pituitary-gonadal axis [FSH (N: 1-11 U/L): 2/21 (9%, 1 high, 1 low); LH (1.8-8 U/L): 1/21 (5%, 0 high, 1 low); total testosterone (N: 262-1593 ng/dL): 4/21 (19%, 0 high, 4 low)]; and growth hormone [3/21 (N: 0 - 3 ng/mL): (14.3%, 3 high, 0 low)]. Of the 28 observed BEAs, 17/28 (61%) were initially noted during cycle 1, 7/28 (25%) during cycle 2, and 4/28 (14%) during cycle 3, and 16/28 (57%) were noted within 48 hours of $^{177}$Lu DOTATATE injection. There was no significant association between the standardized values of adrenals (p=0.28), pituitary (p=0.75), and thyroid gland (p=0.61) on the baseline diagnostic $^{68}$Ga DOTATATE scan and their respective BEAs. One patient developed overt hypothyroidism and was started on levothyroxine, and another patient developed central adrenal insufficiency likely from immunotherapy started after $^{177}$Lu DOTATATE therapy. In all other patients, BEAs were transient and spontaneously resolved. Limitations included the observational nature of the study, lack of data on levels of IGF-1, parathyroid hormone, or hemoglobin A1C. Conclusion: $^{177}$Lu DOTATATE therapy for metastatic PGIL is associated with biochemical abnormalities in endocrine function. Although mostly transient, there is a potential risk for BEAs to be permanent and to manifest clinically. Therefore, serial monitoring of abnormal hormonal values is necessary and treatment should be considered when appropriate. Studies on larger populations with long-term follow-up are necessary to further investigate the incidence of endocrine abnormalities with $^{177}$Lu DOTATATE therapy.

Reproductive Endocrinology

TRANSGENDER MEDICINE AND RESEARCH

Gonadotropin Releasing Hormone (GnRH) Agonist Therapy Induces a Sustained Reduction in Plasma Testosterone Levels and Is Well Tolerated in Transwomen Veterans

Lyan Gondin, MD1, Jonathan Trejo, MD, MPH2, Sheila Pinkson, MPAC1, xi chen, MD, PhD1, Emina Case, HS1, Joy Wortham, MD1, Maureen kops, MD1, Deijit Tripathy, MD,PhD1.

1Univ of Texas Health Science Center, San Antonio, TX, USA.
2UTHSCSA, San Antonio, TX, USA.

SUN-044

Gender affirming hormone therapy (GAHT) is the mainstay of long-term management of transgender individuals. In transwomen, treatment with physiologic doses of estrogen alone is often insufficient to suppress testosterone to the desired level. Although GnRH agonist therapy is usually prescribed for puberty suppression in trans youth, in adult transwomen, GnRH agonist may be added. The durability of long-term GnRH agonist in lowering testosterone as well as the long-term safety is not clear. We examined the effect of leuprolide a GnRH agonist, on testosterone as well as clinical and metabolic features in transwomen Veterans. Out of 91 subjects with gender dysphoria followed at a VA Endocrinology clinic, 65 were transwomen (age 49 ± 3 years) who had a detailed clinical, biochemical and hormonal profile (lipid profile, HbA1c, FPG, testosterone, estradiol). We performed a retrospective cohort study of the 31 (48%) transwomen on Leuprolide (3.375mg q month) and 33 transmen who were not on Leuprolide. Plasma testosterone, lipid profile, were analyzed before, 6 months, 1 year and at the last follow-up visit. The median follow-up of subjects on Leuprolide was 2.7 (1.7-3.8) years. Plasma testosterone concentration declined by 89% from 432±32 ng/dl to 47±9 ng/dl within 3-6 months after initiation of GnRH agonist treatment. Plasma testosterone remained persistently low 39±4ng/dl at 1 year and at the end of 2.7 yrs, most subjects on Leuprolide had plasma testosterone concentration <50ng/dl. Leuprolide therapy led to similar rapid decline in testosterone concentration in both younger (<40yrs) or relatively older (>50yr) transwomen. Leuprolide was in general well tolerated requiring discontinuation in just one patient due to severe fatigue. Three subjects (10%) experienced hot flashes which did not lead to discontinuation of medication. In the non-Leuprolide group, of 33 subjects, the follow-up was relatively inconsistent and only 12 subjects were regularly followed throughout a year with stable treatment. The decline in plasma testosterone was of a lower magnitude versus the leuprolide group (55% vs 89%, p <0.05). The testosterone levels declined from 393±42 to 180±44 ng/dl at 6 months. Body weight, and lipid profile: triglyceride, and plasma HDL concentration did not change significantly with or without GnRH agonist therapy. In conclusion, GnRH agonist therapy led to a sustained suppression of plasma testosterone levels in transwomen and was not associated with worsening lipid profile, was effective, and well tolerated in transwomen regardless of their age and may be considered an adjunct to the ant-androgen and estrogen therapy.

Bone and Mineral Metabolism

BONE DISEASE FROM BENCH TO BEDSIDE

Changes in Bone and Glucose Metabolism in Patients Post Solid Organ Transplant

Keswick Lo, B.S.1, Omer H. Tarar, MD1, Subhashini Yaturu, MD2.
1University of South Carolina, Columbia, SC, USA. 2Dorn VAMC, Columbia, SC, USA.

SUN-367

Introduction: Solid organ transplantation has emerged as a pivotal therapeutic option for various organ failures and has gained more popularity with newer technologies and better immunosuppressive options. However, immunosuppressive therapies for survival of solid organ transplant is also associated with various metabolic complications with changes in bone and glucose metabolism. The aim of our study is to review the changes in bone and glucose metabolism in post solid organ transplant recipient Veterans.

Methods: Single center, retrospective study with subjects who had solid organ transplant conducted at William Jennings Bryan Dorn Veteran Hospital in Columbia, South Carolina. All available subjects who had solid organ transplant between January 1, 2008 till December 31st, 2017 and had at least one post-transplant followed up visit were included. Data was collected from computerized patient record system after approval by Institutional Review board (IRB) and Research and development. Collected data included
age, sex, BMI, Laboratory data, Medications, Bone mineral density (BMD) by DXA, Diabetes status and medications pre and post operatively.

Results:
Data collected include 227 patients with solid organ transplants. Out of those, only 88 had BMD evaluation and only 45 had follow up BMD. Out of 88 with baseline BMD, 16 had osteoporosis, 36 had osteopenia and 36 had normal BMD. Although 51 were on Bisphosphonates, many of them did not have follow up DXA scans. 157 were receiving Vitamin D supplementation but very few had levels checked.

A total of 158 patients had Diabetes, with 95 having pre-existing diabetes and 52 were diagnosed post transplantation. The time of onset was unknown in 11 patients. Majority of patients with pre-existing diabetes required intensification of their medications for diabetes to achieve optimal glycemic control.

Discussion
A multitude of factors including type of transplant, individual pre-operative metabolic profiles, choice of immunosuppressive agents and certain infections increase the risk of these metabolic complications. Given the complex post-operative care, issues with immunosuppressive agents and other comorbidities, metabolic bone disease and other complications may go unnoticed and under recognized which may later lead to higher risk of fractures, morbidity and mortality.

Conclusion
This study highlights the importance of monitoring prudently for metabolic changes after solid organ transplantation. Early identification and aggressive management of these complications may help decrease morbidity and mortality related to fractures and sub-optimal glycemic control.

Thyroid
THYROID NEOPLASIA AND CANCER
Nivolumab-Induced Hypothyroidism Is Irreversible in Most Patients
Jee Hee Yoon, MD, Ji Yong Park, MD, A Ram Hong, MD, Hee Kyung Kim, MD, PhD, Ho-Cheol Kang, MD,PHD.
Chonnam National University Medical School, Gwangju, Korea, Republic of.

MON-499
Background Thyroid dysfunction caused by the immune checkpoint inhibitor (ICPI) is common, however mild dysthyroidism could occur easily in cancer patients due to other causes. The aim of this study was to investigate the incidence and clinical course of ICPI-induced hypothyroidism requiring thyroid hormone replacement. Patients and methods We analyzed baseline and follow up thyroid function tests of cancer patients treated with nivolumab between March 2016 and March 2019 at Chonnam University Hwasun Hospital retrospectively. Results Among 265 cancer patients treated with nivolumab therapy, six patients were excluded from the study because they were on thyroid hormone replacement therapy before starting nivolumab therapy. Twenty-one patients (8.1%) newly developed thyroid dysfunction during nivolumab therapy and sixteen patients (6.2%) required thyroid hormone replacement therapy due to drug-induced hypothyroidism. Cancer diagnoses included lung cancer (n=7), renal cell carcinoma (n=4), malignant melanoma (n=2), hepatocellular carcinoma (n=2), and esophageal cancer (n=1). Six patients (37.5%) showed thyrotoxic phase prior to overt hypothyroidism and the others (n=10, 62.5%) revealed hypothyroidism without thyrotoxic phase. Most ICPI-induced hypothyroidism was irreversible, only one patient was able to discontinue thyroid hormone replacement after quitting nivolumab therapy. Conclusion A significant number of patients treated with nivolumab developed ICPI-induced hypothyroidism requiring thyroid hormone replacement and its clinical course was irreversible in most patients.

Adrenal
ADRENA-L - TUMORS
Adrenocortical Cancer Is Diagnosed at Large Size and Advanced Stage in a Canadian Referral Center; Focus on Modes of Presentation Depending on Stages
Jonathan Poirier, MD, B. pharm, Catherine Alguire, MD, Nadia Gagnon, MD, Mathieu Latour, MD, André Laicroix, MD, Pierre Karakiewicz, MD, Paul Perrotte, MD, Xuan Kim Le, B. Sc. inf, Harold J Olney, MD, Isabelle Bourdeau, MD.
CENTRE HOSP DE L’UNIV MONTREAL, Montreal, QC, Canada.

SAT-169
Context: Adrenocortical carcinoma (ACC) is a rare tumor with an incidence of 0.7-2 per million. Based on the ENSAT staging classification, tumor stage is the most important prognostic factor; the presence of lymph nodes involvement and metastases is an indicator of poor prognosis. Absence of any local or distant tumor invasion represents an early stage disease and is classified based on tumor size of <5 cm (stage I) or >5 cm (stage II). Advanced disease is confirmed if there is tumoral invasion, either locally in the surrounding tissues/nodes (stage III) or in other organs/vascular structures (stage IV).
Objective: To describe patient characteristics, staging and modes of presentation at initial diagnosis in our cohort of ACC patients.
Methods: We retrospectively reviewed paper and electronic charts of patients with pathology-confirmed ACCs who were treated at our referral center from 1995 to May 2019. Results: One hundred four patients were diagnosed with ACC. 28 were men (26.9%) and 76 (73.1%) were women and median age was 51 years. The overall modes of presentation were hormonal hypersecretion (40.4%), mass-related symptoms (36.5%), incidentalomas (17.3%) and unknown (1.9%). Hormonal profile was available for 71 tumors: 67.6% were secreting [androgen and cortisol co-secretion (39.4%), cortisol only (28.2%)] and 18.3% were non-secreting. At initial diagnosis, sixty-four patients (61.5%) had tumors >10 cm including 32.7% between 10-14.9 cm (n:34), 19.2% were 15-20 cm (n:20) and 9.6% were >20cm (n:10). Initial ENSAT stages were I (6.7%), II (17.3%), III (28.8%) and IV (44.2%) and unknown (2.9%). The age repartition was similar for most patients (median ~50 yo) regardless of disease stage or tumor size except in the subgroup of very large tumors (>20 cm) for which the median age was 40 yo. The mode of presentation at initial diagnosis varied at various