc (NVD), neovascularization elsewhere (NVE), hemorrhages and tractional bands. The visual examination of the retina is a vital test to diagnose DR-related complications.

Pathogenesis

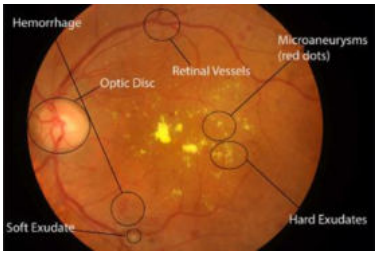
It the result of damage to the small blood vessels and neurons of the retina The earliest changes leading to diabetic retinopathy include narrowing of the retinal arteries associated with reduced retinal blood flow; dysfunction of the neurons of the inner retina, followed in later stages by changes in the function of the outer retina, associated with subtle changes in visual function.

Dysfunction of the blood retinal barrier, which protects the retina from many substances in the blood (including toxins and immune cells), leading to the leaking of blood constituents into the retinal neuropile Later, the basement membrane of the retinal blood vessels thickens, capillaries degenerate and lose cells, particularly pericytes and vascular smooth muscle cells.

This leads to loss of blood flow and progressive ischemia, and microscopic aneursym which appear as balloon-like structures jutting out from the capillary walls, which recruit inflammatory cells; and advanced dysfunction and degeneration of the neurons and glial cells of the retina.

Signs And Symptoms

- Diabetic retinopathy often has no early warning signs.
- The first stage, called non-proliferative diabetic retinopathy (NPDR), has no symptoms. Patients may not notice the signs and have 20/20 vision.
- The only way to detect NPDR is by fundus examination by direct or indirect ophthalmoscope by a trained ophthalmologist fundus examination can be used for objective documentation of the fundus findings, in which microaneurysms (microscopic blood-filled bulges in the artery walls) can be seen.
- If there is reduced vision , fluroscein angiography can show narrowing or blocked retinal blood vessels clearly (lack of blood flow or retinal ischemia)
- In the second stage, abnormal new blood vessels (neovascularisation) form at the back of the eye as part of *proliferative diabetic retinopathy* (PDR) these can burst and bleed and blur the vision, because these new blood vessels are fragile.
- The first time this bleeding occurs, it may not be very severe.
- In most cases, it will leave just a few specks of blood, or spots floating in a person's visual field which may last for months.
- On fundoscopic exam, a doctor will see cotton wool spots, flame hemorrhages, and dot-blot hemorrhages.



Aim Of The Study

Determination of average age from time of onset to diagnosis of diabetic retinopathy.

Inclusion And Exclusion Criteria

Inclusion Crteria

- Diabetic Patients
- Diagnosed case of Diabetic Retinopathy
- Age more than 18 years
- Subject consenting for the study

Exclusion Criteria

- Pervious history of trauma to eyes
- Age less than 18
- Subjects not consenting for studies

MATERIALS AND METHOD

- This study will be done in MGM medical college in department of General Medicine after approval by institutional ethics committee of MGMUHS

Study Area

- Mahatma Gandhi Mission Medical College Departments to be included-

- General medicine (OPD, MMW and FMW)
- Geriatric medicine (OPD, MMW and FMW)
- Sampling Type -Non Random Sampling
- Sampling method –Retrospective Study
- Sample Size- 60
- Study design: Observational study
- Study duration: 2 month after IEC approval

Ethical Aspects Of Study And Funding Details

Ethical Aspects:

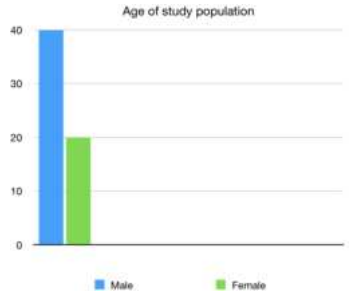
- Institutional Ethical Committee Clearance will be taken before start of the study
- Confidentiality of the patient will be maintained
- There is no additional risk to the patient because of the study
- No conflicts of interest none.

Funding details:

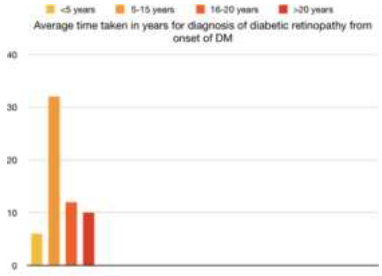
No extra Funding Required the investigation expenses will be borne by the patients themselves, as part of routine investigations

RESULTS

Table 1. Total Study Population Of Which Male Were 40, Female Were 20



Tabel 2. Average Time Taken In Years For Diagnosis Of Dr From Onset Of Dm, Majority Were Detected In Between 5-15 Years



DISCUSSION:

Diabetic retinopathy is commonly found in individuals with uncontrolled diabetes mellitus. Various factors clinical and biochemical factors, including inadeqaute glycemic control and long standing diabetes mellitus have increased incidence of diabetic retinopathy.

CONCLUSION

1. In this study done ,total 60 patients were evaluated of which 40 were males and 20 were females
2. People were diagnosed case of diabetes mellitus on medication, having varying age, with minimal age being 34 and maximum age being 82, with a mean of 56.97
3. Hba1c were checked and noted, highest hba1c were 14.2 and lowest being 6.5, and the mean being 9.28
4. Average age of diagnosis of diabetes was 44.74 in the study population
5. Time it took for the diagnosis of diabetic retinopathy since the diagnosis of dm were grouped as < 5years, 5 to 15 years, 16 to 20 years, >20 years

6 people were in group of less than < 5 32 people were in group of 5-16
6 people were in group of 16-20 10 people were in group of >20 with the average being 13.6 year since the diagnosis of dm

Thus from the data complied of 30 patients we can say that average age of diagnosis of diabetes is 44.74 and it took 13.5 years for the diagnosis of diabetic retinopathy since the diagnosis of dm

REFERENCES

1. Wolfensberger TJ, Hamilton AM. Diabetic retinopathy—an historical review. Semin Ophthalmol. 2001;17:2–7. doi: 10.1076/soph.16.1.2.4220. [PubMed] [CrossRef] [Google Scholar]
2. Wetzig PC, Worlton JT. Treatment of diabetic retinopathy by light coagulation. Br J Ophthalmol. 1963;47(9):539–541. doi: 10.1136/bjo.47.9.539. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
3. Photocoagulation treatment of proliferative diabetic retinopathy The second report of the diabetic retinopathy study findings. Ophthalmology. 1978;85:82–105. doi: 10.1016/S0161-6420(78)35693-1. [PubMed] [CrossRef] [Google Scholar]
4. Photocoagulation for diabetic macular edema Early treatment of diabetic retinopathy study report number 1. Arch Ophthalmol. 1985;103:1796–1806. doi: 10.1001/archopht.1985.01050120030015. [PubMed] [CrossRef] [Google Scholar]
5. The Diabetes Control and Complications Trial Research Group The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. N Engl J Med. 1993;329:977–986. doi: 10.1056/NEJM199309303291401. [PubMed] [CrossRef] [Google Scholar]
6. UK Prospective Diabetes Study (UKPDS) Group Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33) Lancet. 1998;352:837–853. doi: 10.1016/S0140-6736(98)07019-6. [PubMed] [CrossRef] [Google Scholar]
7. UK Prospective Diabetes Study Group Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. BMJ. 1998;317(7160):703–713. doi: 10.1136/bmj.317.7160.703. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
8. Leske MC, Wu S-Y, Hennis A, Hyman L, et al. Barbados eye study group hyperglycemia, blood pressure, and the 9-year incidence of diabetic retinopathy: the Barbados eye studies. Ophthalmology. 2005;112:799–805. doi: 10.1016/j.ophtha.2004.11.054. [PubMed] [CrossRef] [Google Scholar]
9. ACCORD Study Group, ACCORD Eye Study Group Effects of medical therapies on retinopathy progression in type 2 diabetes. N Engl J Med. 2010;363:233–244. doi: 10.1056/NEJMoa1001288. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
10. Klein R, Klein BE. Are individuals with diabetes seeing better? A long term epidemiological perspective. Diabetes. 2010;59:1853–1860. doi: 10.2337/db09-1904.