



COMPRATIVE STUDY OF VITAMIN D LEVELS IN NORMAL PREGNANCY AND GESATIONAL DIABETES MELLITUS AT TERM

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ABSTRACT **Background and aims:-** Comparative study of vitamin D level in normal pregnancy and gestational diabetes mellitus at term is being studied **Methods:-** The study was conducted in women at term pregnancy diagnosed as GDM in DMCH Darbhanga. **Results:-** Primigravida with GDM was found to have higher risk of developing vitamin D deficiency.

KEYWORDS : Deficiency of VITAMIN D, GDM, VITAMIN D

INTRODUCTION:

Gestational diabetes mellitus is defined as any degree of glucose intolerance with onset or first recognition during pregnancy specifically at 24-28 weeks of pregnancy.

Prevalence varies from 3.8 to 21 % in different parts of country which depends upon difference in age,BMI ,socioeconomic status of female and cultural difference also an diagnostic criteria used.

GDM causes serous adverse maternal and fetal and neonatal outcomes like congenital anomalies,birth trauma,respiratory distress,macrosomia,neonatal jaundice and neonatal hypoglycaemia. VitaminD deficiency is found in 1 billion population belonging to all ages and ethnic groups,india being one of them.VitaminD in mothers during pregnancy can cause adverse effect in growing fetus such as low birth weight,poor postnatal growth,lower bone mineral content,impair glucose hemostasis.

VitaminD metabolism during pregnancy is affected by p;acental function.Perinatal investigation studying GDM in animal models where fascinated on findings that pancreatic exocrine function and insulin sensitivity improves with VitaminD.Therefore somewhere or other GDM is connected with vitaminD deficiency which futher will lead to adverse effects on both mother and children.

REVIEW OF LITERATURE

In normal pregnancy hyperplasia of the insulin secreting pancreatic beta cells ,increase in insulin and its sensitivity would shadow the early insulin resistance.

In GDM there is failure of beta pancreatic cell to compensate this increase in demand of insulin,reason being autoimmunity against beta cells impaired in insulin secretion through highly penetrable genetic abnormalities,down regulation of insulin receptor all of which finally lead to insulin insufficiency.

Vitamin D deficiency include ageing ,obesity,limited sun exposure,regular use of sun screen,dark screen ,extensive clothing,malabsorbtion syndrome, cystic fibrosis.

MATERIALS AND METHODS:

The study was conducted in women at term pregnancy,diagnosed as GDM in DMCH Darbhanga.

Inclusion Criteria:

CASES :Age 18-35yrs of singleton gestation,GDM at 24-28 weeks of gestation with a 75 gram oral GTT.

Exclusion Criteria:

Patient with any other comorbidity affecting VitaminD level like DM1 and 2,chronic renal disease,fat malabsorption,gastric bypass surgery,hepatic dysfunction.

ESTIMATION

The study population was screened based on the inclusion and exclusion criteria.They categorized into cases and controls.A blood samole was collected from each subject by venepuncture for determination of serum 25OH-D and was send to lab.

STATISTICAL ANALYTICS

Statistical analysis of association of VitaminD in GDM and controls

where compared and was studied by odds ratio 94%confidence interval.

Student t-test and chisquare test and results were tabulated and analysed

COMPRASION OF AGE BETWEEN CASE AND CONTROLS

COMPARISON OF AGE BETWEEN CASE AND CONTROLS					
			CONTROL	CASE	TOTAL
AGE	<25	Count	9	6	15
		% Within Group	30%	20%	25%
	25-30	Count	14	16	30
		% Within Group	46.7%	53.3%	50%
	30-35	Count	7	8	15
		% Within Group	23.3%	26.7%	25%
Total			30	30	60
Count		% Within Group	100%	100%	100%

CHI SQUARE TEST

Pearson chi square	value	df	Asymp.Sig(2-sided)
	800	2	.670

COMPARISON OF BMI BETWEEN CASES AND CONTROL

BMI		CONTROL	CASE	TOTAL
<18.5	COUNT	1	1	2
	% within group	3.3%	3.3%	3.3%
18.5-24.9	COUNT	18	7	25
	% Within group	60%	23.3%	41.7%
25-29.9	COUNT	9	16	25
	% within group	30%	53.3%	43.17%
>30	COUNT	2	6	8
	% Within group	6.7%	20%	13.3%
TOTAL	COUNT	30	30	60
	% Within group	100%	100%	100%

COMPARISON OF MEAN SERUM VITAMIN D LEVELS BETWEEN CASES AND CONTROLS:

	GROUP	N	MEAN	Std deviation	Std error mean	t	P value
Vitamin D	Control	30	20.376	5.137565	0.937987	2.946	0.005
	case	30	15.68267	7.054254	1.287925		

CONCLUSION

Primi gravida with GDM was found to have higher risk of developing vitamin D deficiency.

When vitamin D levels are considered for deficiency (<20ng/ml) no statistically significant difference was found between cases and controls. Larger comparative studied is needed to established a causative association between GDM and maternal vitamin D deficiency.

REFERENCES:

- 1) Chiu KC , Chu A ,Go VLW,Saad MF. Hypovitaminosis D is associated with insulin resistance and Beta cell dysfunctions. Am J Clin
- 2) Gorgal R , GonCalves E , Barros M , NAMORA G, Magalhes A , Rodreigues T, et AL. Gestational diabetes mellitus :A risk factor for non elective CS.