

# Evaluation of Diabetic Retinopathy in Patients without Eye Complaints Referring to Imam Sadegh Hospital

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## ABSTRACT

**OBJECTIVE:** This research was conducted to evaluate the prevalence of diabetic retinopathy (DR) in patients who were unaware of their eye condition.

**MATERIALS AND METHODS:** A descriptive cross-sectional study was performed in a 12-month period on patients who were referred to Meybod Imam Sadegh Diabetes Center. 152 patients who had no eye complaint were selected. Pupil dilation was created by Cyclopentolate and fundus examination was performed by indirect ophthalmoscope. In some cases for maculae examination, if needed, trimirror lens was used. Examination results and risk factors were recorded and statistically analyzed by SPSS.

**RESULTS:** Of the 152 visited patients, 38 were male and the rest were female. Mean age was 53.2 years and mean diabetic period was 6.2 years. Without gender consideration 11% suffered from one type of DR.

The results of this study showed that age, duration of disease, hypertension, blood sugar level and hyper lipidemia were effective risk factors for DR, but sex was not significantly related to DR.

**CONCLUSION:** Diabetic retinopathy is a well-recognized complication of diabetes mellitus. Screening programs for detecting diabetic retinopathy and early identification of disease could significantly decrease the complications of DR. By a good planning, such as periodic eye examinations and adequate treatment, blindness due to diabetic retinopathy can be reduced.

**KEY WORDS:** Diabetic retinopathy, Diabetes.

## INTRODUCTION

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

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in all countries. The frequency of diabetes in our province is considerably higher than the rest of the world (14% 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.

#### MATERIALS AND METHODS

A descriptive cross-sectional study was performed in a 12-month period on patients who were referred to Meybod Imam Sadeh Diabetes Center. This survey was conducted from March 2007 to February 2008. 152 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. Mild non-proliferative diabetic retinopathy
3. Moderate non-proliferative diabetic retinopathy
4. Moderate non-proliferative diabetic retinopathy with clinical significant macular edema (CSME) or severe non-proliferative retinopathy
5. Proliferative diabetic retinopathy

Examination results and the risk factors were recorded and statistically analyzed by SPSS.

#### RESULTS

Among 152 visited patients 38 were male and the rest were female. Mean age was 53.2 years and mean diabetic period was 6.2 years (Table 1). Without gender consideration 11% suffered from one type of DR (Figure 1).

This study showed that age, duration of

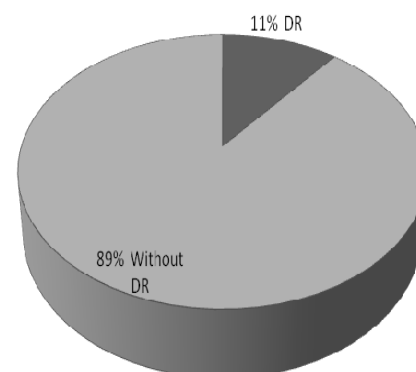
disease, hypertension, blood sugar level and hyper lipidemia were effective risk factors for DR, but sex was not significantly related to DR.

#### 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

**Table 1-Demographic characteristics of patients**

characteristic	min	max	median
age	34	72	53.2
Duration of disease(year)	1	30	6.2
Fasting blood sugar (mg/dl)	69	480	289
Cholesterol (mg/dl)	93	490	215
Triglyceride (mg/dl)	66	1303	238
Systolic blood pressure	120	170	140
Diastolic blood pressure	70	100	80



**Figure 1- Prevalence of DR in this study**

diabetic retinopathy was relatively high. 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).

#### 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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