

**Conclusion:** This study indicates school-based lifestyle education on risk of diabetes and obesity will benefit to children and adolescents. It emphasizes the priority of health education on diabetes and its risk factors prevention in school settings.

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#### PO315

##### WEIGHT CHANGE IN ASSOCIATION WITH INCIDENCE OF TYPE 2 DIABETES IN QINGDAO ADULT, CHINA

F. Ning<sup>1</sup>, S.J. Wang<sup>1</sup>, Y.M. Wang<sup>2</sup>, J.P. Sun<sup>3</sup>, L. Zhang<sup>4</sup>, W.G. Gao<sup>5</sup>, H.R. Nan<sup>6</sup>, Q. Qiao<sup>7</sup>, Z.C. Pang<sup>1</sup>. <sup>1</sup>Qingdao Centers for Disease Control and Prevention, <sup>2</sup>Qingdao Sixth People's Hospital, <sup>3</sup>Qingdao Centers for Disease Control and Prevention, <sup>4</sup>Qingdao Endocrinology & Diabetes Hospital, Qingdao, China; <sup>5</sup>University of Helsinki, Helsinki, Finland; <sup>6</sup>University of HongKong, HongKong, China; <sup>7</sup>University of Helsinki, Helsinki, Finland

**Background:** Cross-sectional studies have reported risk factors and prevalence of type 2 diabetes. Incidence rates and risk factor for type 2 diabetes in Chinese populations are not well known. The aim of this study was to evaluate the impact of weight change and other risk factors on incident type 2 diabetes in Qingdao, China.

**Method:** The population-based prospective cohort study was based on subjects aged 35-74 years who participated in Qingdao Diabetes Survey in 2006. The subjects were free of diabetes at baseline. A total of 1,294 subjects attended the follow up survey between 2009 and 2011. Diabetes diagnosis was classified according to the World Health Organization and International Diabetes Federation 2006 criteria. A logistic regression was built using the backward stepwise selection to assess effect of the risk factors on incident type 2 diabetes.

**Result:** During a 4-year follow up, 120 cases of incident type 2 diabetes was identified, with cumulative incidence of diabetes of 11.8%. Participant who developed type 2 diabetes were significantly older, have significantly higher age-adjusted BMI, waist circumference, systolic blood pressure and total cholesterol than subjects who remained without diabetes both in urban and rural areas. Among individuals without diabetes at baseline, age, living in rural areas, baseline BMI and weight change contributed to the development of diabetes independently. The multivariate adjusted relative risk (95% CIs) for incidence of diabetes were 1.45 (1.13-1.87), 1.93 (1.12-3.34), 1.46 (1.05-2.03) and 1.49 (1.18-1.88), respectively, for a one standard deviation increase in continuous variables. Compared with the reference group of non obese and weight stable, that with weight loss >5% and BMI <28 kg/m<sup>2</sup> was independently associated with a 64% (RR 0.33, 95% CI 0.11, 0.97) reduction in the risk of type 2 diabetes, while BMI >28 kg/m<sup>2</sup> increase risk across the weight change levels. Similar trends were observed in higher baseline waist and weight gain.

**Conclusion:** This study confirms the critical importance of obesity in the development of type 2 diabetes. Baseline BMI and weight gain are independent predictors of type 2 diabetes. It supports current public health to reduce the risk of type 2 diabetes by preventing weight gain and promoting health lifestyle.

#### PO316

##### IMPACT OF GESTATIONAL DIABETES MELLITUS ON PREGNANCY OUTCOMES IN JAPANESE WOMEN

S. Nomachi<sup>1</sup>, H. Watanabe<sup>1</sup>, Y. Honda<sup>2</sup>, S. Fukuda<sup>2</sup>, Y. Sato<sup>2</sup>, T. Sugiyama<sup>3</sup>. <sup>1</sup>Children and Women's Health, Osaka University, Suita, <sup>2</sup>Obstetrics & Gynecology, Sato Hospital, Takasaki, <sup>3</sup>Gynecology & Obstetrics, Tohoku University Graduate School of Medicine, Sendai, Japan

**Background:** Gestational diabetes mellitus (GDM) is defined as a glucose intolerance of any degree diagnosed or first

recognized during pregnancy with or without remission after the end of pregnancy. In 2010, the criteria for diagnosing GDM proposed by the international Association of Diabetes in Pregnancy Study Group were adopted in Japan. The incidence of GDM consequently increased four-fold as compared to diagnosis using the previous criteria. GDM is significant in that it poses a risk to the pregnant woman and her baby. The purpose of this study was to evaluate pregnancy outcomes for gestational diabetes mellitus in Japanese women.

**Method:** This study was conducted in obstetric hospital in Japan from January 2013 to August 2014. A total of 171 subjects were evaluated for GDM at 24 to 28 weeks gestation. Of 171 subjects, 53 were diagnosed with GDM, while 118 were non-GDM group. The date collected included pre-pregnancy BMI, maternal age, parity, gestational weight gain, blood pressure, delivery characteristics (gestational age at delivery, vaginal delivery or caesarean section), cord blood pH, neonatal birth weight, sex, hypoglycemia and hyperbilirubinemia. A large-for-gestational-age (LGA) defined as large for gestational age, with a birth weight above the 90<sup>th</sup> percentile. All statistical analyses were performed using the statistical software, SPSS Version 21 for Windows. This study was approved by the ethics committee of Shiga University of Medical Science, Japan.

**Result:** Pre-pregnancy BMI were significantly associated with the GDM group ( $p < 0.05$ ). No significant difference was observed between the two groups in terms of maternal age, parity, and gestational weight gain. The cesarean section rate was significantly higher in GDM women than in non-GDM women (41.5% vs 12.6%,  $p < 0.01$ ). With regard to neonatal outcomes, the LGA rate and the prevalence of hyperbilirubinemia were significantly higher in GDM women than in non-GDM women (28.3% vs 8.8%,  $p < 0.01$ ; 9.4% vs 1.9%,  $p < 0.05$ ).

**Conclusion:** GDM has been associated with the prevalence of cesarean section, neonatal LGA and hyperbilirubinemia, and for this reason, medical care providers should exercise tighter control over women with GDM from a medical perspective.

#### PO317

##### ARE THERE ANY CORRELATIONS BETWEEN RATIO LDL-C/HDL-C AND LIPOPROTEIN(A) WITH INSULIN RESISTANCE IN TYPE 2 DIABETES PATIENTS WITH ABDOMINAL OBESITY?

H. Novida<sup>1</sup>, S. Murtiwi<sup>1</sup>, A. Tjokroprawiro<sup>1</sup>, A. Pranoto<sup>1</sup>, A. Sutjahjo<sup>1</sup>, S. Adi<sup>1</sup>, S. Wibisono<sup>1</sup>. <sup>1</sup>Surabaya Diabetes and Nutrition Center Dr. Soetomo Teaching Hospital-Faculty of Medicine Airlangga University, Surabaya, Indonesia

**Background:** Obesity and diabetes have recently become so prevalent across the world that it is replacing undernourishment and infectious disease. Dyslipidemia is another risk factor for metabolic syndrome and on the other hand, dyslipidemia is also associated with insulin resistance. Increased low density lipoprotein cholesterol (LDL-C) are atherogenic, whereas increased of high density lipoprotein cholesterol (HDL-C) is considered cardioprotective. The ratio of LDL-C to HDL-C is currently advocated to estimate the risk of coronary artery disease. Insulin resistance and Lipoprotein(a) (Lp(a)) also have been proposed as independent risk factor of cardiovascular disease. The relationship between type 2 diabetes, an insulin resistant condition with Lp(a) concentration and also ratio lipoprotein remains controversial. The aim of this study is to analyze the correlation of ratio LDL-C/HDL-C and Lp(a) with insulin resistance in type 2 diabetes patients with abdominal obesity.

**Method:** We analyzed 78 patients with type 2 diabetes and abdominal obesity consisting of 54 male and 24 female patients using cross sectional observational design. Blood pressure, body weight, height and waist circumference (WC) were measured and body mass index (BMI) were calculated.

Abdominal obesity was defined by WC >80 cm in women and >90 cm in men. We measured fasting plasma glucose (FPG) and post prandial glucose (PPG), HbA1c, total cholesterol (TC), LDL-C, HDL-C, ratio LDL-C/HDL-C, triglyceride (TG), Lp(a) and basal insulin. Insulin resistance can be assessed by using homeostasis model assessment (HOMA) from fasting serum insulin concentration. HOMA of insulin resistance (HOMA-IR) is a simple, inexpensive and non-laborious technique. Data was statistically analyzed using logistic regression test.

**Result:** The mean age of the patients in this study was 57.47±11.04 years old, with duration of diabetes was 8.38±1.64 years. The average BMI in this study was 29.52±3.73 kg/m<sup>2</sup>. The overall mean of FPG in these patients was 181.19±72.52 mg/dL, while PPG was 263.63±115.87 mg/dL and HbA1c was 9.66±8.03%. Lipid profile of the patients showed the average level of TC was 199±50.99 mg/dL, LDL-C was 124.45±36.49 mg/dL, HDL-C was 43.95±10.21 mg/dL, ratio LDL-C/HDL-C was 2.94±1.01 mg/dL, TG was 189.39±168.88 mg/dL and Lp(a) was 20.10±3.96 mg/dL. The mean of fasting insulin level in this study was 24.55±5.85 uIU/mL and HOMA-IR 4.28±2.26. Statistical test showed that there was no significant correlation between ratio LDL-C/HDL-C and Lp(a) with HOMA-IR (r 0.012; p 0.91 and r 0.126; p 0.271).

**Conclusion:** Ratio LDL-C/HDL-C and Lp(a) levels did not correlate with insulin resistance in type 2 diabetes patients with abdominal obesity.

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#### PO318

##### CURRENT CLINICAL STATUS AND VASCULAR COMPLICATIONS AMONG PATIENTS WITH TYPE 2 DIABETES MELLITUS AT SEMARANG DISTRICT HOSPITAL, CENTRAL JAVA, INDONESIA

D. Novitasari<sup>1</sup>, T.G.D. Pelayun<sup>2</sup>, K.H. Nugroho<sup>2</sup>. <sup>1</sup>Department of Internal Medicine, Medical Faculty Diponegoro University Semarang, Semarang District Hospital, Central Java, <sup>2</sup>Kariadi General Hospital, Semarang, Indonesia

**Background:** Diabetes Mellitus (DM) is now one of the most common chronic diseases. Various epidemiological studies have shown an increasing number of patients with type 2 diabetes worldwide, including in the city of Semarang, Central Java, Indonesia. This study was aimed to assess diabetic vascular complications and comorbidity among type 2 diabetic patients attending at Outpatient Clinic Semarang District Hospital, Central Java Indonesia.

**Method:** This cross sectional study was conducted among 114 patients diagnosed with type 2 diabetes mellitus (T2DM) at tertiary referral hospital in Indonesia (Outpatient Clinic of Semarang District Hospital) between April until June 2014. Data regarding gender, age, macro- and microvascular complications, family health history, blood pressure, anthropometric indices, glycaemic control, and lipid profile were obtained from medical records, face-to-face interview and physical examination. We also asked about the types of drugs consumed.

**Result:** The mean age of patients was 58.5±9.9 years, mean diabetes duration was 6.8±5.9 years, and females were 57.9%. Approximately 28.1% patients had cardiovascular disease (CVD). There were prevalence of established cerebrovascular disease (2.6%) and peripheral vascular disease (7.9%). Peripheral neuropathy, diabetic nephropathy and retinopathy were present in 30.7%, 2.6% and 76.3% patients respectively. The overall prevalence of hypertension was 7.9%, obesity and hypertension was 4.4% and metabolic syndrome was 57%. Based on treatment regimen, 56 patients (49.1%) were using Oral Hypoglycaemic Agents. and 38 patients (33.3%) using Insulin. From the group of Insulin, 18.4% were Basal Insulin, 6.1% were Post Prandial Insulin and 20.2% were Mixed Insulin. On group using Oral Hypoglycaemic Agents, the distribution were as follow Metformin 62 patients (54.4%), Sulfonylureas 46 patients (40.3%), Acarbose 15 patients (13.2%) and DPP 4 inhibitors 1 patients (0.9%). The data also showed that 81.6% patient adherence to regular follow up and 88.6% adherence to undergo regular laboratory test.

**Conclusion:** Diabetic patients attending at our Outpatient Clinic predominantly women aged above 60 year. Mostly patients treated using Oral Hypoglycaemic Agents. The high prevalence complication was retinopathy. Diabetic patients who have comorbidities are numerous enough that 69.1%. Diabetic vascular complications were highly prevalent among the type 2 diabetic patients. Cardiovascular risk factors control was remain. Both awareness and application of recommended guidelines need to be reinforced.

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