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Effect of Daily Oral Supplementation of Vitamin D3 in Iron and 25 Hydroxyvitamin D Deficient Pregnant Women: a Randomized Placebo-Controlled Study

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SUMMARY. **Iron and 25-hydroxyvitamin D [25(OH)D] deficiency conditions co-exist among pregnant women. This study is conducted to evaluate the efficacy of vitamin D3 1000 IU supplementation on improving the haematological status of pregnant women. The intervention group received vitamin D3 (1000 IU) along with ferrous sulphate, folic acid, calcium and vitamin B complex and control group received placebo for a period of 12 weeks. Multivariate Analysis of Covariance (MANCOVA) was performed on primary endpoints. Post hoc analysis was performed on pairwise comparisons. The mean difference between intervention and control group for haemoglobin being (-0.35g/dL, 95% CI :0.56,-0.15), p < 0.001, 25(OH)D (0.72 ng/mL, 95% CI: -0.33,1.77) p = 0.178, s-iron(-1.90 µg/dL 95% CI: -12.82,9.02), p = 0.731, s-ferritin (-0.09 ng/mL, 95% CI: -0.58,0.40), percent transferrin (0.18, 95% CI: -2.81,3.17) and total iron binding capacity (-7.92 µg/dL, 95% CI: 39.35,23.50). Significant difference was observed from the baseline to study conclusion visit. No statistically significant difference was noticed between intervention and placebo groups and on maternal and neonatal outcomes.**

RESUMEN. Las condiciones de deficiencia de hierro y 25-hidroxivitamina D [25(OH)D] coexisten entre las mujeres embarazadas. Este estudio se realiza para evaluar la eficacia de la suplementación con vitamina D3 1000 UI para mejorar el estado hematológico de las mujeres embarazadas. El grupo de intervención recibió vitamina D3 (1000 UI) junto con complejo sulfato ferroso, ácido fólico, calcio y vitamina B y el grupo control recibió placebo durante un período de 12 semanas. El análisis multivariado de covarianza (MANCOVA) se realizó en los puntos finales primarios. El análisis post hoc se realizó en comparaciones por pares. La diferencia media entre el grupo de intervención y control para la hemoglobina es (-0.35g dL, IC 95%: 0.56, -0.15), p < 0.001, 25(OH)D (0.72 ng/mL, IC 95%: -0.33, 1.77) p = 0.178, hierro s (-1.90 µg/dL IC 95%: -12.82,9.02), p = 0.731, s-ferritina (-0.09 ng/mL, IC 95%: -0.58,0.40), porcentaje transferrina (0.18, IC 95%: -2.81,3.17) y capacidad total de unión al hierro (-7.92 µg/dL, IC 95%: 39.35,23.50). Se observó una diferencia significativa desde el inicio hasta la visita de conclusión del estudio. No se observaron diferencias estadísticamente significativas entre los grupos de intervención y placebo y en los resultados maternos y neonatales.

KEY WORDS: iron deficiency anaemia, 25(OH)D, pregnancy, supplementation, vitamin D_3.

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