

VITAMIN D LEVEL AND ITS RELATION TO DEVELOPING GESTATIONAL DIABETES MELLITUS IN EGYPTIAN FEMALES

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INTRODUCTION

Gestational Diabetes is diabetes that is first diagnosed in the second or third trimester of pregnancy that is not clearly either preexisting type 1 or type 2 diabetes. The diagnosis of GDM in early pregnancy by either FPG or OGTT values is not an evidence base. Because GDM became a risk for the development of type 2 diabetes after delivery. Moreover, it is prevention interventions are available. Therefore, women who are diagnosed with GDM should receive lifelong screening for prediabetes and type 2 diabetes. Vitamin D deficiency is a low serum level of vitamin D3(hypovitaminosis), and when it is associated with pathological symptoms then it is known as vitamin D deficiency. Recently, there is some evidence to endorse that change in vitamin D level and calcium homeostasis may play a role in the occurrence of diabetes mellitus. In addition, it may be associated with defect in pancreatic beta cell functions and insulin sensitivity.

Aim of the work

To Study the level of vitamin D in non-diabetic pregnant Egyptian women and to determine the relationship of vitamin D levels to the development of gestational diabetes, in Egyptian females.

PATIENTS

All the women (n=100) in this study presented to El- Shatby Maternity University Hospital in antenatal care clinic; the age of subjects ranged between 30-42 years. All cases that selected fulfill the study criteria.

METHODS

The study was prospective cohort review ,all patients date were collected , Demographic data including measuring body weight, height and body mass index; anthropometric measures including hip circumference, waist circumference and waist hip ratio; vital signs including systolic, diastolic blood pressure, pulse, temperature and RR were determined. Laboratory examination were done including Serum insulin, HOMA IR and HGA1C, 25(OH) vitamin D3, OGTT and FBS.

RESULTS

Table (1): Comparison between the two studied groups according to serum vitamin D

Serum vit D (ng/ml)	Total (n=100)	Criteria		t	p
		Non GDM (n=91)	GDM (n=9)		
Min. – Max.	8.10 – 16.50	8.10 – 16.50	8.10 – 14.90		
Mean ± SD.	10.13 ± 2.32	10.12 ± 2.30	10.30 ± 2.71	0.226	0.821
Median (IQR)	10.0 (8.10–11.90)	10.0 (8.10–11.40)	9.30(8.10–12.0)		

IQR: Inter quartile range SD: Standard deviation t: Student t-test  
P: p value for comparing between Non GDM and GDM

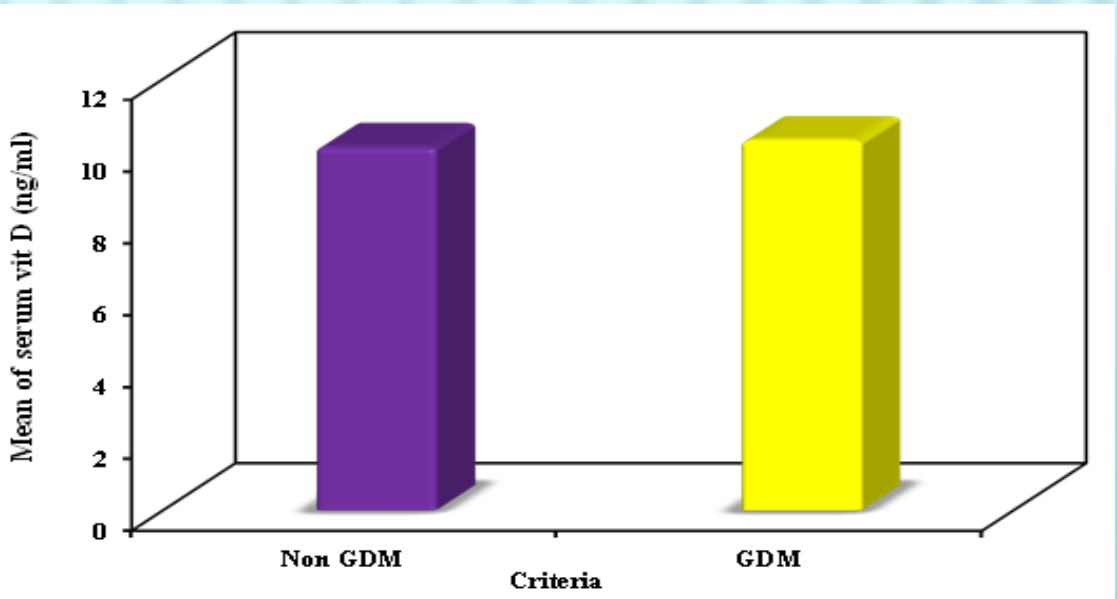


FIG (1) : Comparison between the two studied groups according to serum vitamin D.

Table (2) : Correlation between serum vitamin-D (ng/ml) and different parameters in each group and total sample.

Serum vitamin-D (ng/ml)	Total (n=100)		Non GDM (n=91)		GDM (n=9)	
	r	P	r	p	r	p
Age (years)	0.083	0.411	0.066	0.534	0.222	0.565
Body weight (kg)	0.158	0.116	0.146	0.166	0.301	0.432
Height (cm)	0.298*	0.003*	0.265*	0.011*	0.685*	0.042*
BMI (kg/m²)	0.061	0.549	0.058	0.583	0.076	0.846
Hip Circumference	0.061	0.546	0.082	0.442	-0.195	0.615
Waist circumference	0.055	0.588	0.046	0.665	0.181	0.641
Waist hip ratio	-0.016	0.878	-0.055	0.604	0.514	0.157
Systolic	-0.063	0.531	-0.020	0.854	-0.391	0.299
Diastolic	0.007	0.944	-0.008	0.943	0.249	0.519
Pulse	0.105	0.301	0.107	0.312	0.063	0.872
Temperature	-0.150	0.136	-0.146	0.167	-0.228	0.556
RR	0.036	0.723	0.010	0.928	0.301	0.431
Fasting Blood glucose At 1 <sup>st</sup> visit	0.088	0.382	0.053	0.621	0.403	0.282
Blood glucose After 2hr. At 1 <sup>st</sup> visit	0.037	0.712	0.031	0.773	0.158	0.685
Serum .Insulin	-0.133	0.186	-0.138	0.192	-0.178	0.647
HOMA IR	-0.119	0.238	-0.126	0.234	-0.203	0.600
Fasting Blood glucose at 2 <sup>nd</sup> visit	-0.024	0.815	-0.027	0.800	-0.147	0.706
Blood glucose After 1hr. at 2 <sup>nd</sup> visit	0.094	0.350	0.127	0.231	0.141	0.718
Blood glucose After 2hr. at 2 <sup>nd</sup> visit	0.012	0.903	-0.004	0.968	-0.128	0.742
HGA1C	0.135	0.181	0.172	0.104	0.155	0.690

CONCLUSION

The results indicated that there was statistical positive correlation between 25(OH) vitamin D3 and height in the total sample in GDM group. However, no statistical significant was observed regarding BMI, Serum insulin and serum vitamin D level between the two studied groups.

