EuroSciCon

11th International Conference on

Endocrinology and Diabetology

August 09-10, 2018
Madrid, Spain

J Clin Mol Endocrinol 2018, Volume 3
DOI: 10.21767/2572-5432-C2-006

CHRONIC UNPREDICTABLE ENVIRONMENTAL STRESS IMPAIRS BIOCHEMICAL AND PHYSIOLOGICAL HOMEOSTATSIS: ROLE IN DIABETES MELLITUS

Alok Raghav[1] and **Jamal Ahmad**[2]
[1]Indian Institute of Technology Kanpur, India
[2]Aligarh Muslim University, India

Chronic unpredictable environmental stress (CUES) may induce predisposition to diabetes mellitus. This study investigates the role of CUES on impaired homeostasis. Stressed group mice (n=20) were exposed to CUES for 16 weeks. Weekly body weight, feed consumption, feed efficiency ratio, fasting blood glucose were monitored. Plasma HbA1c, plasma cortisol, plasma epinephrine and plasma insulin, serum lipids, antioxidants and carbohydrate metabolizing enzymes activity were assessed along with DNA damage and histopathological examination of liver, kidney, pancreas, spleen and skeletal muscles. Semi-quantitative expression of IL-4, IL-6 and β- actin was also assessed. Fasting blood glucose levels & HbA1c in the stressed were significantly higher compared to control (p<0.001). Serum lipids were found insignificantly higher in stressed mice compared to control. Body weights of the stressed mice and feed efficiency ratio were found significant (p<0.001). Plasma corticosterone, plasma epinephrine, HOMA-IR (Homeostatic model assesment- insulin resistance) was found to be significantly higher in the stressed group (p<0.001). Plasma insulin level was found to be significantly lower in the stressed group (p<0.001). Significant changes were observed in antioxidants level, carbohydrate metabolizing enzymes activity, peripheral tissues and DNA integrity. Expression of IL-4, IL-6 was found significantly higher in the stressed group. CUES initiates pathogenesis of diabetes.

alokalig@gmail.com