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THE IMPACT OF SHIFT WORK RELATED CIRCADIAN RHYTHM DISRUPTION IN LEAN SUBJECTS ON INFLAMMATION BIOMARKERS

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Objective: This study aimed to examine the effect of circadian rhythm disruption in night-shift workers on anthropometry and systemic biomarkers of inflammation.

Design: Demographic data, clinical parameters and working patterns data of 126 adult employees were documented. Serum levels of biomarkers were measured by enzymatic assay procedures.

Results: Night-shift workers can be closely associated with higher propensity of cardiometabolic risk factors clustering with higher levels of insulin resistance index [homeostatic model assessment-insulin resistance [HOMA-IR] index]. Night-shift workers had markedly lower anti-inflammatory IL-10, cardioprotective adiponectin and MCP-1. Night-shift workers' MIF, LAR, TNF-α and TNF-α/IL-10 ratio were significantly higher than in day-shift workers. Compared with daytime workers, night-shift workers had higher serum levels of thrombospondin 1 (TSP-1), and plasminogen activator inhibitor-1 (PAI-1) but lower levels of oxytocin (OXT). Incomparably, matrix metalloproteinase-9 (MMP-9) and highly sensitive-C-reactive protein (hs-CRP) did not prove inter-shift substantial differences. Spearman's correlation showed that HOMA-IR,TSP-1 and PAI-1, MIF, TNF-α, LAR, and TNF-α/IL-10 ratios correlated positively and significantly with both the duration of night shift and total number of shifts (p-value<0.05). Meanwhile OXT, IL-10, nevertheless adiponectin, IL-6 and MCP-1 correlated negatively and significantly with both variables (p<0.05).

Conclusions: Night-shift workers can be closely associated with higher propensity of cardiometabolic risk factors clustering. Therefore, close monitoring of their clinical status and lifestyle is warranted.

Biography

Dr. Maysa Suyagh is as Associate Professor of Clinical Pharmacy and Clinical Pharmaceutics in the Faculty of Pharmacy at the University of Jordan since 2008. She received her BSc degree in Pharmacy from the University of Jordan in 2002 and her MSc degree in Clinical Pharmacy from the University of London in 2004 followed by her PhD degree in Clinical Pharmacy from Queen's University Belfast in 2008 focusing on the provision of evidence based approached for dosing medicine in the pediatric population. Dr. Suyagh is responsible of teaching several courses for pharmacy, pharmD and MSc. In clinical pharmacy degrees and she was the assistant dean of development and quality assurance affairs from 2009 till 2012. Dr. Suyagh has several research interests and publications in the area of clinical pharmacy and clinical pharmacokinetics and pharmacy practice. She offers consultations in clinical research and bioequivalence study design and analyses to clinical research organizations (CROs) in Jordan. In addition, she served as a member of Jordan Food and Drug Administration (JFDA) committees and as an IRB member for a CRO in Jordan

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