additional risk for reduced sleep quality and quantity, and the presence of hyperglycemia, as a complicating factor, has being increasingly frequent. Different measures of sleep evaluation, both objectively and subjectively, can provide additional information about the influence of sleep in metabolic control in Gestational Diabetes Mellitus (GDM). **Objective:** To investigate the influence of sleep quality and objective sleep measures on glycated hemoglobin (HBA1C) in patients with GDM. **Methodology:** This is a cross-sectional study examining patients with GDM from 2nd to 3rd trimester of pregnancy. Clinical data and behavior questionnaires were collected by a face-to-face interview. Self-Rated Sleep Quality was evaluated by Pittsburgh Sleep Quality Index- (PSQI). In order to improve the accuracy of the information, a 14-day sleep log was obtained, and objective sleep measurements were registered by actigraphic record (5 to 7 days). **Results:** Overall, GDM patients (N=311), aged from 20 to 46 y (33.1±5.6) were evaluated. Sleep duration ≤6 hours/night was found in 43.4%, and 63.9% reported poor sleep quality (PSQI>5). Sleep duration measured by actigraphy was correlated with sleep duration registered by sleep log (r=.45, p=.04), and with PSQI (r=-.33, p=.002). Sleep quality and sleep duration registered by either actigraphy or sleep log were not correlated with Hba1c. Amongst all, Hba1c varied from 4.3 to 7.0 mg/dL (5.9 ±.53). Sleep fragmentation, measured by the length of time patient spends awake after sleep onset (WASO) was correlated withHba1c level in patients with GDM (r=.41, p=0.04). **Conclusion:** Sleep duration obtained from the sleep log was a reliable measure correlating with objective sleep parameters registered by actigraphy and with sleep quality. In GDM patients, increased wake time after sleep onset was correlated with higher Hba1c.

Diabetes Mellitus and Glucose Metabolism

DIABETES IN WOMEN AND DURING PREGNANCY

The Performance of Glycated Hemoglobin Versus Oral Glucose Tolerance Test in the Diagnosis of Glycemic Disorders Among Women With Polycystic Ovary Syndrome in Southern Iraq

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Background: Obese women with PCOS are at high risk for developing diabetes mellitus (T2DM). A baseline oral glucose tolerance test (2hrs-OGTT) annually is an important to screen for dysglycemia in women with PCOS particularly those with at least one risk factor. Due to its advantages by fasting is not required and less day-to-day variability during periods of stress or illness, glycated hemoglobin (HbA1c) might consider a convenient screening tool. This study aimed to evaluate the performance of HbA1c versus 2hrs-OGTT in the diagnosis of glycemic disorders in women with PCOS and to evaluate the correlation between glycemic disorders, insulin resistance (IR), and anthropometric measures. **Patients and methods**: One hundred and thirty women of a mean age 26.3 ± 6.85 year were diagnosed with PCOS according to Rotterdam 2003 criteria in Basrah, Southern Iraq. All women were examined for weight, BMI and waist circumference then they were sent for fasting plasma glucose (FPG), 2hrs-OGTT, HbA1c, and fasting insulin to assess IR. **Results:** By 2hrs-OGTT, impaired glucose tolerance and T2DM were diagnosed in 16.1% and 2.4% of women with PCOS respectively and 6.7% of lean women were prediabetes. HbA1c was underestimate the diagnosis of T2DM (0.8%) and overestimate prediabetes (20%) (p=0.011) and at HbA1c= 5.55%, the specificity was (74.3%) and sensitivity (56.5%) to discriminate normal from abnormal glucose status in women with PCOS (AUC: 0.645; 95% C.I.: 0.503–0.77; $p = 0.03$). One hundred women (76.9%) were either overweight or obese and most of them had IR (78%). **Conclusion:** screening of glycemic disorders is a crucial for PCOS by using 2hrs-OGTT regardless risk factor and HbA1c seems to be unsatisfactory screening tool to predict glycemic disorders in women with PCOS.

Diabetes Mellitus and Glucose Metabolism

DYSREGULATED METABOLIC RESPONSE

Characterization of Viral Insulin-Like Peptides Reveals Unique White Adipose Tissue Specific Characteristics

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The members of the insulin superfamily are well conserved across the evolution tree. We recently showed that four viruses in the *Iridoviridae* family possess genes that share high similarity with human insulin and IGF-1. By chemically synthesizing single chain (sc, IGF-1 like) forms of these viral insulin/IGF-1 like peptides (VILPs), we previously showed that sc VILPs have insulin/IGF properties in vitro and in vivo. However, characteristics of double chain (dc, insulin-like) VILPs remain unknown. In this study, we characterized dc forms of VILPs for Grouper iridovirus (GIV), Singapore grouper iridovirus (SGIV) and Lymphocystis disease virus-1 (LCDV-1). We showed that GIV and SGIV dcVILPs bind to both isoforms of human insulin receptor (IR-A, IR-B) and they bind to IGF-1R with a higher affinity than human insulin. These dcVILPs stimulate receptor phosphorylation and post-receptor signaling in vitro and in vivo. LCDV-1 dcVILP stimulated a weak response in in vitro signaling experiments, although we could not determine binding competition. Both GIV and SGIV dcVILPs stimulated glucose uptake in mice. In vivo infusion experiments in awake mice revealed that while insulin (2.5