

## 2<sup>nd</sup> International Conference on **Endocrinology**

October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

### **Diet-induced obesity induces Endoplasmic reticulum stress and insulin resistance in Amygdala of rats**

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Insulin acts in hypothalamus decreasing food intake (FI) by IR/PI3K/Akt pathway. This pathway is impaired in obese animals and endoplasmic reticulum (ER) stress and low grade inflammation are possible mechanisms involved in this impairment. Here, we highlighted amygdala as an important brain site of FI regulation in response to insulin. This regulation was dependent on PI3K/AKT pathway similar to the hypothalamus. Insulin was able to decrease NPY and increase oxytocin mRNA levels in the amygdala via PI3K, which may contribute to hypophagia. Additionally, obese rats did not reduce FI in response to insulin and AKT phosphorylation was decreased in the amygdala, suggesting insulin resistance. Insulin resistance was associated with ER stress and low grade inflammation in this brain region. The inhibition of ER stress with PBA reverses insulin action/signaling, decreases NPY and increases oxytocin mRNA levels in the amygdala from obese rats, suggesting that ER stress is probably one of the mechanisms that induce insulin resistance in the amygdala.

#### **Biography**

Patricia O Prada has completed her Ph.D at the age of 31 years from Sao Paulo School of Medicine (Sao Paulo, Brazil) and the first postdoctoral studies from University of Campinas – UNICAMP (Sao Paulo, Brazil). The second postdoctoral was done at Endocrinology, Diabetes and Metabolism, Beth Israel Deaconess Medical Center, Harvard Medical School and finished in 2009. Now is an associated professor at School of Applied Sciences, University of Campinas – UNICAMP (Sao Paulo, Brazil). She has published around 30 papers in reputed journals in diabetes and metabolism field.

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