week history of intermittent palpitations, increased irritability, racing thoughts, insomnia, tremors, increased bowel movement frequency, and 8 lbs weight loss despite an excellent appetite. He denied ocular symptoms, and did not have any recent illness, or new stressors. He had been on a stable dose of lithium for four years.

The physical exam was notable for: pulse 78 bpm and regular, exophthalmos, and a palpable, non-tender, non-nodular, thyroid. Labs: TSH 0.008 uIU/ml [0.350 - 5.50], FT3 6.5 pg/ml [2.0 - 4.4], T3 2.08 ng/mL [0.6-1.94] and FT4 1.96 ng/dl [0.8 - 2.7]. TPO, TSI and anti-thyroglobulin antibodies were negative. The lithium level was in the therapeutic range. Thyroid Uptake Scan showed decreased uptake of 2.6 % [normal 10–35%]. He was started on methimazole 20mg daily and atenolol, lithium was changed to risperidone by Psychiatry.

After 2 months, hyperthyroid symptoms had resolved, and he was biochemically hypothyroid (PT4 0.85 ng/dl, TSH 20uIU/ml). Methimazole and atenolol were discontinued, with sustained euthyroid state. Conclusion: Hyperthyroidism may develop after several years of lithium therapy. It may be mistaken for aggravation of mania, or for Grave’s disease, especially since lithium and Graves’ are both associated with exophthalmos. Key issues for management are whether to continue lithium and deciding if the incorporation of antithyroid medications is necessary. Of utmost importance is regular monitoring of thyroid function tests to ensure resolution of thyroiditis and to avoid the development of overt hypothyroidism.

Tumor Biology
ENDOCRINE NEOPLASIA CASE REPORTS I
A Rare Case of Hyperparathyroidism - Parathyroid Carcinoma, Atypical Adenoma, or Both?
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SUN-934
Introduction: Parathyroid carcinoma (PC) is a rare endocrine malignancy. It accounts for <1% cases of primary hyperparathyroidism (PHPT). We present a rare case of concurrent PC and atypical parathyroid adenoma (PA).
Case presentation: A 72-year-old woman presented with a 1-week history of generalized weakness, confusion, and auditory hallucinations. Her medical history was significant for concurrent PC and atypical parathyroid adenoma (PA).

Pediatric Endocrinology
PEDIATRIC SEXUAL DIFFERENTIATION, PUBERTY, AND BONE BIOLOGY
Prospective Clinical Assessment Study in Children with Achondroplasia: The PROPEL Trial
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SUN-093
Background: Achondroplasia (ACH) is the most common non-lethal form of skeletal dysplasia, affecting between 1 in 15,000 to 1 in 30,000 live births [Horton et al. 2007; Waller et al. 2008]. Children and adults with ACH have disproportionate short stature, with a final height of approximately 131 cm for males and 124 cm for females. They are prone to significant co-morbidities, including obstructive sleep apnea, chronic otitis media with conductive hearing loss, spinal stenosis and a propensity towards obesity. In some infants, narrowing of the foramen magnum may result in compression of the spinal cord with neurologic sequelae, requiring timely neurosurgical intervention. There are currently no approved therapies for the treatment of ACH in either the United States or the European Union.
and management is generally supportive in nature. The PROPEL trial is a prospective, non-interventional study examining baseline growth parameters and health status in children with ACH being assessed for potential enrollment into interventional studies with infigratinib, an oral FGFR1-3 inhibitor in development for achondroplasia. 

**Methods:** Children with ACH between the ages of 2.5 and 10 years are eligible for enrollment in this prospective, non-interventional trial to evaluate growth parameters and determine clinical status. Participants will be assessed at baseline, month 3, month 6, and every 6 months thereafter. The primary endpoint is annualized height growth velocity. Secondary endpoints include change from baseline in other growth parameters (including body proportionality); analysis of bone biomarkers (e.g., bone alkaline phosphatase, collagen X fragment); and the occurrence of medical events and surgical procedures. Participants will be enrolled in the study for a minimum of 6 months up to a maximum of 2 years before being considered for enrollment in a QED-sponsored phase 2/3 interventional trial. **Current status:** The PROPEL study is underway with the first patient enrolled in August 2019. Planned total enrollment is 200 children with ACH.

**Pediatric Endocrinology**
**PEDIATRIC SEXUAL DIFFERENTIATION, PUBERTY, AND BONE BIOLOGY**

**FGFR-Selective Tyrosine Kinase Inhibitors, Such as Infigratinib, Show Potency and Selectivity for FGFR3 at Pharmacologically Relevant Doses for the Potential Treatment of Achondroplasia**

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**SUN-087**

**Background:** Germline mutations in fibroblast growth factor receptor (FGFR) genes 1-3 can cause skeletal dysplasias and craniosynostoses. Achondroplasia (ACH), the most common form of disproportionate short stature, is caused primarily by an autosomal dominant G380R substitution in FGFR3 [Horton WA et al. Lancet 2007]. Infigratinib (BGJ398), a potent and selective FGFR1-3 tyrosine kinase inhibitor (TKI), demonstrated preclinical efficacy at low doses in an ACH mouse model [Demuynck et al. 2019; Komla-Ebri et al. 2016]. The objective of this analysis is to evaluate the dose dependency and toxicity profiles of FGFR-selective TKIs like infigratinib in preclinical skeletal dysplasia models. **Methods:** A review of the literature was performed to investigate non-clinical data from studies of infigratinib and other FGFR-selective TKIs relevant to FGFR-driven skeletal dysplasias. Major databases (e.g., PubMed, Medline [NLM Catalog]) were searched for relevant articles from the past 10 years and conference archives (e.g., ENDO, ESPE, ISDS, ASHG, ASBMR) for relevant abstracts from the past 5 years. Full text was included where possible. Key words included in the searches were based on the following: achondroplasia, FGFR inhibition, infigratinib, BGJ398, tyrosine kinase inhibitor. **Results:** Of the 683 publications identified, 10 relevant articles and 2 abstracts were selected for review. Due to direct relevance, 2 additional articles were included, bringing the total to 14 publications. Key results from studies of infigratinib, the most commonly identified TKI, included: FGFR3 IC\(_{50}\) 1.0 nM, FGFR3-K650E IC\(_{50}\) 4.9 nM. In vitro data showed inhibition of FGFR1-3 activity at concentrations of 5 to 100 nM, including reversal of established growth arrest in chondrocytes at 7 nM. In vivo studies revealed dose-dependent improvements in femoral magnesium and long bone length in Fgfr3\(^{Y367C/+}\) mice at doses of 0.2-2 mg/kg/day. No studies reported a survival disadvantage and one showed a significant survival advantage for infigratinib-treated ACH mice. In relation to other FGFR TKIs, one study showed that AZD4547 decreased survival in mice treated at doses of 1x10\(^6\) to 2x10\(^6\) nM, and another showed limb malformation in chicken embryos treated with PD173074 at doses of 1x10\(^6\) to 50x10\(^6\) nM. While one study suggested toxicity with infigratinib and other FGFR-selective TKIs, the results were not produced at pharmacologically relevant doses for ACH nor were they replicated in the literature. Furthermore, in vivo studies reporting treatment in mice with low doses of infigratinib did not result in any of the abnormal findings observed in this study. **Conclusions:** Recent studies indicate preclinical efficacy of infigratinib, including a survival advantage in Fgfr3\(^{Y367C/+}\) mice. Given the totality of evidence, low-dose infigratinib appears to be a potentially safe option for further development in children with ACH.

**Diabetes Mellitus and Glucose Metabolism**
**DIABETES TECHNOLOGY**

**Patient-Centered Glycemic Management of Type 2 Diabetes with Mobile Applications**

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**SAT-637**

**Background:** Ehealth apps have 3.7 billion downloads yearly. The accessibility of diabetes mobile applications allows for patient self-management of diabetes. Renal and cardiovascular complications, which play a role in diabetic patient outcomes, are newly highlighted by the 2019 American Diabetes Association’s Standards of Medical Care in Diabetes. **Purpose:** To evaluate free Android mobile apps using the Diabetes Self-Management Education and Support (DSMES) and the 2019 American Diabetes Association (ADA) guidelines for renal and cardiovascular complications. **Methods:** Using the search term “diabetes,” Google Play store was accessed. Inclusion criteria: 1) Apps with downloads 1M-100,000; 2) free; 3) DSMES criteria; and 4) medication adherence. Exclusion criteria: 1) Purely educational factual apps on diabetes; 2) no ranking or download information. Google displayed a list of 10 free apps in 2019. The 2019 apps were analyzed for DSMES criteria, renal and cardiovascular complications (ADA 2019), and medication adherence via push notification.