Evaluation of Serum Electrolytes (Na^+, K^+, HCO_3^-, Cl^-, Mg^{2+}, Ca^{2+}) in Pregnant Women with Malaria in Aba North Local Government Area, Abia State, Nigeria

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Abstract
Background:
Malaria in pregnancy is a significant public health issue in sub-Saharan Africa, contributing to maternal and fetal complications. Electrolyte imbalances are often overlooked in clinical management, yet they can exacerbate the severity of disease outcomes.
Objectives:
To evaluate serum electrolyte levels (Na^+, K^+, HCO_3^-, Cl^-, Mg^{2+}, Ca^{2+}) in pregnant women with malaria in Aba North LGA, Abia State, Nigeria.
Methods:
A comparative cross-sectional study involving 100 pregnant women (50 malaria-positive, 50 malaria-negative) was conducted. Structured questionnaires were administered, and 5 ml of venous blood was collected for laboratory analysis. Electrolytes were measured using an ion-selective analyzer.
Results:
Malaria-positive participants had significantly lower mean serum levels of sodium (132.6 ± 4.8 mmol/L), potassium (3.2 ± 0.6 mmol/L), bicarbonate (19.1 ± 2.2 mmol/L), and calcium (1.8 ± 0.4 mmol/L) compared to controls. The prevalence of hyponatremia and hypokalemia was 62% and 44% respectively in the malaria group.
Conclusion:
Electrolyte imbalances are prevalent among pregnant women with malaria and may contribute to adverse maternal and fetal outcomes. Routine electrolyte monitoring in antenatal malaria cases is recommended for improved management.

Keywords: *Electrolytes, Pregnancy, Malaria, Nigeria, Sodium, Potassium, Calcium, Public Health*

1. Introduction
Malaria remains endemic in Nigeria and poses increased risks during pregnancy, including anemia, stillbirth, and maternal death...

2. Materials and Methods
2.1 Study Area: Aba North is a densely populated urban area in southeastern Nigeria...

3. Results

3.1 Participant Characteristics: The average age was 27.4 years (range 19–42)...

4. Discussion

This study confirms that malaria in pregnancy is associated with significant alterations in electrolyte profiles...

5. Conclusion

Electrolyte disturbances are common in pregnant women with malaria in Aba North LGA...

6. Recommendations

- Antenatal clinics should include basic serum electrolyte testing in malaria cases...

7. Ethical Approval

This study received ethical clearance from the relevant Institutional Review Board...

8. Funding

No external funding was received.

9. Conflicts of Interest

The authors declare no conflict of interest.

10. References

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