

VOLUME 41, NUMBER 2  
February 2024

ISSN 0189 - 160X

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# WAJMJ

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**WEST AFRICAN JOURNAL OF MEDICINE**

ORIGINALITY AND EXCELLENCE IN MEDICINE AND SURGERY



**OFFICIAL PUBLICATION OF**  
THE WEST AFRICAN COLLEGE OF PHYSICIANS *AND*  
WEST AFRICAN COLLEGE OF SURGEONS



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### Selenium Deficiency as a Risk Factor for Peripartum Cardiomyopathy

#### *Déficiencia en Sélénium como Factor de Riesgo para la Cardiomiopatía Pérupartum*

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#### ABSTRACT

**BACKGROUND:** Peripartum cardiomyopathy (PPCM) is a multifactorial disease. Although the specific aetiology and pathogenesis of PPCM are unknown, several hypotheses have been proposed, including selenium deficiency. However, the risk of PPCM from selenium deficiency was not previously quantified. This post-hoc analysis of peripartum cardiomyopathy in Nigeria (PEACE) registry data aimed to determine if selenium deficiency is an independent risk factor for PPCM.

**METHODS:** Apparently healthy women who delivered within the previous 8 weeks and PPCM patients in Kano, Nigeria, were compared for selenium deficiency (<70µg/L) and other relevant socio-demographic and clinical characteristics. Selenium level was measured at recruitment for each subject. Independent predictors of PPCM were determined using logistic regression models.

**RESULTS:** 159 PPCM patients and 90 age-matched controls were consecutively recruited. 84.9% of the patients and 3.3% of controls had selenium deficiency. Selenium deficiency independently increased the odds for PPCM by 167-fold while both unemployment and lack of formal education independently increased the odds by 3.4-fold.

**CONCLUSION:** Selenium deficiency was highly prevalent among PPCM patients in Kano, Nigeria, and significantly increased the odds for PPCM. These results could justify screening of women in their reproductive years for selenium deficiency, particularly those living in regions with high incidence of PPCM. The results also call for the setting up of a definitive clinical trial of selenium supplementation in PPCM patients with selenium deficiency, to further define its benefits in the treatment of PPCM.

WAJM 2024; 41 (2): 209- 214.

**KEYWORDS:** Peripartum Cardiomyopathy; Selenium Deficiency; Risk Factor

#### RÉSUMÉ

**CONTEXTE:** La cardiomyopathie pérupartum (CMPP) est une maladie multifactorielle. Bien que l'étiologie spécifique et la pathogenèse de la CMPP soient inconnues, plusieurs hypothèses ont été proposées, notamment la carence en sélénium. Cependant, le risque de CMPP lié à la carence en sélénium n'a pas été précédemment quantifié. Cette analyse post-hoc des données du registre de la cardiomyopathie pérupartum au Nigéria (PEACE) visait à déterminer si la carence en sélénium est un facteur de risque indépendant de la CMPP.

**MÉTHODES:** Des femmes apparemment en bonne santé ayant accouché dans les 8 semaines précédentes et des patientes atteintes de CMPP à Kano, au Nigéria, ont été comparées pour la carence en sélénium (<70µg/L) et d'autres caractéristiques socio-démographiques et cliniques pertinentes. Le taux de sélénium a été mesuré au recrutement pour chaque sujet. Les prédicteurs indépendants de la CMPP ont été déterminés à l'aide de modèles de régression logistique.

**RÉSULTATS:** 159 patientes atteintes de CMPP et 90 témoins appariés selon l'âge ont été recrutés consécutivement. 84,9% des patientes et 3,3% des témoins présentaient une carence en sélénium. La carence en sélénium augmentait indépendamment les chances de CMPP de 167 fois, tandis que le chômage et le manque d'éducation formelle augmentaient indépendamment les chances de 3,4 fois.

**CONCLUSION:** La carence en sélénium était très répandue parmi les patientes atteintes de CMPP à Kano, au Nigéria, et augmentait significativement les chances de CMPP. Ces résultats pourraient justifier le dépistage de la carence en sélénium chez les femmes en âge de procréer, en particulier celles vivant dans des régions à forte incidence de CMPP. Les résultats appellent également à la mise en place d'un essai clinique définitif sur la supplémentation en sélénium chez les patientes atteintes de CMPP présentant une carence en sélénium, afin de définir davantage ses avantages dans le traitement de la CMPP.

WAJM 2024; 41 (2): 209- 214.

**MOTS-CLÉS:** Cardiomyopathie Pérupartum ; Carence en Sélénium ; Facteur de Risque

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