

Prevalence of Diabetic Retinopathy in Diabetic Patients of Vindhya Region

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Abstract- Diabetic retinopathy is most dreaded complication of ocular manifestation of diabetes. The Patients attending the diabetic /eye examination camps from September 2010 to Feb. 2012 were included in this study and an attempt was made to study the prevalence of retinopathy among these patients of Vindhya region (M.P.) India. Ophthalmoscope was used to check the retinopathy of diabetic patients. The blood sugar levels of these patients were measured using biochemical test. A total of 202 patients were examined in these camps. Out of them 104 were males and 98 were females. A total no. of 130 patients was diagnosed as diabetic. Out of them 94 (46.53 %) showed no retinal damage and were kept in background patients, Whereas 25 (12.37%) showed preproliferative changes. proliferative changes in 7 patients (3 %) and 4 patients (2 %) showed complete loss of vision. The prevalence of retinopathy is 17.8 % in diabetic patients examined. and it was more frequent in the patients with diabetes for longer duration.

Index Terms- Diabetes, Diabetic Retinopathy, Community Programme

I. INTRODUCTION

Medical advances in recent decades have paradoxically led to an increase in the incidence and prevalence of diabetes mellitus and its complications. Increased life expectancy in the industrialized world is one reason why diabetes is now more common; another is the increased prevalence of a sedentary life style and changed eating habits, resulting in overweight. The typical ocular complications range from impaired visual acuity due to diabetic retinopathy and premature cataracts all the way to blindness or loss of an eye. Even though diabetic retinopathy can be treated effectively, it nonetheless remains the most common cause of acquired blindness among persons of working age in the industrialized world. Diabetes is a disease of high prevalence; the first complication is damage to the vascular system that increases the mortality and morbidity in diabetic patients. One of these complications is a vascular retinopathy (1-3). The last fifty years reports about diabetic complications specify an increase in prevalence rate of diabetic retinopathy (DR) which is the most serious complication of diabetes and is one of the leading causes of blindness in the world. WHO has estimated that there were 171 million people worldwide with diabetes mellitus in 2000 and predicted that 366 million people will have diabetes mellitus by 2030. The most significant increase of DR is reported in developing countries (1). DR is the major health problem in all countries. The frequency of diabetes in our province is

considerably higher than the rest of the world (17.8 % vs. 2.0-11.7%) (4). Accurate information regarding the incidence of diabetic retinopathy and associated risk factors is important in the prevention of its development and of the visual impairment caused by this complication. This research was conducted to evaluate the prevalence of diabetic retinopathy (DR) in patients who were unaware of their eye condition.

II. MATERIALS AND METHODS

A descriptive cross-sectional study was performed in a 24 month period on patients who visited to M.P.Birla Hospital and Research Centre, Satna and reported in various camps. This survey was conducted from September 2010 to February 2012 . 130 patients with type 2 diabetes mellitus who had no eye complaint were selected. At first visual acuity measurement and slit lamp examination were done. Then pupil dilation was created by Cyclopentolate and fundus examination was performed by indirect ophthalmoscope. In some cases for maculae examination, if needed, trimirror or +78 lens was used. The examination of all patients was performed by an ophthalmologist. With regard to clinical findings, below stated patients were divided into five groups:

1. No retinopathy
2. Background retinopathy
3. Moderate non-proliferative diabetic retinopathy
4. Proliferative diabetic retinopathy

III. RESULTS

A total of 202 patients were examined in these camps. Out of them 104 were males and 98 were females. A total no. of 130 patients was diagnosed as diabetic. Out of them 94 (46.53 %) showed no retinal damage and were kept in background group , Whereas 25 (12.37%) showed preproliferative changes . proliferative changes in 7 patients (3 %) and 4 patients (2 %) showed complete loss of vision. The prevalence of retinopathy is 17.8 % in diabetic patients examined and it was more frequent in the patients with diabetes for longer duration diabetic retinopathy was relatively high. (Picture 1-3 and diagram 1 & 2)



Figure 1: Mild non-proliferative diabetic retinopathy with blot hemorrhages, mainly on the temporal side of the macula, and clinically significant macular edema with hard exudates



Figure2: Severe proliferative diabetic retinopathy with neovascularization on the optic disk and vitreous hemorrhages



Figure 3: Neovascularization on the radial surface extending from the edge of the pupil to the chamber angle

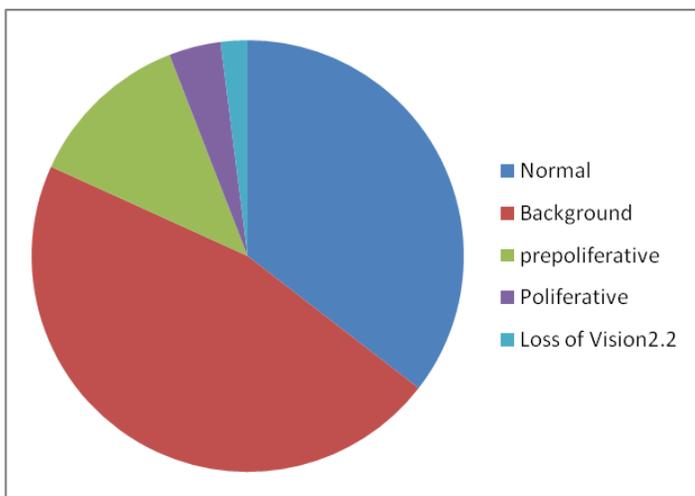


Diagram 1: Shows the % distribution of diabetic patients according to type of retinopathy

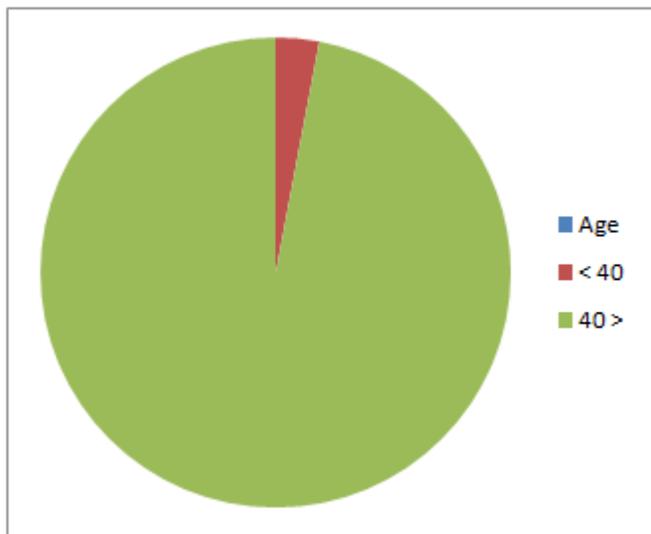


Diagram 2: Shows the Age wise distribution of Diabetic patients

IV. DISCUSSION

A significant percentage of patients with type 2 diabetes have established retinopathy at the time of initial diagnosis (5). There is evidence that DR begins to develop years before the clinical diagnosis of type 2 diabetes (6). Lack of symptoms and the insidious onset of type 2 diabetes may result in development of DR at an early stage (7). In a study in Tehran, diabetic retinopathy was found to be common in patients with newly diagnosed diabetes mellitus. The overall prevalence of diabetic retinopathy was 13.8% (8). Two other studies performed in Australia showed the prevalence of diabetic retinopathy in newly diagnosed type 2 non-treated diabetic patients to be 14%- 20% (9,10). Although our patient number was relatively small, the results can be compared with other studies. Despite the absence of ocular symptoms in our patients, prevalence of most patients did not have adequate eye care. In other studies conducted in Iran, high prevalence of DR and inadequate eye care were reported (8,11). Screening strategies depend on the rate of appearance and progression of diabetic retinopathy and on the risk factors that alter these rates (12).

V. CONCLUSION

Diabetic retinopathy is a well-recognized complication of diabetes mellitus. Visual disability from diabetic retinopathy is a significant public health problem. However, this morbidity is largely preventable and treatable. Due to diabetic patients unawareness and lack of eye complaints in many cases, screening programs for detecting diabetic retinopathy and early identification of disease could significantly decrease the complications of DR. If this disease is managed with timely intervention; the quality of life can be preserved. By a good planning, such as periodic eye examinations and adequate treatment, blindness due to diabetic retinopathy can be significantly reduced.

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REFERENCES

- [1] Wild S, Roglic G, Green A, Sicree R, King H. Global Prevalence of Diabetes: Estimates for the year 2000 and projections for 2030. *Diabetes Care* 2004; 27:1047-53.
- [2] Branwald E , Fauci S, Kasper D , Hauser S , Longo D , Jameson L. *Harrison Principle of Internal Medicine*.15th ed. USA : Mc Grow- Hill ; 2001.
- [3] Klein R , Klein BEK , Moss SE , Davis MD , Demets DL . The Wisconsin Epidemiologic Study of Diabetic Retinopathy II . Prevalence and risk of diabetic retinopathy when age at diagnosis is less than 30 years. *Arch. Ophthalmol* 1984 ; 102: 520-526.
- [4] Afkhami Ardakani M, Vahidi S, Vahidi A. Evaluation of Epidemiologic Indexes of Diabetis in Yazd city, 1377. *Journal of shahi Sadoughi University of Medical Sciences* 2001;1: 22-7.
- [5] American Academy Basic and Clinical Science Course – section 12, 2007-2008.

- [6] Rema M, Pradeepa R. Diabetic retinopathy: an Indian perspective. *Indian Journal of Medical Research* 2007;125(3):297.
- [7] Harris MI. Undiagnosed NIDDM: clinical and public health issues. *Diabetes Care* 1993; 16 : 642-52.
- [8] Abdollahi A, Malekmdani MH, Mansoori MR, Bostak A, Abbaszadeh MR, Mirshahi A. Prevalence of Diabetic Retinopathy in Patients with Newly Diagnosed Type 2 Diabetes Mellitus. *Acta Medica Iranica* 2006; 44(6): 415-9.
- [9] Owens DR, Volund A, Jones D, Shannon AG, Jones IR, Birtwell AJ, et al. Retinopathy in newly presenting non-insulin-dependent (type 2) diabetic patients. *Diabetes Res.* 1988; 9(2):59-65.
- [10] Nguyen HT, Luzio SD, Dolben J, West J, Beck L, Coates PA, et al. Dominant risk factors for retinopathy at clinical diagnosis in patients with type II diabetes mellitus. *J Diabetes Complications* 1996; 10(4):211-9.
- [11] Javadi MA, Katibeh M, Rafati N, Dehghan MH, Zayeri F, Yaseri M, et al. Prevalence of diabetic retinopathy in Tehran province: a population-based study *BMC. Ophthalmol* 2009; 9: 12.
- [12] Viswanath K. Diabetic retinopathy: Clinical findings and management. *Commun Eye Health J* 2003; 16 : 21-4.

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