**Effect of Diffferent Types of Anti-diabetic medications on**

 **HbA1C level in Type 2 Diabetic Mellitus Patients at Hospitals in Thailand**

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 Abstract

**Background**: Diabetes Mellitus (DM) is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin which is one of the global pandemic which involve Type 2 DM. Several complications associated with type 2 DM, can be delayed or prevented with regular monitoring of blood glucose level, adequate follow up, and timely treatment for elevated blood glucose.

**Objective**: To assess the glycemic control of Type 2DM patients who were on different types of

anti-diabetic medications by HbA1C level at Hospitals in Thailand.

**Methods**: A cross-sectional study was conducted by using DAMUS study data 0n 2011.. Nationally representative sample surveys of 59750 patients with type 2 DM were interviewed at 549 hospitals in Thailand. Among them, 25945 patients were on different types of anti-diabetic medications. Patients who reported taking only OHA, only insulin, both OHA and insulin, at the hospitals were classified as taking anti-diabetic medications. Independent variables such as medications and HbA1C level (dependent variable) are presented with frequency and percentage. Multiple logistic regression was done to assess the association between independent variables and the dependent variables with p<0.05 taken to indicate statistical significance.

**Results**: Among a total of 59750 type 2DM patients, 43.4% (95%CI 0.42 to 0.43) of Type 2DM patients had been on anti-diabetic medications (only OHA, only insulin, both OHA and insulin during the previous 12 months). Only OHA was reported with a frequency of 78.63% while that of only insulin was 8.58%. Patient who took both insulin and OHA was reported in 12.78% of all Type 2DM patients. Multiple logistic regression analysis was done by using OHA group as reference category and it was found that insulin alone group was 2.18 times more controlled than reference group (OR = 2.18; 95%CI: 1.92 to 2.46 ; *p* < 0.0000), and that with both OHA and insulin was 3.46 times more controlled than reference group (OR = 3.46 ; 95%CI: 3.10 to 3.85 ; *p* < 0.000 ).

**Conclusions**: Type 2DM patients who took both OHA and insulin was 3.46 times more controlled than those who took only OHA alone. But the control status of Type 2 Dm patients also depend on the others factors. Patients who have complications, can’t get well control even if they took both OHA and insulin. To maintain the normal blood glucose level and HbA1C level, regular follow up, investigations and quality treatments are needed. These can be achieved by giving health education, providing accessible to health care service and further qualitative research on effects of anti-diabetic medications are needed.

**Key Words**: Type 2DM, HbA1C, Oral Hypoglycemic agents, Insulin