Prevalence of Diabetic Retinopathy and the Effect of Expanding the Screening Interval at Primary Care Centers

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Introduction

Diabetes mellitus is one of the most prevalent diseases all over the world. Diabetic Retinopathy is the most frequent microvascular complications known to be a leading cause of blindness; the prevalence of diabetic retinopathy ranged from 19% to 36% in Saudi Arabia. Diabetic retinopathy may be a condition which will occur in people that have diabetes. It causes progressive damage to the retina, the light-sensitive lining at the rear of the attention. Diabetic retinopathy may be a serious sight-threatening complication of diabetes.

Diabetes interferes with the body's ability to use and store sugar (glucose). The disease is characterized by an excessive amount of sugar within the blood, which may cause damage throughout the body, including the eyes.

Over time, diabetes damages small blood vessels throughout the body, including the retina. Diabetic retinopathy occurs when these tiny blood vessels leak blood and other fluids. This causes the retinal tissue to swell, leading to cloudy or blurred vision. The condition usually affects both eyes. The longer an individual has diabetes, the more likely they're going to develop diabetic retinopathy. If left untreated, diabetic retinopathy can cause blindness.

Symptoms of diabetic retinopathy include:
• Seeing spots or floaters
• Blurred vision
• Having a dark or empty spot within the center of your vision
• Difficulty seeing well in the dark

When people with diabetes experience long periods of high blood glucose , fluid can accumulate within the lens inside the attention that controls focusing. This changes the curvature of the lens, resulting in changes in vision. However, once blood glucose levels are controlled, usually the lens will return to its original shape and vision improves. Patients with diabetes who can better control their blood glucose levels will slow the onset and progression of diabetic retinopathy.

According to a 2018 American Eye-Q Survey conducted by the AOA, nearly half Americans didn't know whether diabetic eye diseases have visible symptoms (often which the first stages of diabetic retinopathy do not). an equivalent survey found that quite one-third of USA citizens didn't know a comprehensive eye exam is that the only thanks to determine if an individual's diabetes will cause blindness, which is why the AOA recommends that everybody with diabetes have a comprehensive dilated eye examination a minimum of once a year. Early detection and treatment can limit the potential for significant vision loss from diabetic retinopathy.

Treatment of diabetic retinopathy varies counting on the extent of the disease. People with diabetic retinopathy may have laser surgery to seal leaking blood vessels or to discourage other blood vessels from leaking. Your doctor of optometry might get to inject medications into the attention to decrease inflammation or stop the formation of latest blood vessels. People with advanced cases of diabetic retinopathy might need a surgery to get rid of and replace the gel-like fluid within the back of the attention, called the vitreous. Surgery can also be needed to repair a detachment of the retina. this is often a separation of the light-receiving lining within the back of the attention.

Risk factors were different in many studies, but the age of the patient, duration of diabetes, nephropathy, neuropathy, insulin use, poor glycemic control, hypertension and male gender significantly increased the danger, while smoking, obesity and hyperlipidemia decreased the danger. (K. Al-Rubeaan,2015)

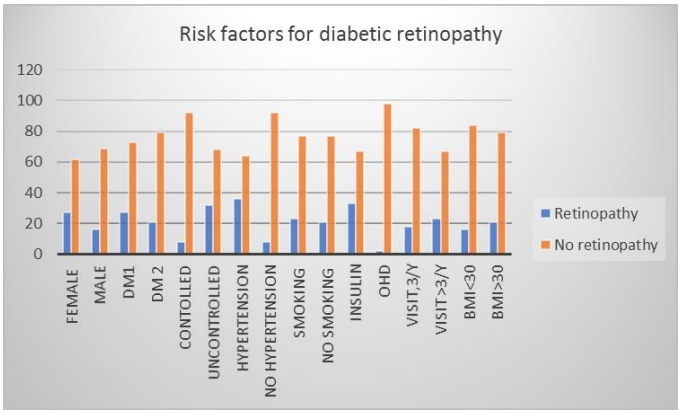
Primary care centers in Saudi Arabiafollowthe National Saudi Diabetic Guidelines for medical aid of diabetes for medical care, that recommends primary prevention of diabetic retinopathy by controlling its risk factors and annual screening. We aimed to review the prevalence of diabetic retinopathy and its risk factors additionally to estimate the effect of expanding the screening interval on the speed of detection of diabetic retinopathy.

Objectives

1. Determine the prevalence of diabetic retinopathy and its risk factors among diabetic patients attending primary care centers.
2. Assess the effect of expanding the screening intervals for diabetic retinopathy.

Methodology

This is a cross sectional study using patients' medical records.167 medical records that fulfilled the inclusion criteria were randomly selected from three primary care centers in Jeddah city during the period from April 2015 tell April 2018,and data were collected regarding age, sex, diabetes type and duration, BMI, HBA1C,smoking status blood pressure measurement, , treatments prescribed, documented follow up visits, ophthalmological referral, and the results of the screening tests mainly the HbA1c, LDL level, creatinine level and those with positive findings in the ophthalmologist reports(figure 1)
value=0.364). (Figure 3)



Results:

Prevalence of diabetic retinopathy in our sample was 21.6% (95% CI, 15.6% to 28. 6%). The 36 cases with retinopathy had a mean age of 61± 11years (95% CI, 57.28% to 64.72 %)., while the mean age for those who had no retinopathy was 54 ± 10years (95% CI, 52.27% to 55.73%) and this was statistically significant **(P= .001).**

Gender, type of diabetes, obesity, smoking status had no significant statistical correlation with diabetic retinopathy. While HBA1C level and being controlled diabetic, hypertension, insulin use, dyslipidemia and nephropathy had significant correlations with diabetic retinopathy. 54% referred once per year and 15%found to have in comparison with 21% referred only once every three years and 36%found to have diabetic retinopathy (**P value=0.05).**there was no significant relation of diabetic retinopathy to the frequency of follow up visits (P value=0.364).(Figure 3)

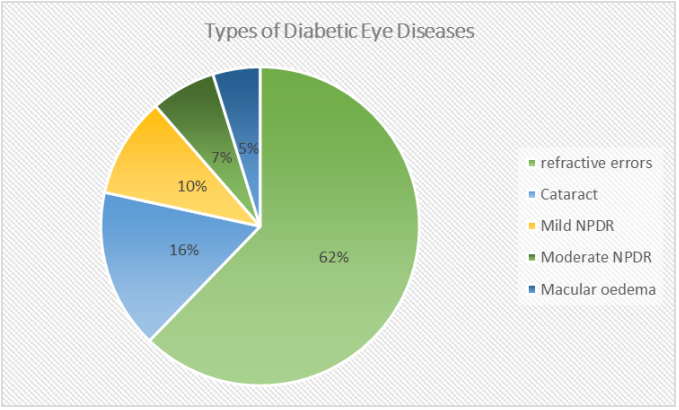


Figure 1

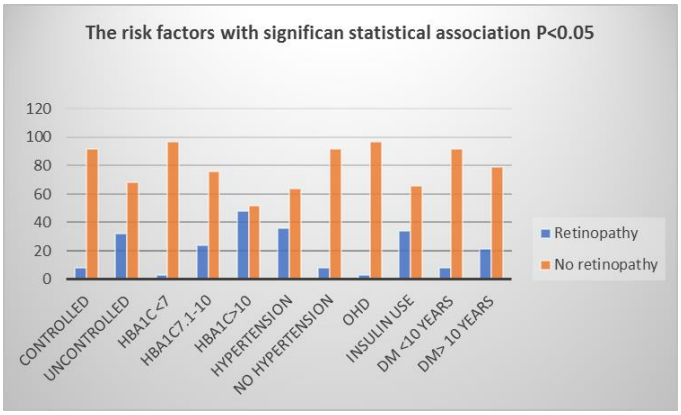
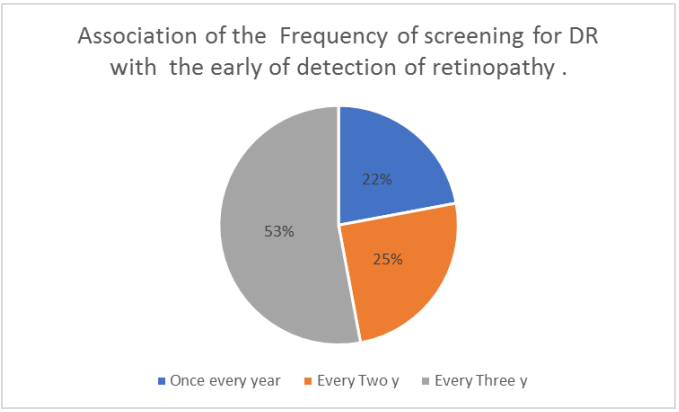


Figure 2



Discussion:

The prevalence of diabetic retinopathy in was 21.6 (95% CI, 15.6% to 28.6%). Risk factors were related more to the age, duration of diabetes mellitus, uncontrolled, insulin therapy, and hypertension as well as nephropathy and dyslipidemia. Although the screening program for diabetic retinopathy at primary care centers, is of utmost importance for early detection, but we found that expanding the screening interval up to two to three years would be more yielding in detecting more cases and with no increased risks, and is more convenient to patients and primary care professionals especially for diabetics with short duration less than ten years and a controlled risk factors