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### Plasma Vitamin D Levels Among Nigerian Mothers and their Preterm Infants

*Niveau de vitamine D plasmatique chez les mères nigérianes et leurs nourrissons prématurés*

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#### ABSTRACT

**OBJECTIVES:** Preterm delivery abruptly separates a baby from the placental supply of nutrients which are mostly accreted during the third trimester. The study aimed to determine the relationship between plasma levels of vitamin D in mothers and their preterm infants within the first 24 hours of life in a Nigerian population and how this is related to the intrauterine growth pattern.

**METHODS:** This hospital-based panel study of 121 preterm infants and their mothers was carried out in three neonatal units in southwest Nigeria. The plasma levels of vitamin D were assayed in mothers and their corresponding singleton infants while anthropometric parameters of the babies were also recorded.

**RESULTS:** The prevalence of low plasma Vitamin D was 33.1% in the mothers and 43.8% in their preterm neonates. Plasma vitamin D levels in infants showed a moderately strong positive correlation with maternal plasma levels at birth ( $r = 0.517$ ;  $p < 0.001$ ). Mean maternal plasma Vitamin D was lowest in mothers whose babies were small for gestational age.

**CONCLUSION:** Notably high proportions of Nigerian preterm infants and their mothers had low plasma Vitamin D around the period of birth and low maternal vitamin D is associated with delivery of small-for-gestational-age babies. Supplementation of Vitamin D in pregnant women and preterm babies is recommended.

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**KEYWORDS:** Preterm infant, Vitamin D, Pregnant women, Small for gestational age

#### RÉSUMÉ

**OBJECTIFS:** L'accouchement prématuré sépare brusquement le bébé de l'apport placentaire de nutriments, principalement accumulés au cours du troisième trimestre. L'étude visait à déterminer la relation entre les niveaux plasmatiques de vitamine D chez les mères et leurs nourrissons prématurés dans les 24 premières heures de vie dans une population nigériane, ainsi que le lien avec le schéma de croissance intra-utérin.

**MÉTHODES:** Cette étude de panel hospitalière portant sur 121 nourrissons prématurés et leurs mères a été réalisée dans trois unités néonatales du sud-ouest du Nigeria. Les niveaux plasmatiques de vitamine D ont été dosés chez les mères et leurs nourrissons uniques correspondants, tandis que les paramètres anthropométriques des bébés ont également été enregistrés.

**RÉSULTATS:** La prévalence de la carence en vitamine D plasmatique était de 33,1 % chez les mères et de 43,8 % chez leurs nouveau-nés prématurés. Les niveaux plasmatiques de vitamine D chez les nourrissons présentaient une corrélation positive modérément forte avec les niveaux plasmatiques maternels à la naissance ( $r = 0,517$  ;  $p < 0,001$ ). La vitamine D plasmatique maternelle moyenne était la plus faible chez les mères dont les bébés étaient petits pour l'âge gestationnel.

**CONCLUSION:** Des proportions notablement élevées de nourrissons prématurés nigériens et de leurs mères présentaient de faibles niveaux plasmatiques de vitamine D autour de la période de naissance, et un faible taux de vitamine D maternelle est associé à la naissance de bébés petits pour l'âge gestationnel. Une supplémentation en vitamine D chez les femmes enceintes et les bébés prématurés est recommandée. WAJM 2024; 41 (5): 555 - 561

**MOTS-CLÉS:** Nourrisson prématuré, Vitamine D, Femmes enceintes, Petit pour l'âge gestationnel

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