separately. DNA separated from these two specimens were analyzed by PCR amplification and both were positive for BRAF mutation. External beam radiation and radioactive iodine therapy were administered after surgery. Given absence of invasion or metastasis adjuvant therapy was not initiated. His positron emission tomography, computed tomography imaging and whole-body scan has been negative for residual/ recurrent or metastatic disease. He remains disease free at 18 months after diagnosis.

Discussion:
Anaplastic thyroid cancer is a rare but highly aggressive tumor. In most cases it develops from a pre-existing well differentiated thyroid cancer. ATC incidence typically peaks at the 6-7th decade of life, predominantly in women. The median survival is between 3 to 9 months with less than 10% of patients alive 3 years after the time of diagnosis. Because of its aggressive behavior, the American Joint Committee on Cancer Staging Manual classifies all Anaplastic thyroid cancer Stage IV tumors. Surgery, chemotherapy and radiotherapy are the conventional therapeutic strategies performed in the attempt to improve survival.

However, incidental anaplastic thyroid cancer is rare variant with very few reported cases. American Thyroid Association (ATA) Guidelines for Management of Patients with ATC do not include specific recommendations for this form of ATC. There is no consensus to define best treatment approach as to whether intrathyroidal incidentally detected ATC is best treated with surgery alone, surgery followed by radiotherapy, or surgery followed by chemotherapy plus radiation therapy.

Conclusion:
Based on review of our case as well as outcomes of similar reported cases, prognosis is favorable for incidental anaplastic thyroid cancer. Hopefully, with more data from similar cases to demonstrate difference in disease free survival we should be able to define the role of chemotherapy and adjuvant therapy for incidental ATC better. The question remains open, as to whether incidental anaplastic thyroid cancer should be considered as a separate entity from aggressive form of ATC.

Diabetes Mellitus and Glucose Metabolism

CLINICAL AND TRANSLATIONAL STUDIES IN DIABETES

Socioeconomic Status, Literacy, and Sex Differences in the Progression of Retinopathy in Patients With Type 2 Diabetes in Tokyo, Japan

Naoya Enoto, MD,PhD1, Akimi Soga, MD2, Izumi Fukuda, MD,PhD2, Kyoko Tanimura-Inagaki, MD, PhD2, Taro Harada, MD2, Hitoshi Sugihara, MD,PhD2, Rei Goto, MD, PhD2

1NMS Chiba-Hokusoh Hospital, Chiba-ken, Japan, 2Graduate School of Medicine, Nippon Medical School, Tokyo, Japan.

MON-LB112

Socioeconomic status has profound effects on glycemic control and diabetic complications in patients with type 2 diabetes. Sex differences are one of the most important factors in socioeconomic status and may vary among countries or areas. The study aim was to determine if sex differences are associated with glycemic control and diabetic complications in Tokyo, Japan, one of the most educated countries in the world. This study initially enrolled 3307 patients treated from 2017 to 2019 at the medical school hospital located in Tokyo. All enrolled patients were asked to complete behavioral and socioeconomic surveys. A total of 276 type 2 diabetic patients (175 males, age 64.1 ± 0.88 y, disease duration 15.2 ± 0.78 y, mean ± SE y; 101 females, age 64.0 ± 1.1 y, disease duration 15.6 ± 1.01 y) agreed to participate in the study. The survey questionnaire has been previously reported in detail (Patient Preference and Adherence, 10:2151-2162, 2016). The questionnaire attempted to determine estimations of risk preference regarding things like

Adrenal

ADRENAL CASE REPORTS III

A Case of Renovascular Hypertension With Cortisol-Producing Adrenal Masses
Takuya Higashitani, MD1, Daisuke Aono, MD2, Mitsuhiro Kometani, MD,PhD3, Shigehiro Karashima, MD,PhD4, Masashi Demura, MD,PhD1, Takashi Yoneda, MD,PhD1, Yoshiyu Takeda, MD,PhD1

1Division of Endocrinology and Hypertension, Department of Cardiovascular and Internal Medicine, Graduate School of Medical Science, Kanazawa University, Kanazawa, Ishikawa, Japan, 2Kanazawa University, Kanazawa Ishikawa, Japan, 3Kanazawa University, Ishikawa, Japan, 4Kanazawa University, Kanazawa, Japan.

MON-LB043

Renovascular hypertension (RVHT) is an important and potentially treatable form of resistant hypertension. Hypercortisolemia could also cause hypertension and diabetes mellitus. We experienced a case wherein adrenalectomy markedly improved blood pressure and plasma glucose levels in a patient with RVHT and subclinical Cushing’s syndrome. A 62-year-old Japanese man had been treated for hypertension and diabetes mellitus for 10 years. He was hospitalized because of disturbance in consciousness. His blood pressure (BP) was 236/118 mmHg; pulse rate, 132 beats/min; and plasma glucose level, 712 mg/dl. Abdominal computed tomography scanning revealed the presence of bilateral adrenal masses and left atrophic kidney. Abdominal magnetic resonance angiography demonstrated marked stenosis of the left main renal artery. The patient was subsequently diagnosed with atherosclerotic RVHT with left renal artery stenosis. Bilateral adrenal masses were immunohistologically identified as potential sites for cortisol overproduction. Therefore, laparoscopic left nephrectomy and adrenalectomy were simultaneously performed resulting in improved BP and glucose levels. Pathological studies revealed the presence of multiple cortisol-producing adrenal nodules and aldosterone-producing cell clusters in the adjacent left adrenal cortex. In the present case, activated renin-angiotensin-aldosterone system and cortisol overproduction resulted in severe hypertension, which was managed with simultaneous unilateral nephrectomy and adrenalectomy.
Diabetes Mellitus and Glucose Metabolism

CLINICAL AND TRANSLATIONAL STUDIES IN DIABETES

Insulin Resistance in Type 1 Diabetes Managed With Metformin (INTIMET): Rationale and Study Design of a Randomised Placebo-Controlled Trial

Jennifer R. Snaith, FRACP, MBBS(Hons), BMedSci1, Dorit Samocha-Bonet, PhD, RD1, Deborah J. Holmes-Walker, FRACP, PhD, MBBS (Hons)2, Jerry R. Greenfield, FRACP, PhD, MBBS1, 1Garvan Institute of Medical Research, Darlinghurst, Australia, 2Westmead Hospital, Westmead, Australia.

MON-LB113

Background: Insulin resistance is an under-recognised cardiovascular risk factor in type 1 diabetes (T1D). Individuals with T1D exhibit insulin resistance relative to those without diabetes. In T1D, tissue-specific insulin resistance (muscle, hepatic, adipose) is likely to partly drive increased cardiovascular risk. Adjunctive metformin improves muscle insulin sensitivity in T1D adolescents, but factors that predict responsiveness remain unknown.

Objective: To report the rationale and design of the INTIMET study, a double-blind randomised, placebo-controlled trial of metformin in T1D.

Methods: Forty adults aged 20-50 years with T1D, and 20 age- and BMI-matched non-diabetic controls will be studied. T1D inclusion criteria are diagnosis > 10 years, HbA1c 9.5% and fasting C-peptide < 0.3nmol/L. Liver and muscle insulin sensitivity will be determined by the 2-stage hyperinsulinenic (20 and 60 mU/m) Euglycemic clamp method with deuterated glucose. Subjects with T1D will be randomised to metformin extended-release 1500mg/d or matched placebo for 26 weeks. The primary endpoint is the change in hepatic insulin sensitivity, measured by suppression of endogenous glucose production (EGP) with the low-dose insulin clamp. Secondary endpoints include change in muscle and adipose tissue insulin sensitivity, arterial stiffness, HbA1c, glucose variability, frequency of hypoglycemia, insulin dose, anthropometry, body composition, lipid profile, liver fat and stiffness.

Conclusion: The INTIMET study will quantify muscle, liver and adipose insulin-resistance in T1D, determine whether metformin is effective in improving insulin resistance in T1D and identify factors that predict metformin responsiveness. The trial is registered (Australian New Zealand Clinical Trial Registry, ACTRN12619001440112) and is actively recruiting in Sydney, Australia.

Adrenal

ADRENAL - TUMORS

Clinical Features, Treatment and Prognosis of Primary Bilateral Macronodular Adrenal Hyperplasia Compared With Unilateral Adrenal Cortisol-Secreting Adenoma: Analysis of 46 Chinese Cases

Qian Zhang, MD1, Haiyong Xia, MD2, Weijun Gu, MD2, 1Department of Endocrinology, The Seventh Medical Center of Chinese PLA General Hospital, Beijing, China, 2Department