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Risk Factors of Diabetic Retinopathy in Type II Diabetes Mellitus Patients

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ABSTRACT

The study findings reveal that males are more affected than females with diabetic retinopathy. 36% of the patients had hypertension, of these 36 cases 44.4% had moderate NPDR, 33.3% had severe NPDR and 22.2% had PDR. The mean glycosylated haemoglobin of these 100 patients were >7% showing poor glycaemic control in diabetic retinopathy patients in the past few years. Cases with poor metabolic control measured by higher HbA1C. Out of the 48 patients who had abnormal lipid pro fi le, 75% of them had NPDR and 25% had PDR.

Key words: Hypertension, NPDR, Diabetic retinopathy

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INTRODUCTION

Diabetic Retinopathy, a retinovascular complication of diabetes is one of the major threats of ophthalmology which is becoming still more common, affecting the young and aged as well. Persistent hyperglycaemia, hypoxia is the two significant factors which cause diabetic retinopathy [1-3]. We intend to study the risk factors of diabetic retinopathy in type II diabetes mellitus also to evaluate the incidence of diabetic retinopathy with age, sex, duration, blood pressure, glycaemic status of the patient, metabolic parameters such as glycosylated haemoglobin, lipid profile , serum Creatinine and haemoglobin [1-3].

METHODOLOGY

A hundred patients with type II diabetes mellitus of either sex were included in the study. Visual acuity was checked with Snellen's chart for the distance vision and Jaeger's chart for near vision. Blood pressure and blood investigations were also done.

RESULTS

Among the hundred cases of diabetic retinopathy, 80 patients had NPDR and 20 patients had PDR. Also among the study subjects, 62 patients had maculopathy. 14 patients had neovascularisation over the disc and 6 patients had neovascularisation elsewhere. 80% of the patients have non-proliferative diabetic retinopathy, whereas only 20% seem to have proliferative diabetic retinopathy. Men seem to be more affected than women, this may be due to the factor that most of the men, about 43 them, are above 61 years of age with longer duration of diabetes, which is associated with diabetic retinopathy, and only 12 women are above 61 years of age. None of the patients were found to have normal HbA1C levels, suggesting chronic hyperglycaemia. The purpose of assessing the HbA1C is to have an idea about control of diabetes. In WESDR study, persons with poor metabolic control as measured by higher HbA1C were found to be at a greater risk of having earlier onset or severe retinopathy. Studies suggest that the increase in HbA1C is determined by metabolic derangement (Figure 1, Tables 1 and 2).

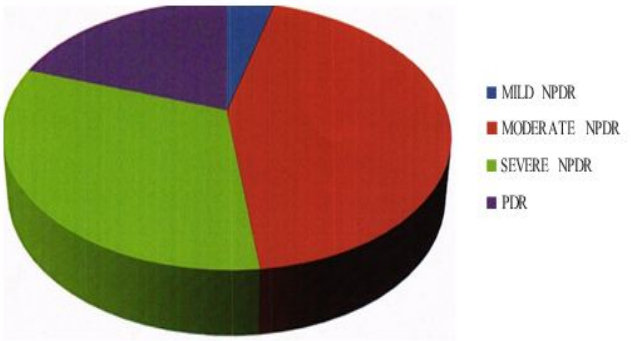

Figure 1: Incidence of grades of diabetic retinopathy.

Table 1: Clinical presentation.

Grades of diabetic retinopathy	Number of cases
Mild NPDR	4
Moderate NPDR	44
Severe NPDR	32
PDR	20
Maculopathy	62

Table 2: Relationship between Hbalc and diabetic retinopathy.

Grades of diabetic retinopathy	HbAlC levels 7.1 TO 10	HbAlC levels 10.1 TO 12	HbAlC levels 12.1 TO 14	HbAlC levels >14
Percentage of patients with mild NPDR	4%	-	-	-
Percentage of patients with moderate NPDR	24%	12%	-	8%
Percentage of patients with severe NPDR	8%	4%	16%	-
Percentage of patients with PDR	12%	-	4%	8%

DISCUSSION AND CONCLUSION

Of all the parameters a long duration of diabetics and poor metabolic control of diabetes as evidenced by high fasting blood sugar high glycosylated haemoglobin along with hyper-lipidemia are the significant changes which can precipitate diabetic retinopathy. Other metabolic changes like hypo-proteinuria, hyper triglyceridemia and increase in LDL also play a role in the development of diabetic retinopathy. The incidence of diabetic retinopathy 1s high m the age group of >60 years [4-11]. Diabetic retinopathy is an important devastating consequence of diabetes and a common cause of blindness in developing countries, precipitated by prolonged duration of diabetes and poor metabolic control of diabetes as evidenced by hyperglycaemia, high FBS and a high glycosylated haemoglobin levels.

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