

abdominal CT scans and countermovement two-legged jumping test on ground reaction force platform. SMA and SMD were measured at CT images at L3 vertebral level. Mean age of 1523 patients was 74.7 years and 65.1% was female. For peak jump force, L3SMA was stronger contributing factor than SMD (standardized beta of SMA vs. SMD = 0.16 vs. 0.08 for men; 0.12 vs. 0.05 for women;  $p < 0.05$  for all). However, SMD was a better indicator of peak jump power compared to SMA in both sexes (standardized beta of SMD vs. SMA = 0.21 vs. 0.17 for men; 0.15 vs. 0.13 for women;  $p < 0.05$  for all). These associations remained robust even after adjustment for age, height, weight, triglyceride, HDL cholesterol, high sensitivity C-reactive protein, and insulin resistance. One standard deviation decrease of SMD was associated with 8% elevated odds of low jump power relative to weight after adjustment for potential confounders (adjusted OR = 1.08,  $p < 0.001$ ), whereas the association between SMA and low jump power was attenuated. SMD improved discrimination for individuals with low jump power when added to SMA and conventional risk factors (Area under the receiver-operating characteristics curve 0.732 to 0.750,  $p=0.006$ ). SMD was an independent predictor of jump power with additive discriminatory value to SMA and conventional risk factors. Our findings suggest the potential complimentary role of SMD as muscle quality indicator beyond muscle mass as a surrogate for muscle function.

## Adrenal

### ADRENAL - TUMORS

#### *Pattern and Spectrum of Adrenal Disorders Seen Among Adults in Southern Iraq. A Tertiary Center Experiences*

Abbas Ali Mansour, MD, FRCP, FACE, Ali Hussain Ali Alhamza, MD, Ammar Mohammed Saeed Abdullah Almomin, MD, Ibrahim Abbood Zaboob, MD, Nassar Taha Yaseen Alibrahim, MD, Rudha Naser Hussein, MD, Muayad Baheer Kadhim, MD, Adel Gassab Mohammed, MD, Dheyaa Kadhim Jabbar Al-Waeli, MD, Hussein Ali Nwayyir, MD, Haider Ayad Yassin Alidrisi, MD, Ibrahim Hani Hussein, MD, Samih Abed Odhaib, MD, Mahmood Thamer Jallod Altemimi, MD, Husam Jihad Imran, MD.

Faiha Diabetes Endocrine and Metabolism Center, Basrah, Iraq.

### SAT-164

**Background:** Adrenal disorders is rare life-threatening conditions needed high awareness for earlier diagnosis. The aim of this study is to see the pattern and spectrum of adrenal disorders in Southern Iraq.

**Methods:** Retrospective electronic database analysis of Faiha Specialized Diabetes, Endocrine and Metabolism Center (FDEMC) in Basrah, the largest tertiary referring Center in the Southern Iraq. Only adults 18 years and above analysed.

**Results:** The total referred patients for presumed adrenal disorders were 5064(6%) of 83473 new patients seen over 11 years for the period of August 2008 to August 2019. The commonest adrenal disease were due to glucocorticoids misuse in 2407/5064 (47.5%), followed by adrenal endocrine hypertension in 883/5064 (17.4%), than adrenal insufficiency in 340/5064 (6.7%), hirsutism in 264/5064 (5.2%),

hypopituitarism 85/5064 (1.6%) and congenital adrenal hyperplasia in 78/5064 (1.5%). Rare causes of adrenal disorder were primary aldosteronism in 30/5064 (0.5%), Addison disease in 26/5064 (0.5%), pheochromocytoma in 19/5064 (0.4%), autoimmune polyendocrine syndromes in 19/5064 (0.4%), ACTH independent Cushing syndrome in 17(0.3%), ACTH dependent Cushing syndrome in 4(0.07%), subclinical Cushing syndrome in 4(0.07%), ectopic ACTH syndrome in 1(0.01%), adrenal cyst in 9(0.1%), adrenal myelolipoma in 5(0.09%), adrenocortical carcinoma in 3(0.05%), and paraganglioma in 2(0.04%). One of the paraganglioma were secretory. Patients characteristics for those with glucocorticoids misuse showed that female forming the bulk of cases in 1708/2407 (70.9%), and mean age of  $39.5 \pm 12.3$  years. Urban constitutes 1306/2407 (54.3%), and 629/2407 (26.1%) were illiterates. There were 706/2407 (29.3%) with established type 2 diabetes mellitus (with all the risks of loss of glycemic control) and glucocorticoids misuse causes 105/2407 (4.3%) incident diabetes.

**Conclusion:** Glucocorticoids misuse constituted the bulk of referral for adrenal disorders in Basrah. A lot of work needed to reduce the prevalence of this new high-risk iatrogenic disease.

## Diabetes Mellitus and Glucose Metabolism

### GESTATIONAL DIABETES, DIABETES IN PREGNANCY, AND IN UTERO EXPOSURES

#### *Effects of Steroid Hormones on Lipogenesis and Insulin Sensitivity - an Insight into the Involvement of the Wnt Signaling Pathway*

Neethu Sara Alex, B.E., Habibur Rahaman Khan, M.Sc., Rudraiah Medhamurthy, PhD.

Indian Institute of Science, Bangalore, India.

### SUN-644

Gestational diabetes mellitus (GDM), a condition in which the state of pregnancy induces the development of diabetes, is characterized by heightened maternal insulin resistance. The levels of sex steroid hormones generally increase during pregnancy. It is thought that imbalance in the levels of steroids like estradiol ( $E_2$ ) and progesterone ( $P_4$ ) with respect to each other, may increase susceptibility towards GDM. To understand the metabolic effects of these steroids, ovariectomized (OVX) rats were treated with  $E_2$  or  $P_4$  at dosages mimicking the true hormonal status as in pregnancy.  $E_2$  significantly reduced the body weight gain ( $145.4 \pm 1.4\%$  to  $108.3 \pm 0.8\%$ ,  $p < 0.001$ ,  $n \geq 12$ ) as well as the cumulative food intake ( $391.3 \pm 14.6$  g to  $312.5 \pm 9.0$  g,  $p < 0.001$ ) over the course of the 23 day-treatment period. It also decreased the quantity of accumulated gonadal white adipose tissue (GWAT) in the body ( $3.3 \pm 0.2$  g to  $1.1 \pm 0.1$  g,  $p < 0.001$ ) and repressed expression of *lpl* ( $1.3 \pm 0.2$  fold,  $p < 0.05$ ) and other lipogenesis markers.  $P_4$ , on the other hand, enhanced *lpl* expression ( $3.7 \pm 0.2$  fold,  $p < 0.001$ ), but did not affect the total quantity of GWAT. Further,  $E_2$  treatment brought about an increase in the expression of insulin sensitivity markers like *insr* in the GWAT ( $4.5 \pm 0.6$  fold,  $p < 0.001$ ) and soleus skeletal muscle ( $6.2 \pm 0.3$  fold,  $p < 0.001$ ), as well as an increase in the protein levels of GLUT4.