

Impact of metabolic stress on serum inflammatory and adipocytokine levels in young and aged rats

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ABSTRACT

Introduction: Lipid dysregulation, adipocytokine imbalance and inflammation are the key players in many diseases like diabetes, atherosclerosis and age-associated degenerative diseases. The current lifestyle, characterized by a Western diet rich in lipids and fructose that satisfies a major part of caloric requirements, leads to obesity and inflammation, which contribute to the manifestation of degenerative diseases. Therefore, the aim of the current study is to evaluate the inflammatory and adipocytokine status in lipid and glucose metabolism derangements. **Materials and Method:** Young and aged male Wistar rats were divided into five major groups and fed with high fat diet followed by intraperitoneal injection of low dose of streptozotocin (30 mg/kg). The fasting blood glucose was measured 3 days after the streptozotocin injection. The rats with the fasting blood glucose 16.7 mmol/L were considered diabetic and selected for further studies. Rats were sacrificed, and the blood samples were collected in respective test tubes for the separation of plasma and serum samples. Evaluation of the serum levels of leptin, Resistin, Visfatin, Il-1 α , Il-1 β and Il-6 were done by ELISA. **Results and Conclusion:** Assessment of adipocytokine and inflammatory markers alteration in the various experimental groups reveal that aging combined with high fat diet feeding contributed the maximum alteration in adipokines and inflammatory markers followed by young rats stressed with high fat diet, fructose and STZ.