and falls. Neurologists changed her medication from Copaxone to Tecfidera and patient improved clinically and has not had any further flares. Notably, she never received any dopaminergic agent to treat her prolactin level, which improved significantly.Our case illustrates that prolactin may be a disease marker in the acute phase of MS and can be restorative. Further more it will improve when the MS is treated and we should not use any dopamine agonist.

Diabetes Mellitus and Glucose Metabolism

METABOLIC INTERACTIONS IN DIABETES

P300 and CBP Are Necessary for Skeletal Muscle Insulin-Stimulated Glucose Uptake

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SUN-670

Introduction: Akt is a critical mediator of insulin-stimulated glucose uptake in skeletal muscle. The acetyltransferases, E1A binding protein p300 (p300) and cAMP response element-binding protein binding protein (CBP) are phosphorylated and activated by Akt, and p300/CBP can acetylate and inactivate Akt, thus giving rise to a possible Akt-p300/CBP axis. Our objective was to determine the importance of p300 and CBP to skeletal muscle insulin sensitivity.

Methods: We used Cre-LoxP methodology to generate mice with a tamoxifen-inducible, conditional knock out of *Ep300* and/or *Crebbp* in skeletal muscle. At 13-15 weeks of age, the knockout was induced via oral gavage of tamoxifen and oral glucose tolerance, *ex vivo* skeletal muscle insulin sensitivity, and microarray and proteomics analysis were done.

Results: Loss of both p300 and CBP in adult mouse skeletal muscle rapidly and severely impairs whole body glucose tolerance and skeletal muscle insulin sensitivity. Furthermore, giving back a single allele of either p300 or CBP rescues both phenotypes. Moreover, the severe insulin resistance in the p300/CBP double knockout mice is accompanied by significant changes in both mRNA and protein expression of transcript/protein networks critical for insulin signaling, GLUT4 trafficking, and metabolism. Lastly, in human skeletal muscle samples, p300 and CBP protein levels correlate significantly and negatively with markers of insulin resistance.

Conclusions: p300 and CBP are jointly required for maintaining whole body glucose tolerance and insulin sensitivity in skeletal muscle.

Thyroid

HPT-AXIS AND THYROID HORMONE ACTION

Impact of Fasting on Plasma Thyrotropin in Hypothyroid Patients Taking Levothyroxine During Ramadan (IFT-R Study)

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SAT-443

Impact of Fasting on Plasma Thyrotropin in hypothyroid patients taking levothyroxine during Ramadan (IFT-R Study)

Background and Aim: We previously showed in a retrospective analysis that the plasma TSH rises significantly post-Ramadan in levothyroxine-treated hypothyroid patients, possibly as a result of changes in the eating habit during the non-fasting period from dusk until dawn. The aim of this study is to determine the best time for taking levothyroxine during Ramadan in order to minimize changes in thyroid function tests.

Methods: in a randomized prospective design, hypothyroid patients taking levothyroxine for greater than 6-months were randomized to take levothyroxine at one of the following 3 times during Ramadan: (group 1) at dusk after a prolonged fast and 30-minutes before the Iftar meal, (group 2) ≥ 3-hours after the Iftar meal, or (group 3) at dawn 30-minutes before Suhur meal. Patients were instructed to allow a minimum of 3-hours between the last meal and levothyroxine and to refrain from eating and drinking for at least 30-minutes after taking levothyroxine. Thyroid function tests were performed within 3-months before Ramadan and within 6-weeks post Ramadan. To estimate intent-to-treat effects, we examined pre- and post-Ramadan thyroid function tests in relation to the assigned levothyroxine administration times.

Results: 147 patients were randomized into the study and the respective number of patients in groups 1, 2 and 3 were 50, 46 and 51. The mean age of participants was 43.5±12.4 years [range 21.0-86.0] and 78% were females with no statistical differences in the mean age or gender distribution between the 3 groups. The respective pre-Ramadan mean TSH values for the 3 groups were 2.49 mIU/L, 2.16 mIU/L and 3.37 mIU/L with no significant differences at baseline. Post-Ramadan mean TSH values were 2.47 mIU/L, 4.26 mIU/L and 3.85 mIU/L for groups 1, 2 and 3 respectively. The pre- and post-Ramadan mean TSH differences were significant only for group 2, who took levothyroxine 3-hours post-Iftar (P-value 0.041). There were no significant differences in the free-T4 levels across the 3-groups before and after Ramadan. In a subset of 85 patients, the preferred times for levothyroxine administration during Ramadan were 44.7% before Iftar, 50.6% post-Iftar and only 4.7% were in favor of taking the medication before Suhur meal.

Conclusions: Levothyroxine-treated hypothyroid patients who took levothyroxine 3-hours after the main Iftar meal showed a significant increase in plasma TSH post-Ramadan, possibly reflecting a reduced time period