

Diabetes Health Promotion Centers, which was 32.5%, 30.6%, and 35.3%, respectively, the blood sugar and blood pressure control in the investigated community hospital were significantly better. Those who had HbA1c < 7% or blood pressure < 130/80 mmHg at baseline were more likely to achieve all ABC goals after participating in the program. The significant factors related to ideal blood sugar control (HbA1c < 7%) included male, diabetes duration < 5 years, non-smoker, regular exercise, and better glycemic control at baseline.

**Conclusion:** After implementing a diabetes management program, more than one third of patients enrolled in the program could reach the optimal standard set by the National Diabetes Health promotion centers. Our results indicate more effects needed to promote quality of diabetes care in Taiwan. Our study also implies healthy behaviors such as non-smoking and regular exercise are conducive to better glycemic control. This is empirical evidence supporting health education in diabetes care.

#### PD-61

##### Health economic impact of hypoglycemia among 7,289 insulin-treated patients with diabetes: Results from an International survey in 9 countries

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**Background and aims:** Hypoglycemia is a key consideration in the individualization of treatment in patients with diabetes. However, because observational studies are predominately conducted in Western countries and are limited in number and consistency of design, actual hypoglycemia rates in clinical practice, and their socio-economic impact, remain unclear for many countries.

**Materials and methods:** The International Operations (IO) Hypoglycemia Assessment Tool (HAT) study is a non-interventional, real-world, observational study of self-reported (using self-assessment questionnaires) hypoglycemic events in Bangladesh, Colombia, Egypt, Indonesia, the Philippines, Singapore, South Africa, Turkey and the UAE among 7,289 patients with insulin-treated type 1 (T1D) and type 2 diabetes (T2D). This abstract reports the health economic (HE) implications, including direct and indirect costs, of hypoglycemic episodes occurring in the 6-month retrospective and 4-week prospective periods of the IO HAT study.

**Results:** Rates of any hypoglycemia (per patient, per month) were 4.8 and 6.9 in patients with T1D and 1.6 and 2.4 in those with T2D during the retro- and prospective periods, respectively. For both patients with T1D or T2D, reporting of any and severe hypoglycemic events were significantly higher ( $p < 0.001$ ) in the prospective period, whereas that of nocturnal hypoglycemic events was significantly higher ( $p < 0.001$ ) in the retrospective period. The most common direct impact of hypoglycemia was increased blood glucose monitoring which occurred in 43.8% (T1D) and 20.0% (T2D) of patients in the 4-week prospective period. Other impacts included telephone contacts with a health care team member (6.4 and 5.9%, respectively), additional clinic appointments (5.8 and 4.3%) and post-hypoglycemic event hospital admissions (3.0 and 1.7%) in patients with T1D and T2D, respectively. Indirect impacts of hypoglycemia included reduced work/study punctuality (arriving late or leaving early) in patients with T1D (11.5 and 9.4%) and T2D (3.5 and 3.7%). In addition, some reported absence from their workplace or studies (T1D 6.3%; T2D 3.5%).

**Conclusion:** Hypoglycemia is a major concern in diabetes treatment and is not just a barrier to reaching appropriate glycemic targets, but also increases HE costs. This study details both direct and indirect HE impacts (to healthcare, employers or patients) of hypoglycemic episodes in patients with T1D or T2D across non-Western countries.

#### PD-62

##### Fibrinogen level was correlated with glycemic control, not with lipid profiles in type 2 DM patients

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**Background:** The worldwide prevalence of type 2 diabetes mellitus (T2DM) has risen dramatically over the last two decades and it indicated that the number of individuals with diabetes will continue to increase near future. Fibrinogen plays a role as a risk factor increasing cardiovascular morbidity and mortality in T2DM. Fibrinogen is determined by several modifiable and non-modifiable factors like BMI, glycemic control and lipid profiles.

**Objective:** The aim of this study is to analyze the correlation of fibrinogen level, glycemic control and lipid profiles in T2DM patients.

**Material and methods:** This cross sectional study was conducted at diabetes outpatient clinic Dr. Soetomo teaching hospital Surabaya Indonesia. Inclusion criterias were patients with T2DM aged over 45 years old and signed informed consent. Patients with severe infection, renal and liver dysfunction, pregnancy, fibrate treatment were excluded in this study. We interviewed and measured body weight and height, BMI, blood pressure and baPWV. Fasting plasma glucose (FPG) and post prandial glucose (PPG), HbA1c, lipid profiles and fibrinogen level were measured as well. Data was statistically analyzed using Pearson correlation test.

**Results:** We analyzed 40 patients who have been diagnosed with T2DM consisting of 17 males and 23 females. There were 16 T2DM patients with BMI < 25 kg/m<sup>2</sup> (non-obese) and 24 patients with BMI > 25 kg/m<sup>2</sup> (obese). The overall mean HbA1c was 8.01 ± 1.39%, total cholesterol was 203.57 ± 28.02 mg/dL, LDL-cholesterol was 144.52 ± 36.57 mg/dL, HDL-cholesterol was 47.15 ± 13.02 mg/dL, triglyceride was 179.31 ± 54.42 and fibrinogen 456.75 ± 142.60 mg/dL. One Sample Kolmogorov Smirnov statistical test indicated that the data distribution was normal. There was significant correlation between fibrinogen level and HbA1c ( $r = 0.313$ ;  $p < 0.05$ ). In other hand, there were no significant correlations between fibrinogen level and total cholesterol ( $r = 0.239$ ;  $p = 0.137$ ), LDL cholesterol ( $r = 0.027$ ;  $p = 0.137$ ), HDL cholesterol ( $r = 0.112$ ;  $p = 0.493$ ) and triglyceride ( $r = 0.134$ ;  $p = 0.409$ ). There was significant correlation between fibrinogen level and HbA1c in non-obese patients ( $r = 0.568$ ;  $p < 0.05$ ), but there was not in obese patients ( $r = 0.001$ ;  $p = 0.998$ ). **Conclusion:** There was significant correlation between fibrinogen level and glycemic control among T2DM patients, but there was no significant correlation between fibrinogen level and lipid profiles. There was also significant correlation between fibrinogen and glycemic control in non-obese patients, in contrast with the obese patients.

#### PD-63

##### Effect of astaxanthin and astaxanthin formula on thrombotic risk factors in type 2 DM patients

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**Background:** Macrovascular complications are the major causes of death among diabetic patients, and hyperglycemia-induced