



## Service Priorities and Programmes Electronic Presentations

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### **Incidence of Diabetic Retinopathy in a primary care setting in Hong Kong**

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#### **Introduction**

Diabetic retinopathy (DR) is a complication of diabetes mellitus (DM), contributing to 5% of world blindness and has become one of the major causes of visual impairment in the working-age population. More than 75% of patients who have suffered from DM for more than 20 years will develop different levels of DR. Currently, in Hong Kong, around 10% of population suffers from diabetes mellitus. However, studies conducted in Chinese population, especially in Hong Kong, on the incidence of DR and risk factors are still limited.

#### **Objectives**

To identify the incidence of diabetic retinopathy (DR) and to investigate the risk factors associated with the development of DR

#### **Methodology**

This is a retrospective cohort study. Type 2 diabetic patients without diabetic retinopathy and who had attended two diabetic retinopathy screening sessions in Fanling Family Medicine Centre within the period April 2011 to October 2013 were included in this study. Retinal photographs were taken and graded by optometrists according to guidelines during each screening session. General health history, including age, sex, glycosylated hemoglobin (HbA1c), blood pressure control, duration of diabetes mellitus, triglyceride, total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, presence of albuminuria, smoking status and Body Mass Index (BMI), was obtained from electronic medical record. By comparing the retinal photos of two visits, incidence of DR was determined. This study further evaluated the association between the risk factors and the development of DR.

#### **Result**

Among 1,096 subjects, all were free of DR in the first screening. In the 2-year follow up, 193 (17.6%) developed DR in the second screening. Duration of DM (Adjusted

Odds ratio: 1.043, 95%CI: 1.017-1.069), level of glycosylated hemoglobin (HbA1c) (Adjusted Odds ratio: 1.213, 95%CI: 1.068-1.378) and current smoking (Adjusted Odds ratio: 1.631, 95%CI: 1.045-2.545) were positively associated with the development of DR. Other predictor variables were not statistically significant. Among 193 patients, 17 (8.8%) had sight-threatening DR while the rest (91.2%) had non sight-threatening DR. Patients with longer duration of DM, higher HbA1c and current smoking were more likely to develop DR. These patients should be stressed to have regular eye examination. Education and counselling focusing on glycemic control and smoking cessation could be organized for diabetic patients.