

5<sup>th</sup> World Congress on

# Diabetes & Metabolism

November 03-05, 2014 Embassy Suites Las Vegas, USA

## Comparative expression of inflammatory-related genes in visceral adipose tissue of normal weight, cachectic, and morbidly obese subjects

Antônio Sérgio Barcala Jorge<sup>1</sup>, João Marcus Oliveira Andrade<sup>2</sup>, Alanna Fernandes Paraíso<sup>1</sup>, Gislaïne Candida Batista Jorge<sup>1</sup>, Thaisa Soares Crespo<sup>1</sup>, Cássio Andre Vieira<sup>1</sup>, Alfredo Maurício Batista de Paula<sup>1</sup> and Sérgio Henrique Sousa Santos<sup>1,2</sup>

<sup>1</sup>Universidade Estadual de Montes Claros (Unimontes), Brazil

<sup>2</sup>Universidade Federal de Minas Gerais (UFMG), Brazil

**Background:** The identification of new pharmacological approaches to effectively prevent, treat, and cure the metabolic syndrome and cachexia are of crucial importance. Multiple inflammatory markers are strongly and positively associated with the pathophysiology damage caused over these diseases on the other hand studies indicate that such beneficial effects of Sirt1 are due to at least two mechanisms: induction of antioxidant proteins, and lower activation of proinflammatory cytokines. In this study, obese patients had a lower level of expression of this sirtuin and the high level of expression TNF and IL6

**Aim:** To analyze the expression of tumor necrose factor-alpha (TNF- $\alpha$ ), interleukin-6 (IL6), and Sirtuin 1 (SIRT1) in adipose tissue of normal weight, cachexia, and obese subjects.

**Material and Methods:** Abdominal adipose tissue samples of normal weight (n=14), c cachexia (n=14), and obese (n=20) subjects were submitted to quantitative real time polymerase chain reactions for gene expression analysis of TNF- $\alpha$ , IL6, and SIRT1.

**Results:** Our findings showed that IL6 and TNF alpha are related to obesity and cachexia. We could demonstrate that Cachectic, and Morbidly Obese Subjects have a higher level of expression of these markers in abdominal adipose tissue compared to the control group of normal-weight adults. With respect to SIRT1, both visceral adipose tissue of cachexia and obesity showed low mRNA expression.

**Conclusions:** These chemokines and sirtuin may be involved in initiation and modulation of fat present in these individuals inflammatory process. In this study by the significantly higher expression of TNF alpha and IL6 in cachectic and obesity patients SIRT1 has been shown to increase the antioxidant defense enzymes thus effective protection of inflammation and this study was at least expressed in cachectic and obese individuals compared to the control group.

[antonioserjobjorge@gmail.com](mailto:antonioserjobjorge@gmail.com)