

¹Asan Medical Center, University of Ulsan, SEOUL, Korea, Republic of, ²Seoul Medical Center, SEOUL, Korea, Republic of.

SUN-369

Purpose: Despite the general belief that higher fat intake may be harmful for bone health, its impact on bone strength has not been thoroughly studied. **Methods:** We conducted a population-based cross-sectional study derived from the Korea National Health and Nutrition Examination Surveys, including 2,590 participants. Composite indices of femoral neck strength, such as the compression strength index (CSI), bending strength index (BSI), and impact strength index (ISI), were generated by combining bone mineral density, body mass, and height with the femoral axis length and width. **Results:** Dietary fat intake (%) was inversely related to CSI and ISI in men, but not in women. Men in the highest three fat intake quintiles had lower CSI, BSI, and/or ISI than those in the lowest quintile ($P=0.003-0.024$). In women, compared with participants in the third fat intake quintile, those in the other four quintiles had lower CSI, BSI, and/or ISI ($P=0.004-0.049$). When the participants were allocated to three groups according to the dietary reference intake of fat in Koreans [low (<15%), moderate (15–30%), or high ($\geq 30\%$)], men with a moderate or high fat intake had significantly lower ISIs than those with a low fat intake ($P=0.046$ and 0.039 , respectively). By contrast, compared with women consuming a moderate amount of fat, those with a high intake had lower CSI, BSI, and ISI ($P = 0.025-0.047$). **Conclusion:** These findings suggest that higher fat intake in men and low or high fat intake in women may contribute to deteriorations in bone strength.

Cardiovascular Endocrinology

PREVALENCE, DIAGNOSIS, AND MECHANISMS OF HYPERALDOSTERONISM

Efficiency of Adrenal Venous Sampling in the Treatment Choice of Primary Aldosteronism (AVSTAT Study)

Mitsuhide Naruse, MD, PHD¹, Felix Beuschlein, MD², Mirko Parasiliti Caprino, MD, PhD³, Jaap Deinum, MD PhD⁴, William Drake, DM, MRCP⁵, Francesco Fallo, MD⁶, Carmina Teresa Fuss, MD⁷, Marianne Aardal Grytaas, MD PhD⁸, Takamasa Ichijo, PHD, MD⁹, Nobuya Inagaki, MD, PhD¹⁰, Youichi Ohno, MD¹¹, Miki Kakutani, MD¹², Darko Kastelan, MD, PhD¹³, Ivana Kraljevic, MD¹⁴, Takuyuki Katabami, MD¹⁵, Tomaz Kocjan, MD¹⁶, Paolo Mulatero, MD¹⁷, Samuel Matthew O'Toole, PhD¹⁸, Masakatsu Sone, MD, PhD¹⁹, Mika Tsuiki, MD, PhD²⁰, Norio Wada, MD, PhD²¹, Akiyo Tanabe, MD, PhD²², Mauro Maccario, MD, PhD²³, JRAS Study Group, none²⁰.

¹Takeda General Hospital, Kyoto, Japan, ²University Hospital Zurich, Zurich, Switzerland, ³University of Turin, LIVORNO FERRARIS, Italy, ⁴Radboud Univ Nijmegen, Nijmegen, Netherlands, ⁵Saint Bartholomew's Hosp, London, United Kingdom, ⁶Univ of Padova/Clinica Medica 3, Padova, Italy, ⁷Department of Medicine I, Division of Endocrinology and Diabetologie, university Hospital, Wuerzburg, Dettelbach, Germany, ⁸Haukeland University Hospital, Helse-Bergen HF, Bergen, Norway, ⁹Saiseikai Yokohamashi Tobu Hospital, Kawasaki, Japan, ¹⁰Kyoto University Graduate School of

Medicine, Kyoto, Japan, ¹¹Department of Diabetes, Endocrinology and Nutrition, Kyoto University, JAPAN, Kyoto, Japan, ¹²Hyogo Medical University, Hyogo, Japan, ¹³University Hospital Zagreb, Zagreb, Croatia, ¹⁴University Hospital Center Zagreb, ZAGREB, Croatia, ¹⁵St. Marianna University School of Medicine, Yokohama City Seibu Hospital, Yokohama, Japan, ¹⁶DEPT. OF ENDOCRINOLOGY, DIABETES AND METABOLIC DISEASES, Ljubljana, Slovenia, ¹⁷University of Torino, Torino, Italy, ¹⁸St Bartholomew's Hospital, London, United Kingdom, ¹⁹Kyoto Univ Med School, Kyoto City, Japan, ²⁰NHO Kyoto Medical Center, Kyoto, Japan, ²¹Sapporo City General Hospital, SAPPORO, Japan, ²²National Center for Global Health and Medicine, Tokyo, Japan, ²³University of Turin, Endocrinology, Diabetology and Metabolism, Italy.

OR34-04

Background: Adrenal venous sampling (AVS) is strongly recommended for a subtype diagnosis of primary aldosteronism (PA) if adrenalectomy (ADX) is desired by the patient. Given various issues related to AVS such as technical demand, invasive nature, expensive cost and radiation exposure, AVS is expected to lead efficiently to the subtype diagnosis and ADX. **Aim:** Primary objective was to assess the performance of AVS to determine treatment of PA by investigating the ratio of unilateral disease and rate of ADX following AVS in patients with unilateral disease. **Methods:** Sixteen major referral centers in ENS@T (n=10) and Japan (n=6) participated in the study. Study period was from 2006 to 2018. Data on total number of PA patients, AVS (total number and number of successful procedures), number of patients with unilateral diseases, and number of patients that underwent ADX were collected by a questionnaire-based survey. In addition, reasons for not proceeding to ADX in patients with a unilateral diagnosis were investigated. The diagnosis of PA was based on the positive case detection and at least one positive result in confirmatory testing. **Results:** Total number of confirmed PA patients and conducted AVS showed a dramatic increase during the past decade (PA: 1061 pts/ 2006–2011 to 3718 pts/ 2012–2018; AVS: 720/ 2006–2011 to 2448/ 2012–2018). Success rate of AVS was improved from 79.0% (2006–2011) to 92.5% (2012–2018). Both rate of unilateral PA and ADX of successful procedures decreased from 42.7% (2006–2011) to 37.3% (2012–2018) and from 40.8% (2006–2011) to 34.9% (2012–2018), respectively. Of the patients with successful AVS, bilateral disease was diagnosed in 63.5% (1812/2854 pts). Of the unilateral PA patients, 11.9% (125/ 1054 pts) were not subjected to ADX. The rate of the patients not subjected to ADX was significantly higher in Japan than in ENS@T centers both in patients with successful AVS (75.8% vs. 53.4%) and with unilateral disease (19.9% vs. 8.6%). Clinical decision against ADX in unilateral disease was made by the physicians in 33.3%, the patients in 33.3%, and both in 33.3%. Medical factors for Dr.'s decision against ADX in unilateral disease included good blood pressure control, normokalemia, comorbidities (e.g. DM, CKD), non-lateralized CT findings (e.g. no tumor, contralateral tumor), and discordant results among different criteria of AVS.

Conclusions: High prevalence of bilateral disease and change of treatment policy after implementation affected the efficiency of AVS as an essential diagnostic procedure prior to ADX. Development of non-invasive procedures to

exclude bilateral PA and more strict indication of AVS are warranted.

Neuroendocrinology and Pituitary

ADVANCES IN NEUROENDOCRINOLOGY

Reduced Locomotive Behaviour and Increased Arcuate Nucleus Inflammation Are Observed in Kiss1r KO Male Mice

Raj Patel, BMedSc; MBIomedSc, Shane K. Maloney, PhD, Jeremy Troy Smith, PhD.

The University of Western Australia, Perth, Australia.

SUN-265

The neuropeptide kisspeptin, encoded by the *Kiss1* gene, binds the G-protein-coupled receptor Kiss1r (also known as GPR54) and is a novel player in the delicate balance of energy intake and expenditure. Mice that have a dysfunctional gene for Kiss1r develop an obese and diabetic phenotype. To further study how kisspeptin signalling impacts on energy balance, we investigated the relationship between absent kisspeptin signalling and locomotor behaviour in Kiss1rKO and wild type mice. Mice had free access to running wheels, and we examined the characteristics of wheel running over three weeks, and its flow-on effects on body mass. We subsequently examined dopaminergic neurons (via tyrosine hydroxylase (TH) staining) and hypothalamic inflammation (via Iba1 stained microglia). These studies also were performed following gonadectomy (GDX), to control for gonadal steroids. In intact males, the knockout (KO) mice covered only 10% of the distance travelled by wild-type (WT) per 24h (WT, 6363±643m; KO, 652±219m; P<0.0001). Moreover, in the WT there was a clear circadian pattern to the wheel-running activity, with most activity during lights off, while in the KO the running appeared randomly distributed across the 24h. After GDX, KO males continued to run significantly less than their WT counterparts (WT, 1652±474m; KO, 998±219m). In intact females, the KO mice covered only 23% of the distance travelled by WT per 24h (WT, 6030±747m; KO, 1379±364m; P<0.004). In OVX females, there was no difference between WT and KO mice (WT, 4150±1367m; KO, 3117±830m). Bodyweight analysis showed that access to running wheels prevented obesity usually seen in the Kiss1rKO mouse. In fact, in GDX males and females (at days 21 and 22 of wheel running) the KO mice were significantly lighter than WTs (at day 22: males, WT 28.67g; KO, 23.70g; P<0.05; females, WT, 27.38g; KO, 23.30g; P<0.05). Examination of TH revealed no significant difference in expression in the different genotypes in both sexes, in all areas examined. Investigation of Iba1 revealed significant higher counts in the male KO compared to the WT in the arcuate nucleus, but no difference in any other regions. We show that the locomotor activity in male and female Kiss1r KO mice is heavily dependent on the status of gonadal sex steroids. However, the lower running activity in male KO compared to WT remained after GDX, and this was paired with an elevated inflammation marker in the arcuate nucleus. Whether absent kisspeptin signalling acts as a significant regulator of voluntary activity is debatable, but patterns of locomotion behaviour could be disrupted, potentially involving circadian rhythm, this is under further investigation.

Diabetes Mellitus and Glucose Metabolism

DIABETES DIAGNOSIS, TREATMENT AND COMPLICATIONS

Association of Electrocardiograph Parameters and Diabetic Peripheral Neuropathy

Seong Su Moon, MD, PhD, Young-Sil Lee, MD, PhD.

Dongguk University Gyeongju Hospital, Gyeongju, Korea, Republic of.

SUN-613

Aim: The purpose of this study was to assess the relation between Prolonged P wave duration with diabetic peripheral neuropathy in subjects with type 2 diabetes. **Methods:** We assessed the measures of electrocardiographic function in 105 in 147 Korean subjects with type 2 diabetes, who visited Dongguk University Hospital for regular health checkup using electrocardiogram (ECG). We measured several electrocardiogram parameters including ventricular rate, PR interval, QRS duration, QT, QTC and P wave duration. Subjects were grouped as without diabetic peripheral neuropathy (≤ 2) and with peripheral neuropathy (≥ 2) based on Michigan Neuropathy Screening Instrument Examination Score (MNSIES). **Results:** The population mean age was 61.50±11.17 years and 60.78% were men. The participants with DPN significantly found higher with age, MNSIES and P wave duration as compared to without DPN. The prevalence of drinking significantly found higher in participants with diabetic peripheral neuropathy. Furthermore, in a multiple regression analysis, MNSI examination score significantly showed positive association with prolonged P wave duration after adjustment with age, MNSIES and drinking alcohol (β , 1.123; 95% CI, .109~2.138; p=.030). **Conclusions:** The current study revealed an association between prolonged P wave and MNSI examination score.

Pediatric Endocrinology

PEDIATRIC ENDOCRINE CASE REPORTS II

First Report of Monozygotic Twins with Russell Silver Syndrome in China: Recombinant Growth Hormone Therapy and 3-Year Observation

Shu Liu, deputy director, Jianhui Jiang, MD.

Guangdong Women and Children Hospital, Guangzhou, China.

MON-054

First report of monozygotic twins with Russell Silver syndrome in China: recombinant growth hormone therapy and 3-year observation

Background: Russell Silver syndrome (RSS) is a rare genetic condition that includes an important index of suspicion when a child presents with hemihypertrophy. There are more than 400 cases described in the literature, but twin pairs with RSS have rarely been reported. Up to now only six monozygotic twin pairs have been described [1]. However, this has not been reported in east Asian population yet.

Clinical Case: A 4 years and 9 months old monozygotic twin girl with a history of growth retardation was admitted to our hospital. The first impression of the patient was: