

# Serum Vitamin D Levels in Women With Gestational Diabetes

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## Background

Insulin resistance and diabetes mellitus are associated with decreased serum vitamin D level (1,2). This study was performed to evaluate the serum vitamin D levels in patients with gestational diabetes mellitus (GDM).

## Methods

This study consisted of 38 patients with GDM who followed up in Haseki Training and Research Hospital's Endocrinology outpatient clinic. GDM was diagnosed with 50 g (if postprandial 1. hour > 130-199 mg/dl) and then 100 g oral glucose tolerance test (OGTT) in 24-28 gestational weeks. The cut off criteria for GDM were as following at least two of results as; fasting blood glucose: 95 mg/dl, postprandial 1. hour: 180 mg/dl, 2. hour: 155 mg/dl, 3. hour: 140 mg/dl. Serum vitamin D level and biochemical parameters were analyzed. Patients were divided into two groups as Group A (vitamin D < 20 ng/ml) and Group B (> 20 ng/ml).

## Results

Mean BMI was  $28.37 \pm 4.02$  in Group A,  $25.62 \pm 5.60$  in Group B, (p: 0.033). Mean peripartum HbA1c was  $5.51 \pm 0.54$  % in Group A and  $5.04 \pm 0.48$  % in Group B, (p: 0.006). There was no any statistical difference in other biochemical parameters. Vitamin D was found to be negatively correlated with BMI (r: -0.377, p: 0.03) and peripartum HbA1c (r: -0.424, p: 0.014).

	Group A - GDM with initial vitamin D $\leq$ 20 ng/ml (n: 17)	Group B - GDM with initial vitamin D > 20 ng/ml (n: 21)	P value
BMI (kg/m <sup>2</sup> )	$28.37 \pm 4.06$	$25.62 \pm 5.60$	<b>0.033</b>
Fasting blood glucose (mg/dl)	$96.17 \pm 13.51$	$89.93 \pm 10.63$	0.341
HbA1c in peripartum (%)	$5.51 \pm 0.54$	$5.04 \pm 0.48$	<b>0.006</b>
Insulin (U/l)	$9.21 \pm 3.12$	$12.44 \pm 4.95$	0.027

**Table 1:** Comparison of metabolic and laboratory parameters of study groups

## Conclusion

Vitamin D has a close relationship with BMI and peripartum HbA1c value. Moreover, decreased serum vitamin D level was correlates with higher BMI and HbA1c. Serum vitamin D level should be analyzed and followed up in patients during pregnancy.

## References

1. Lapillonne A. Vitamin D deficiency during pregnancy may impair maternal and fetal outcomes. Med Hypotheses.
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