of 0.34 mg/kg/week; and showed a median height of 110.3cms (-2.5 SDS [Tanner]) at baseline. Likewise, girls reached a median height of 117.4cms (-1.9 SDS [Tanner]) at the end of the first year and 125.2cms (-1.6 SDS [Tanner]) at the end of the second year; which represents an improvement of over 20% growth compared to girls with TS without GH therapy. **CONCLUSIONS:** Due to an earlier initiation of treatment in Colombian girls compared to global reported data (at 9.7 years), GH achieved at the end of 4 yrs better increments of 8.6cm for the Colombian cohort versus 7.2cm in global cohort.

**PDB14**

**ASSESSING TREATMENT SUCCESS OF DIABETES THERAPIES - NUMBER NEEDED TO TREAT TO REACH A CLINICALLY RELEVANT COMPOSITE OUTCOME:** USING A META-ANALYSIS OF THE LIRAGLUTIDE CLINICAL TRIAL PROGRAM

**Langer J1, Bouche R2, Wiznitzer A3**

**OBJECTIVES:** The ADA/EASD Consensus Panel recommends an individualized treatment strategy for patients with type 2 diabetes mellitus (T2DM) based on safety, tolerability, and ease of use. A challenge in the management of T2DM is to maximize glycemic control while minimizing side effects, such as weight gain and hypoglycemia. A clinically relevant composite endpoint of HbA1c<7%, no weight gain, and no hypoglycemia may be useful for evaluation of diabetes treatments. The objective is to estimate the Number Needed To Treat (NNT) using this composite endpoint, across all seven RCTs in T2DM patients in the liraglutide clinical trial program. **METHODS:** The findings of a recently conducted meta-analysis (Zinman et al. 2012) from seven trials (N=4665) at week 26 in the liraglutide clinical trial program were used to calculate the NNT to achieve the composite endpoint of HbA1c<7%, no weight gain and no hypoglycemia for liraglutide vs. comparator therapies and placebo. Logistic regression on the intent-to-treat population using the last observation carried forward was used. The NNT was calculated as 1/Absolute Relative Effect (ARE) - 1/Relative Risk Reduction (RRR) - 1/Number Needed to Treat (NNT). ARE reflects the incidence difference in the percent of patients achieving the composite endpoint with liraglutide vs. the comparator therapy or placebo. **RESULTS:** The calculated NNT values for liraglutide 1.2 mg ranged from 3.8 (vs. rosiglitazone) to 4.8 (vs. sitagliptin) and from 2.9 (vs. rosiglitazone) to 6.7 (vs. exenatide) for liraglutide 1.8 mg. The NNT across all comparators for liraglutide 1.2 mg was 3.8 vs. rosiglitazone, 4.2 vs. gliclizide, 4.2 vs. placebo and 4.8 vs. sitagliptin. For liraglutide 1.8 mg the NNT was 2.9 vs. rosiglitazone, 3.1 vs. gliclizide, 3.1 vs. placebo, 3.4 vs. sitagliptin, 4.0 vs. insulin glargine and 6.7 vs. exenatide. Across the seven phase 3 trials in the liraglutide clinical trial program, the calculated NNT suggests that liraglutide provides clinically meaningful benefits in T2DM.

**PDB15**

**INITIATION OF INSULIN OCCURRED MORE FREQUENTLY AND EARLIER IN OLDER PATIENTS WITH TYPE 2 DIABETES TREATED WITH INITIAL SULFONYLUREA MONOTHERAPY THAN WITH METFORMIN**

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**OBJECTIVES:** This study evaluated glycemic control after basal insulin initiation among patients with type ii diabetes mellitus (T2DM). **METHODS:** A retrospective analysis was conducted using electronic medical records (EMR) from General Elect (GE) health care. Adult patients with T2DM who initiated basal insulin between February 2006 and August 2009 were selected, and the date of insulin initiation was set as the index date. The proportion of patients reaching fasting plasma glucose (FPG) target (FPG between 70-130 mg/dL) and glycated hemoglobin (HbA1c) target (HbA1c<7%) were reported. Time to reaching FPG and HbA1c targets was assessed, and Cox proportional hazard models were established to identify associated demographic and clinical factors. **RESULTS:** A total of 1473 patients (mean age 63.0 yrs, 51.3% female) were identified. Of them, 12% had baseline HbA1c ≤ 6.5%, 7% had 6.5 < HbA1c ≤ 7.3%, 23% had 7 < HbA1c ≤ 8, 21% had 8 < HbA1c ≤ 9, and 37% had HbA1c > 9. A higher proportion of patients reached the FPG target than the HbA1c target (52% vs. 45%) 12 months after insulin initiation. Patients reached the FPG target median of 337 days, 95% CI: 300-375 and the HbA1c target (median: 490 days, 95% CI: 400-587). There was a greater variation in time to reaching the HbA1c target than the FPG target across groups of patients with different baseline HbA1c values. Baseline HbA1c level was the main factor influencing the time to reaching FPG or HbA1c target, with higher baseline HbA1c values associated with longer time to reaching glycemic goals. **CONCLUSIONS:** About half of the patients with T2DM reached the glycemic goal after initiating basal insulin. Patients reached the FPG target sooner than the HbA1c target.

**PDB17**

**USING A NOVEL, GRAPHICAL METHOD TO ANALYZE COMPLEX TREATMENT PATTERNS FOR PATIENTS WITH ACROMEGALY**

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**OBJECTIVES:** Acromegaly is a rare, slowly progressing disorder resulting from excess growth hormone. It is characterized by skeletal and soft-tissue enlargement, associated risk of adverse outcomes, and a complex, involving medications, surgery, and radiotherapy, and there are limited published data on treatment patterns. We used a novel graphical method to analyze treatment patterns in acromegaly. **METHODS:** Combining two major US claims datasets (Thomson Reuters MarketScan and IMS Health PharMetrics), we studied a prospectively collected cohort of new acromegaly patients first treated between July 1, 2002-December 31, 2009. Patients were followed for 6 months to 3 years, from first treatment until either end of enrollment or 6/30/10. We analyzed treatment patterns using an innovative method which produces high-resolution images combining thousands of individual patient histories. These images used multi-colored line segments to represent different treatments. Images were reviewed for segment length and changes in patterns to evaluate treatment patterns over time. We compared graphical results to summary statistics. **RESULTS:** We identified 2,072 newly treated acromegaly patients. First observed treatment was surgery in 733 patients (36.2%), pharmacologic therapy in 1,203 (59.3%) and radiation in 91 (4.5%). Octreotide acetate long-acting (LAR) for injection was the first treatment in 173 patients (8.5%). Most users initiated therapy at 10-20mg/month (p<0.141, 81.5%). Among these, 47 (33.3%) increased octreotide dose or switched to other treatments in the follow-up period. Second treatment was octreotide 30mg/month in 39 (83.0%), 40mg/month in 7 (14.9%), and surgery in 1 (2.1%). Graphical analysis revealed patterns of treatment switching and medication persistence that differed depending on the initial therapy; multiple images from this analysis will be presented. **CONCLUSIONS:** Invasive treatments appeared less common than pharmacologic therapy as initial acromegaly treatments. Most octreotide LAR for injection users remained on their initial therapy without dose or treatment changes during observation. Graphical analysis provided detailed insights not immediately apparent in summary statistics.

**PDB18**

**VALIDATION OF A DIABETES MODELING FRAMEWORK**

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**OBJECTIVES:** To validate outcomes from a diabetes model through comparison to results reported in trials published in the peer-reviewed literature. **METHODS:** Computer simulation models that estimate the impact of interventions on behalf of patients with diabetes are pivotal tools in improving care and evaluating place in therapy and cost-effectiveness of new treatments. The model was developed using the latest, best available evidence from the literature. It includes a set of complication submodels, a continuous-time HbA1c model, and a treatment model that can replicate recently published consensus algorithms. Additionally, the model incorporates treatment specific adverse events, patient adherence to therapy, and estimates of the patient population with a durable response. Random sampling from distributions from trial cohort characteristics is performed to build a patient profile. Each patient is simulated over the trial timeframe. Complications included: macrovascular (coronary heart, cerebrovascular, peripheral vascular disease, congestive heart failure), microvascular-stroke, microvascular (renal + neuropathy + retinopathy), mortality, and overall complications rates. Scatter plots of the model predicted results versus the results reported for numerous trial populations in the literature (including 7 studies from ACCORD, ASPIEN, and ADVANCE) were constructed. Linear regression estimates were calculated with adjusted correlation coefficients as an estimate of model validity. **RESULTS:** The predicted model outcomes were generally acceptably accurate as judged by adjusted correlation coefficients (macrovascular-heart, 0.9118; microvascular-stroke, 0.5388; microvascular, 0.9508; mortality, 0.9808; overall complications, 0.9334). **CONCLUSIONS:** The diabetes modeling framework possesses the necessary flexibility to perform broad population analysis and important subgroup analyses. The validation exercise, in which the model simulates published cohorts, adequately predicts observed rates of complications.