

REVIEWER'S REPORT

Manuscript No.: IJAR- 59430

Title: Valeur d'orientation des anomalies biologiques non spécifiques dans le diagnostic différentiel de la dengue et du paludisme en Mauritanie,

Recommendation:

Accept after minor revision

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality			✓	
Clarity			✓	
Significance	✓			

Reviewer's ID: Dr. Bilqees Hamza

Detailed Reviewer's Report

General Overview

This manuscript presents a prospective cross-sectional study conducted at the Military Hospital of Nouakchott in collaboration with the National Institute of Public Health Research (INRSP) in Mauritania. The study evaluates the diagnostic orientation value of three common non-specific laboratory abnormalities—leukopenia, thrombocytopenia, and hepatic cytolysis—in differentiating between dengue and malaria among febrile patients during the rainy season.

The evaluated sample comprises 339 febrile patients categorized into four diagnostic groups: dengue alone ($n = 236$), malaria alone ($n = 40$), dengue-malaria co-infection ($n = 22$), and non-identified etiology ($n = 41$). The authors demonstrate that leukopenia (44.1%), thrombocytopenia (51.3%), and hepatic cytolysis (47.9%) are significantly more prevalent in the dengue-alone group compared to the malaria-alone group (7.5%, 12.5%, and 10.0%, respectively).

The main statistical analysis reveals high specificity (87.5% to 92.5%) and strong positive predictive values (PPV) (96.0% to 97.2%) for guiding diagnostic suspicion toward dengue. However, the modest sensitivity of these markers (44.1% to 51.3%) and their low negative predictive values (NPV) (21.9% to 23.3%) clearly indicate that the absence of these abnormalities cannot rule out dengue. Furthermore, the high frequency of these abnormalities among co-infected patients (59.1% to 77.3%) demonstrates that they cannot be used to exclude concurrent malaria.

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The manuscript addresses a critical clinical and epidemiological challenge in resource-limited settings across West Africa. The approach is pragmatic, the statistical methodology (Wilson confidence intervals, contingency tables) is sound, and the study's limitations are discussed transparently.

Key Strengths

- Clinical Relevance:** The study responds to a pressing public health need in Mauritania, where clinical overlap between malaria and dengue during the rainy season creates significant diagnostic ambiguity.
- Assessment of Co-infections:** Evaluating the co-infection group ($n = 22$) is a major strength, proving that the presence of cytopenias or liver transaminase elevation should not preclude malaria screening.
- Transparent Performance Reporting:** The authors rightly note that the high PPV observed is directly tied to the high prevalence of dengue in their hospital cohort (69.6%), avoiding over-generalized or overstated diagnostic claims.
- Honest Evaluation of Limitations:** The discussion explicitly acknowledges key study constraints, such as the lack of individual-level data for multivariate adjustments, the small size of the malaria-alone group, and potential classification bias related to isolated IgM serology.

Recommendations for Improvement

To ensure the highest academic quality prior to final publication, the authors are invited to address the following minor points:

- Clarify the Recruitment Flow:**

As mentioned in the discussion, adding a brief textual summary in the *Materials and Methods* section regarding the total initial febrile pool and explicit reasons for exclusion leading to the final 339 patients will improve procedural transparency.

- Specify Dengue Confirmation Testing:**

The text notes that 217 cases were confirmed via NS1 antigen and 19 via IgM. Clarifying the exact proportion of samples that underwent confirmatory RT-PCR testing at the Institut Pasteur in Dakar will further strengthen the reference standard description.

- Discuss Marker Combination Potential:**

Although individual patient data was unavailable to construct a combined risk score, a brief remark in the *Practical Implications* section regarding the cumulative clinical value of presenting two or three simultaneous abnormalities could offer helpful guidance for triage.

- Confirm Laboratory Thresholds:**

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The cut-off threshold for AST/ALT was set at $> 37 \text{ IU/L}$. Stating whether this corresponds to the standard upper limit of normal for the laboratory at the Military Hospital of Nouakchott will confirm assay alignment.

5. Minor Editorial Corrections:

A final proofreading pass across the text will ensure uniform formatting of technical terms and medical abbreviations.

Final Evaluation and Verdict

This manuscript provides valuable empirical evidence for managing febrile illness differentials in Mauritania and the broader West African region. The interpretation is well-grounded, scientifically sound, and appropriately cautious.

The manuscript is **accepted with minor revisions**. Incorporating the minor clarifications requested above will ensure the paper is fully prepared for publication.