

JOINT EVENT

3rd International Conference on
ENDOCRINOLOGY AND METABOLIC SYNDROME
&12th International Conference on
ABDOMINAL IMAGING AND ENDOSCOPY

June 28-29, 2018 Amsterdam, Netherlands

Pancreatic isolated islet sensitivity to glucose in STZ induced diabetic rats after treatment by vanadiumLeila Pirmoradi¹ and Gholam Abbas Dehghani²¹Kurdistan University of Medical Sciences, Iran²Shiraz University of Medical Sciences, Iran

Statement of the Problem: Besides insulin mimetic activity, vanadium regenerates beta cells. This study assessed islet sensitivity to glucose in diabetic rats treated by vanadium.

Methodology: Rats were randomly divided into five groups: Normal (CN), Normal-Vanadium (VTN), Diabetic (CD), Diabetic-Vanadium (VTD), and Diabetic-Insulin (ITD). Tail blood samples were taken for measurement of glucose (BG) and circulating insulin. After two months, rats were sacrificed, and glucose stimulated insulin secretion of isolated islets were measured in vitro. Two weeks before the end of the experiment, IVGTT was performed.

Findings: Based on BG and insulin of normal group, insulin of VTN animals decreased significantly. Hyperglycemia with concurrent reduction in insulin was observed in CD. Insulin of VTD animals doubled and BG significantly decreased. IVGTT results followed a similar pattern of BG and insulin results. In vitro study indicated that in CN rat's islet insulin secretion was not significantly different from VTN in response to glucose concentrations at 2.8, 5.6 and 8.3 mM/l in milieu. However, in VTN insulin secretion at 16.7 mM/l glucose concentration was significantly higher than CN. Although, there were no significant differences among insulin secretion of CD, VTD and ITD at glucose concentration of 2.8 mM/l, insulin secretion was significantly higher in VTD and ITD at glucose concentration of 16.7 mM/l compared to CD group. The increased insulin secretion in VTD was still significantly higher than ITD.

Conclusion: Vanadium ameliorated hyperglycemia through proliferation and sensitivity preservation of beta cells in diabetic rats.

Biography

Leila Pirmoradi is an Assistant Professor of Physiology at the Department of Physiology and Pharmacology of Kurdistan University of Medical Sciences, Iran. Her field of research is diabetes and its complications. She has experience in research, evaluation and teaching of Physiology in medical sciences universities.

lpirmoradi@gmail.com

Notes: