

CORRELATION OF VITAMIN D LEVELS IN NORMOTENSIVE AND PRE-ECLAMPTIC PATIENTS IN LABOUR

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OBJECTIVE

To evaluate maternal vitamin D levels in normotensive and pre-eclamptic patients in labor.

INTRODUCTION:

Vitamin D - nonclassical actions- promoting insulin action and secretion, immune modulation and lung development. It therefore has the potential to influence many factors in the developing fetus. Some have suggested that the requirement for vitamin D in these women may be up to 6000 iu/day and the ideal vitamin D regimen to prevent and treat vitamin D insufficiency in utero is unknown. Calcitriol exerts the hormonal action via binding to nuclear vitamin D receptors, which are present throughout the body, including pregnancy-specific tissues such as the placenta and uterine placental decidua. The placenta and decidua as well as other important target cells such as immune and endothelial cells have the molecular machinery for local production of calcitriol .

Pre-eclampsia is thought to originate in early pregnancy when the maternal immune system limits placental citriol can be considered a pregnancy-supporting factor that could work through several mechanisms to reduce pre-eclampsia risk, including a direct influence of calcitriol on implantation, placental invasion and angiogenesis .It is also believed to be important in directing immune responses by dendritic cells and macrophages at the fetal-placental interface as well as immunological adaptation by the mother to reduce the risk of infection and inflammation.

MATERIALS AND METHODS:

The study was conducted in pregnant patients in labour room, diagnosed as pre eclampsia and normotensive patients in first stage of labour, of Father Muller Medical College and Hospital between September 2016-2018. Study type: Comparative case control study

SAMPLE SIZE:

Cases – 50 patients diagnosed as pre eclampsia in labour (Pre-eclampsia- 29, Eclampsia- 21)

Controls – 50 normotensive patients in labour

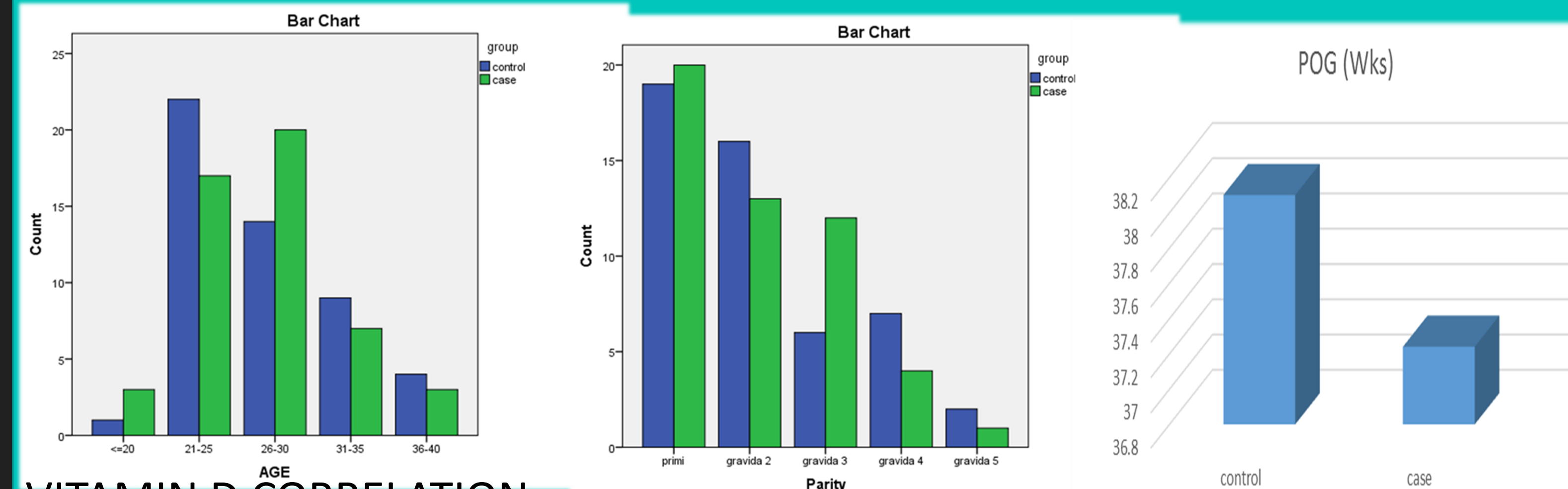
STATISTICAL METHODS

Independent –t-test

Pearson's chi-square test

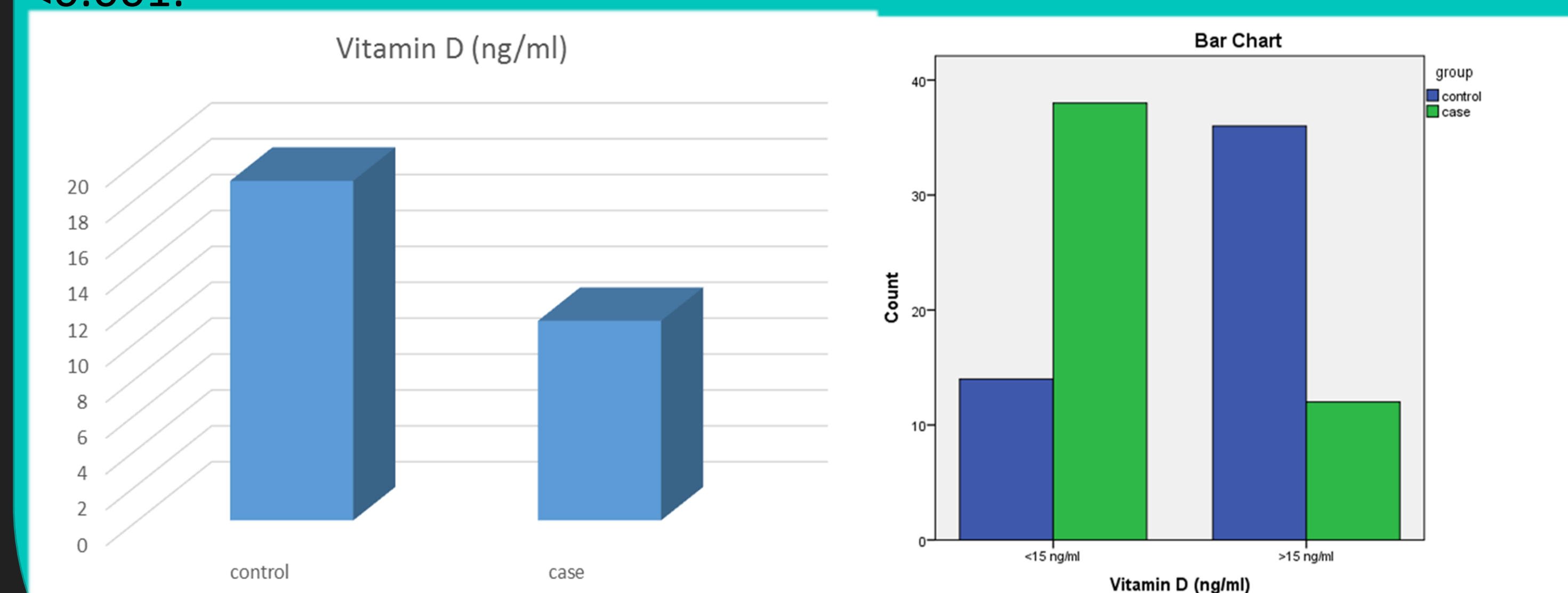
DEMOGRAPHIC FACTORS:

Parameters	P value
Age	0.542
Parity	0.480
Gestational age	0.009



VITAMIN D CORRELATION:

The maternal vitamin D levels in the study group (cases) were relatively lower with a median value of 11.12 ng/ml as compared to 18.12 ng/ml in the control group. This difference in the median maternal vitamin D levels of both the groups was found to be statistically significant with p value of <0.001.



DISCUSSION

In our study,

- age and parity did not affect the Vitamin D levels- So its an independent risk factor for the development of pre-eclampsia.
- the difference in the period of gestation in the cases and control was significant might be because of the induction of preeclamptic patients in the earlier gestation than normotensive patients.
- the cut-off for Vitamin D deficiency taken was 15ng/ml. - - A study done by Ringrose et al . has taken a cut-off of 50nmol/l(20ng/ml).
- In the contrast study by Shand et al, the serum 25OHD concentration levels at the cutoff points of <37.5(15ng/ml) , <50 or <75 nmol.
- In the present study, the Serum vitamin D levels were relatively lower with a median value of 11.12 ng/ml as compared to 18.12 ng/ml in the control group. This difference in the median maternal vitamin D levels of both the groups was found to be statistically significant with a p value of <0.001. the supporting studies with our study were by Bodnar et al., Ringrose et al, Gupta et al. and contrary to our study, were studies done by Shand et al, Powe et al. However, the limitations of this study were a small sample size, and selection bias in selecting significant number of eclamptic patients.

CONCLUSION:

Vitamin D deficiency is an independent modifiable risk factor for development of preeclampsia. Future research is needed to determine the effect of vitamin D supplementation on the incidence of gestational hypertension and Preeclampsia.

- References :1.Fernando arias. Arias' Practical Guide to High-Risk Pregnancy and Delivery, 4th ed. A South Asian Perspective: ; 2014; 186-88
- 2.Gabbe
- 3.Holick MF. Vitamin D deficiency. N Engl J Med. 2007;357:266–81.