**Mock Abstract**

 **Effect of uncontrolled blood sugar level and high blood pressure on Diabetic Retinopathy among patients with type 2 Diabetes Mellitus**

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**Abstract**

**Background**: Both Diabetes Mellitus and Hypertension were the common type of non communicable diseases and it was found mostly among people with sedentary lifestyle. Like others non communicable diseases, these two diseases cause the patients to have target organs damages (complications) such as nephropathy and retinopathy if the patients were poorly controlled for long duration. There were many evidences of identified risk factors concerning with getting diabetic nephropathy i.e. uncontrolled sugar level, hypertension, physical inactivity and smoking etc., but there was little evidence on effect of blood sugar and blood pressure on getting diabetic retinopathy among patients with type 2 Diabetes Mellitus.

**Objective**: To investigate target organ damages (Diabetic retinopathy) among patients with type 2 Diabetes Mellitus

**Methods**: This study was hospital based cross-sectional study and the study population was those patients diagnosed with type 2 Diabetes and hypertension visiting hospitals in care of Ministry of Public Health and Bangkok Metropolitan Administration in Thailand during 2011, 2012 and 2013. Total numbers of study population were 174,578 from specialist clinics, general medical clinic, general practice clinic and others. Patients were diagnosed having diabetic retinopathy by physicians within 12 months of study period and HbA1c was also examined by laboratory within 12 months of last visit.

**Results**: Among study population, 18.4% of patients had had diabetic retinopathy (95% CI: 18.2% to 18.5%). Bivariate logistic regression was done and it was found that patients with HbA1c level ≥ 7% had had more retinopathy than that of HbA1c < 7% (OR = 4.5, 95% CI: 4.4 to 4.7, *P* = 0.00) and patients with their blood pressure > 130/80 mmHg had had also more retinopathy than that of ≤ 130/80 mmHg (OR = 1.33, 95% CI: 1.30 to 1.37, *P* = 0.000). The mean difference of disease duration (year) of patients with diabetic retinopathy was not clinical significant different with that of patients without retinopathy (-0.00121: 95% CI: -0.00028 to 0.0004, P = 0.93) respectively. Multiple logistic regression analysis was done to get adjusted odds ratio for age and sex of patients and it was still high odds ratio for patients with HbA1c level ≥ 7% (OR = 4.6, 95% CI: 4.4 to 4.7, *P* = 0.00) and also still high odds ratio for blood pressure > 130/80 mmHg (OR = 1.29, 95% CI: 1.26 to 1.33, *P* = 0.000). It was also found high odds ratio for female patients (OR = 1.21, 95% CI: 1.26 to 1.33, *P* = 0.000) but not much difference for age variable (OR = 0.983, 95% CI: 0.982 to 0.984, *P* = 0.000).

**Conclusions**: According to the above findings , the study concluded that if patients had high Hba1c level and high blood pressure, the chance of getting retinopathy was more than patients with controlled Hba1c level and low blood pressure.

**Key words:** diabetic retinopathy, HbA1c,