

Maternal serum Ferritin levels and its effect on cord blood hemoglobin in patients with Gestational diabetes mellitus

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Introduction

- GDM is common health problem with prevalence 1-5% and is responsible for various genetic and structural abnormalities.
- Serum ferritin maintains iron stores. Iron has strong oxidative properties and cause various metabolic abnormalities like GDM.
- GDM causes increase oxygen consumption and results in increased erythropoiesis complemented with vasculopathy which limits iron transport in cord hemoglobin despite increase fetal demand. The causal relationship between GDM, Ferritin & cord blood hemoglobin is still under debate.



Objective

To Find out the association between serum ferritin levels to cord blood hemoglobin in Gestational Diabetes Mellitus.

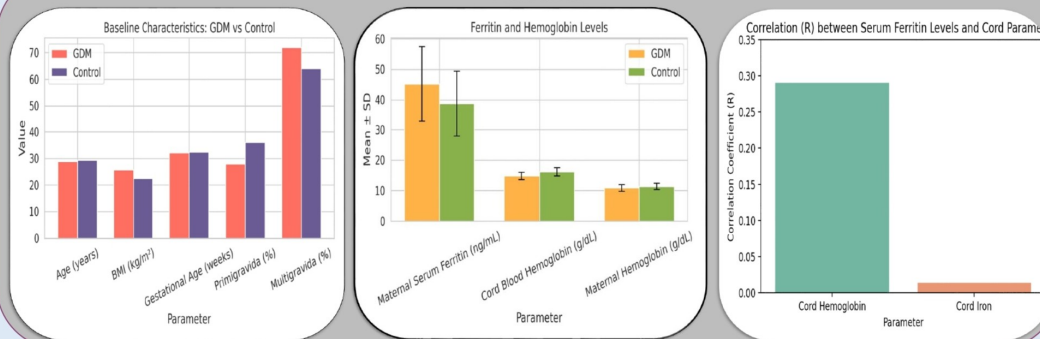


Methodology

The study was conducted from April 2019 to April 2020. The sample size of the study was calculated using the WHO sample size calculator and a total of 100 participants were recruited for the study. The patients were divided into two groups.

Group A(cases) 50 GDM cases aged between 20-35 years while **Group B(control)** group 50 females with normal pregnancies. Diagnosis of GDM was made at 24 -28 weeks of gestation that was consistent with American Diabetes Association guidelines.

Results



Discussion

- The mean age of all participants was 29.2 ± 5.6 with 72% of multigravida were suffering from GDM. This finding is consistent with a study done at a university hospital in Saudi Arabia.
- Our study showed significantly high ferritin i.e., 42.3 ± 6.7 levels and iron levels i.e., $106 \pm$ among GDM females as opposed to those with normal pregnancy who had a mean serum ferritin level of 34.4 ± 3.8 , these findings were comparable with Guo W et. al study.
- On evaluation of neonatal parameters cord hemoglobin was significantly lower among newborns of GDM mothers than non-GDM patients. Similar results were observed in a study conducted at El-Nile Insurance Hospital, Shubra El Khema.
- The weight of newborns and placenta were significantly higher in babies of GDM mothers consistent with Chauhan et. al. results.
- Similar negative correlation between serum ferritin and cord hemoglobin was observed in another study conducted at Isfahan hospital.



Conclusion

Serum ferritin level is significantly increased in GDM, indicating its role in oxidative stress and a marker of inflammation in fetal intrauterine and post-partum health. The oxidations stress may affect the transport iron from placenta to fetus which leads to decreased cord hemoglobin levels in GDM patients.



References

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