RESULTS: The presence of diabetes-related co-morbidities, notably neuropathy predicted overall TS and 3/5 domains (p < 0.05). Retinopathy impacted Device Satisfaction, age was related to Lifestyle Flexibility (p < 0.05). No other baseline patient/disease characteristic impacted TS. Lowered HbA1c impacted overall TS, and 3/5 domains (p < 0.05). Number of hypoglycemic events impacted Hypoglycemic Control, timing of the event was related to overall TS and all domains (p < 0.001). Weight gain, number of daily injections and treatment group did not impact TS despite the presence of significant treatment group difference. When all significant factors were examined together, HbA1c reduction and neuropathy maintained their impacts on TS. The impact of the number of hypoglycemic events remained only for Hypoglycemic Control, while timing of the hypoglycemic event impacted overall TS and 3/5 domains (p < 0.01). CONCLUSION: Contrary to clinical wisdom, the number of daily injections and treatment group did not always exert the same significant influence when assessed in combination with other factors. Clinicians should judge the balance between positive and negative treatment outcomes before considering treatment options.

ENDOCRINE DISORDERS

PEN1

DETERMINATION OF THE TOTAL COST OF DIAGNOSTIC PROCEDURE BY FINE NEEDLE ASPIRATION CYTOLYSIS IN PATIENTS WITH THYROID NODULES

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OBJECTIVES: The prevalence of thyroid nodules is high with four to seven percent in the general population. Fine-needle aspiration cytology (FNA-t) is recommended as the reference test because it is minimally invasive, presents an optimal positive predictive value and is cost-effective when compared to whole-body-scan (WBS). The diagnosis is known for the fraction of patients operated. Suspicious findings are a dilemma. For benign and indeterminate results, a long-term follow-up delayed the time of diagnosis. This study aims to determine the total cost of a true diagnosis by FNA-t. The model takes account of false-positive, false-negative, suspicious and indeterminate results.

METHODS: A Markov model was built describing the trajectory and the management of patients, from the first FNA-t and until a conclusive diagnosis was obtained. We derived estimates for patient, diagnostic accuracy values and follow-up from a retrospective study, including patients who had their first FNA-t in 2003 or 2004. Costs were computed from the viewpoint of the hospital. A microcosting study was assessed to determine the unit cost of FNA-t. Costs of hospital stay for surgery were extracted from the hospital cost accounting. Sensitivity analyses were performed.

RESULTS: A total of 105/390 patients were operated. Specificity and sensitivity values were respectively 86% and 78%. The unit cost of FNA-t was estimated at €118. Markov modeling showed that the mean total cost of a true diagnosis was €997 per patient, including unnecessary surgeries, FNA-t and follow-up. Cost decreased with the capacity of the cytologist to minimize indeterminate results. CONCLUSION: The true cost of a given procedure exceeds its unit cost of production. This result is conditional to the performance of the cytologist and is highly dependent on the 29% of indeterminate results. Ultrasound-guidance would reduce this rate and the true cost by a great deal at a relatively low unit cost.

COST COMPARISON OF HUMAN GROWTH HORMONE DELIVERED VIA PEN DEVICES VERSUS VIAL/SYRINGE IN ADULT PATIENTS: A BUDGETARY IMPACT MODEL

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OBJECTIVE: To assess the economic impact to the US payer of recombinant human growth hormone (rHGH) utilization in an adult population. METHODS: rHGH may be administered to pediatric patients via vial/syringe or pen injection systems provided by six manufacturers. Variation in annual drug cost is largely a function of dosing efficiency and price per milligram (mg). A budgetary impact model was developed to calculate drug costs based on product price and cost. Waste was calculated as the difference between prescribed dose, based on patient weight, and actual delivered dose, based on dosing increments and maximum deliverable dose for pens and a fixed percent waste as derived from the literature for vials. Annual drug costs were calculated based upon total mg delivered, using a daily dose of 0.03 mg/kg and wholesale acquisition cost. Total annual drug costs, assuming equal use of vials and pens from each manufacturer, were compared for two scenarios: 1) A mix based on national market share and 2) restricting use to the product with lowest waste. RESULTS: Based on the literature, waste for each method was highest for Humatrope 24 mg (19.5%) and lowest for Norditropin NordiFlex 5 mg (1.1%). Equal use of vials and pens from each manufacturer resulted in the following product waste: Tev-Tropin 23% (vial only), Nutropin 18.4%, Humatrope 14.5%, Genotropin 7.1%, Saizen 4.6%, and Norditropin 3.6%. Restricting use to the product with least waste (Norditropin) resulted in an 11.0% reduction in annual patient cost from $19,196 to $17,089 compared to national share mix. CONCLUSION: Pen delivery systems result in less waste than vial and syringe. Considering all approved delivery systems, Norditropin resulted in the least product waste and lower annual patient cost.