value (NPV) and overall diagnostic accuracy) were calculated at the patient, vessel and segment level. **RESULTS:** This systematic review included 28 studies. The base case meta-analysis at the patient-level indicated a sensitivity of 98.2%, specificity of 81.6%, PPV of 88.9%, NPV of 96.8%, and diagnostic accuracy of 91.6%. In all vessels, the pooled sensitivity was 95.0%, specificity 85.2%, PPV 69.4%, NPV 97.9%, and diagnostic accuracy 87.7%. At the individual artery level, overall diagnostic accuracy appeared to be slightly higher in the left and right coronary artery and slightly lower in the left anterior descending and circumflex artery. In all segments, the sensitivity was 91.1%, specificity 94.3%, PPV 65.7%, NPV 98.9%, and overall diagnostic accuracy 94.0%. **CONCLUSIONS:** The high sensitivity observed in this update indicates that CTA can effectively identify the majority of patients with significant coronary artery stenosis. The high NPV at the patient, vessel and segment level establishes CTA as an effective noninvasive alternative to ICA for the exclusion of stenosis.

PODIUM SESSION II: DIABETES STUDIES

DB1

EVALUATING THE COST-EFFECTIVENESS OF THERAPY CONVERSION FROM BASAL INSULIN TO BIPHASIC INSULIN ASPART 30/70 IN PATIENTS WITH TYPE 2 DIABETES IN CHINA: A MODELING STUDY OF LONG-TERM COSTS AND HEALTH OUTCOMES

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OBJECTIVES: To evaluate the long-term cost-effectiveness of switching from basal insulin to biphasic insulin aspart 30 (BIAsp30) in patients with type 2 diabetes (T2D) in China. **METHODS:** A published and validated computer simulation model of diabetes (CORE Diabetes Model) was used to project long-term (30 years) of health and economic outcomes. Simulated cohorts and treatment effects were derived from a 16-week, multi-center, and single-arm trial-NCT00669864 which investigated the efficacy and safety of BIAsp30 ± Metformin in T2D patients inadequately controlled with basal insulin. Two subgroups of basal insulin treatment were categorized as insulin glargine (IGla) ± Metformin and neutral protamine hagedorn (NPH) insulin ± Metformin. The market retail prices of medications were calculated to estimate treatment costs. The diabetes management and complications costs were obtained from Chinese published data. An annual discounting rate of 3% was used for both costs and health outcomes. One-way sensitivities analysis was performed. **RESULTS:** Therapy conversion to BIAsp30 was projected to improve life expectancy significantly in comparison with IGla (0.347 ± 0.245 years), and NPH (0.452 ± 0.242 years). Transfer to BIAsp30 was associated with improvements in 0.327 quality-adjusted life-years (QALYs) over IGla, and 0.393 QALYs over NPH. Therapy conversion to BIAsp30 reduced medical costs by Chinese Yuan (CNY) 46,540 per patient compared to IGla. However, it increased CNY 19,525 compared to NPH and was associated with an incremental cost-effectiveness ratio of CNY 49,730 per QALY gained. **CONCLUSIONS:** Therapy conversion from basal insulin to BIAsp30 in T2D patients in China was associated with improvements in life expectancy and QALYs. Transfer to BIAsp30 was cost-saving treatment strategy in T2D patients managed with IGla, and would be considered cost-effective in T2D patients managed with NPH, given a willingness-to-pay threshold of CNY 75,375 per QALY (three times GDP per capita in 2009) gained in China.

DB2

TRANSLATION AND VALIDATION OF MICHIGAN DIABETES KNOWLEDGE SCALE INTO MALAYSIAN VERSION

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OBJECTIVES: To translate the Michigan Diabetes Knowledge Scale (MDKT) into the Malaysian language, and to examine the psychometric properties of the Malaysian version of the MDKT among patients with type 2 diabetes, including its validity and reliability. **METHODS:** After obtaining permission, a standard "forward-backward" translation procedure was used to create the Malaysian version of the MDKT from the original English version. A convenience sample of 307 outpatients with type 2 diabetes was identified between May and October, 2009. All data were collected from the Penang General Hospital, Penang, Malaysia. Instruments consisted of the Malaysian version of MDKT and a socio-demographic questionnaire. Medical records were reviewed for hemoglobin A1C (HbA1C) levels and other clinical data. Reliability was tested for internal consistency using Cronbach's α coefficient. Validity was confirmed using known group validity. **RESULTS:** Employing the recommended scoring method, the mean ± SD of MDKT scores was 7.88 ± 3.01. Good internal consistency was found, (`s $\alpha = 0.702$), the test–retest reliability value by using Spearman's rank correlation was 0.894 ($P < 0.001$). For known group validity, a significant relationship between MDKT categories and HbA1c categories ($\times 2 = 21.626$; $P \geq 0.001$) was found. **CONCLUSIONS:** The MDKT can be used for diabetes knowledge assessment in diabetes. The findings of this validation study indicate that the Malaysian version of the MDKT is a reliable and valid measure of medication adherence which can now be used in clinical and research practice.

DB3

LIFETIME CLINICAL PROJECTIONS FOR OVERWEIGHT OR OBESE SUBJECTS WITH IMPAIRED GLUCOSE INTOLERANCE BASED ON THE LONG TERM RESULTS OF THE DIABETES PREVENTION PROGRAM AND DIABETES PREVENTION PROGRAM OUTCOMES STUDY

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OBJECTIVES: Metformin and intensive lifestyle interventions (ILI) were shown to reduce incidence of type 2 diabetes (T2D) versus standard care in overweight or obese subjects with impaired glucose tolerance (IGT) in the Diabetes Prevention Program (DPP) trial and Diabetes Prevention Program Outcomes Study (DPPOS), a total follow-up of 10 years. Our aim was to project the lifetime clinical outcomes to be expected from T2D prevention in high-risk subjects treated with standard care, metformin or ILI, based on the results from the DPP + DPPOS. **METHODS:** A semi-Markov, second-order Monte Carlo model was developed to project the 10-year clinical results of the DPP + DPPOS to patient lifetimes. Specifically, we calculated years free of T2D, cumulative incidences of T2D, and nondiscounted life expectancies in subjects who were initiated on diabetes prevention regimens based on metformin, ILI or standard care. Four health states were modeled: normoglycemia (NG); IGT; T2D and dead. Subjects started in IGT and progressed to T2D or NG, at rates dependent on the treatment received. State-specific mortality rates for NG, IGT or T2D were used. Univariate and probabilistic sensitivity analyses were performed. **RESULTS:** For standard care, metformin or ILI, mean (standard deviation) number of years free of T2D were 9.47 (0.08), 11.98 (0.09), 15.17 (0.11) years respectively. Cumulative incidences of T2D were 89.7% (0.2), 83.7% (0.2) and 73.4% (0.3%) for standard care, metformin or ILI respectively. Mean life expectancies from baseline age of 50 years were 27.64 (0.14), 27.95 (0.12), 28.33 (0.11) years for standard care, metformin or ILI respectively. Results were most sensitive to the relative risk reduction in the incidence of T2D and relative risks of mortality in the T2D state versus IGT state. **CONCLUSIONS:** Substantial improvements in lifetime clinical outcomes can be expected in high risk subjects treated with metformin or ILI to delay or prevent the onset of T2D.

DB4

ECONOMIC EVALUATION OF THIAZOLIDINEDIONES AS ADD-ON THERAPY FOR TREATMENT OF TYPE 2 DIABETIC PATIENTS IN THE TAIWANESE NATIONAL HEALTH INSURANCE SYSTEM

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OBJECTIVES: The cost-effectiveness of adding thiazolidinediones (TZDs), rosiglitazone or pioglitazone, to metformin in treating type-2 diabetes mellitus was assessed from a Taiwanese national health insurance perspective. **METHODS:** This analysis was based on patient-level data extracted from the 2000–2005 Taiwan's National Health Insurance (NHI) databases. Type 2 diabetic patients who had their first ambulatory visits with a diagnosis of diabetes mellitus and had received consecutive metformin treatments between 2001 and 2005 were identified. Clinical effectiveness, a proxy of glycemic control (time to insulin dependence), and direct medical cost also were estimated from the NHI databases. Incremental cost-effectiveness ratio (ICER) was calculated and expressed as cost per delayed year to insulin dependence. **RESULTS:** The use of TZDs as add-on therapy compared non-TZDs add-on therapy was associated with a delay in time to insulin dependence, rosiglitazone was associated with an additional 151 days (0.41 years) and pioglitazone was associated with an additional 101 days (0.28 years) of delay in insulin dependence. During the follow-up period, total mean medical costs were higher in patients who received an add-on rosiglitazone (New Taiwan dollars (NT) 153,162) or pioglitazone (NT 139,931) compared to add-on non-TZDs (NT 113,492) and the additional medical costs were driven primarily by diabetic medication cost and outpatient visit costs. Combining the cost and effectiveness results, the ICER showed that the additional total medical costs of add-on rosiglitazone or pioglitazone were comparable, with ICERs of 95,874 and 95,485 NT dollars per year delay in insulin dependence, respectively. **CONCLUSIONS:** This analysis suggests that add-on rosiglitazone or pioglitazone improves glycemic control but also increases direct medical costs compared with add-on non-TZDs when used in type-2 diabetic patients. In terms of the incremental medical costs associated with these clinical benefits, add-on rosiglitazone or pioglitazone are similar in the National Health Insurance system in Taiwan.

PODIUM SESSION II: DATABASE STUDIES

DS1

ESTIMATING ADHERENCE AND PERSISTENCY OF ANTIDEPRESSANTS USING THE KOREA NATIONAL HEALTH INSURANCE CLAIMS DATABASE

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OBJECTIVES: To investigate adherence and persistence of antidepressants (ADs) among the patients with depression in Korea. **METHODS:** Using the Korean Health Insurance Review & Assessment Service (HIRA) claims database (2006–2008), patients aged 18–84 with at least one inpatient or two outpatient diagnoses of depres-