

July 19-20, 2018
Prague, Czech RepublicSuha Al Muhaisen et al., Biomark J 2018, Volume 4
DOI: 10.21767/2472-1646-C1-002

ASSOCIATION OF OXYTOCIN WITH GLUCOSE INTOLERANCE AND INFLAMMATION BIOMARKERS IN METABOLIC SYNDROME PATIENTS WITH AND WITHOUT PREDIABETES

Suha Al Muhaisen¹, Amal Akour¹, Violet Kasabri¹, Nailya Bulatova¹, Randa Naffa¹, Hiba Fahmawi¹, Munther Momani², Ayman Zayed² and Yasser Bustanji¹

¹The University of Jordan, Amman, Jordan

²Jordan University Hospital, Amman, Jordan

Objectives: The aim of this study was to explore the differences in oxytocin (OXT) levels in metabolic syndrome (MetS) subjects, newly diagnosed type 2 diabetes mellitus (T2D) and prediabetes subjects vs. MetS subjects without glucose intolerance (non-diabetic MetS). It was also intended to determine the relationship between plasma OXT levels and inflammatory markers in those subjects.

Methods: Along with 45 lean and normoglycemic controls, a total of 190 MetS subjects (61 men, 129 women) were enrolled. Colorimetric enzymatic assays of the following components were performed: plasma OXT, high-sensitivity C-reactive protein (hs-CRP), macrophage chemo attractant protein 1 (MCP-1), plasminogen activator inhibitor 1 (PAI-1), matrix metalloproteinase 9 (MMP-9), resistin, adiponectin, leptin, macrophage migration inhibitory factor (MIF), tumour necrosis factor α (TNF- α), thrombospondin 1 (TSP-1), interleukin 10 (IL-10), interleukin 6 (IL-6) and glucagon.

Results: hsCRP, PAI-1, resistin, leptin-to-adiponectin-ratio (LAR), TNF- α , TSP-1, and MIF were significantly higher in both MetS groups (prediabetic and T2DM) than in MetS-only subjects. Leptin and MMP-9 were significantly higher in the MetS-T2DM group (but not in MetS-prediabetics) vs. MetS-only subjects. Conversely adiponectin, OXT, MCP-1, and IL-10 were significantly lower in both MetS groups (prediabetic and T2DM) than in MetS-only subjects. There was no marked discrepancy in either glucagon or IL-6 levels among the three MetS groups. In the entire MetS study population, OXT correlated substantially and proportionally with MCP-1, IL-10, and IL-6; it correlated negatively with HbA1c, fasting plasma glucose (FPG), PAI-1, MMP-9, TNF- α , TSP-1, resistin, adiponectin, leptin, LAR, and MIF. No association could be observed between OXT and glucagon.

Conclusions: OXT may be a substantial surrogate predictive/prognostic tool and putative pharmacotherapeutic target in metabolic anomalies and related disorders.

Biography

Suha Al Muhaisen, MSc. is a Pharmaceutical Technology Lecturer at The University of Jordan. Dr. Al Muhaisen has published several peer reviewed journal articles, as well as several submitted research papers. She is a recognized expert in many areas of drug delivery, industrial Pharmacy, educational research, in addition to her projects in Clinical and Social Research. She is regularly part of institutional and national workshops. Al Muhaisen is a regularly and frequently invited reviewer for International journals with relevant fields of expertise including American journal of Pharmaceutical Education. Her Recent publications include papers "Association of Oxytocin with Glucose Intolerance and Inflammation Biomarkers in Metabolic Syndrome Patients with and without Prediabetes" and "Impact of a pharmacist-provided information booklet on knowledge and attitudes towards oral contraception among Jordanian women: an interventional study". Al Muhaisen is a prominent faculty member at the School of Pharmacy, Department of Pharmaceutics and Pharmaceutical Technology-The University of Jordan where she routinely lectures on various topics related to Pharmaceutical Technology. She has served as a member of various institutional committees. Al Muhaisen is recognized by her peers as a scientific expert that integrates new technologies into everyday practices and her ongoing research includes improving physicochemical properties of betahistine, effect of alcohol on disintegration properties, and extemporaneous preparations. Al Muhaisen has several funded research projects from different institutional and private sources including student funded research groups. Al Muhaisen holds a BSc in Pharmacy from The University of Jordan. She completed her Masters with distinction in Pharmaceutics from The University of Jordan.

smuhaisen@hotmail.com