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REVIEWER'S REPORT

Manuscript No.: JNHM- 187

Title: Evaluation of serum Lipocalin-2 Level as potential biomarkers for respiratory bacterial infection.

Recommendation:

Accept after minor revision

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

Reviewer's Name: Bilquees Hamza

Detailed Reviewer's Report

General Overview

The academic article titled "Evaluation of serum Lipocalin-2 Level as potential biomarkers for respiratory bacterial infection" investigates the diagnostic utility of serum Lipocalin-2 (LCN2/NGAL) in patients with microbiologically confirmed bacterial respiratory tract infections ($n = 90$) compared with age- and sex-matched healthy controls ($n = 90$) at Al-Hilla Teaching Hospital in Babylon, Iraq. Using sandwich ELISA quantification, the study evaluates overall group differences, variations across four causative bacterial pathogens (*Streptococcus pneumoniae*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, and *Haemophilus influenzae*), and receiver operating characteristic (ROC) diagnostic performance.

A notable strength of the manuscript is its well-defined clinical inclusion/exclusion protocol and balanced case-control design. By excluding confounding conditions known to independently elevate circulating LCN2—such as chronic kidney disease, acute kidney injury, malignancies, autoimmune conditions, and recent major surgery—and pairing bacterial culture confirmation with ROC curve analysis ($\text{AUC} = 0.83$), the authors present a clear, focused clinical investigation supported by relevant contemporary literature.

However, to meet the standards required for final academic publication, the manuscript requires several minor revisions to reconcile internal numerical/statistical inconsistencies, complete placeholder ethical statements, and clean up table and formatting errors:

- **Statistical and Numerical Inconsistencies in Tables and Text:**

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- In **Table 3** (page 14), the caption erroneously states *"according to site of infection"* and the first column header is labeled *"Age Sub-groups"* rather than *"Bacterial Species"*. Furthermore, the p-value in Table 3 is listed as **0.89 (NS)** while the abstract and body text report **$P = 0.487$** for the same ANOVA ($F = 0.82$), and the footnote beneath Table 3 contradicts itself by stating *"NS: High significant at $P<0.001$"*.
- In **Table 4** (page 15), sensitivity and specificity are reported as decimals (**0.78** and **0.62**) under column headers labeled **"Sensitivity (%)"** and **"Specificity (%)"** (which should read 78% and 62% or have the % symbol removed from the headers).
- In the **Results** narrative (page 12, line 272), the text states that the majority of participants were *"24–43 years of age, with only a small proportion of participants older than 43 years"*, whereas **Table 1** divides age into **25–34**, **35–44**, and **> 45** years, showing that the **> 45** cohort is actually the largest subgroup in both groups (41.1% of patients and 40.0% of controls). Additionally, on page 10 (lines 243–244), the ELISA section states that all results are expressed in **pg/mL** (with an assay range of $4.1\text{--}1000\text{ pg/mL}$), whereas all reported values in the Abstract, Results, and Tables are in **ng/mL** (requiring a note on sample dilution and unit conversion).

- **Ethical Approval Placeholder and Study Dates:** On page 11 (lines 251–252), the Ethical Considerations section still contains an unedited template instruction: *"The institutional ethics committee name and approval number should be inserted according to the actual approval document"*—this must be replaced with the actual institutional review board name and protocol approval number. Additionally, the study period in Methods (*"March 2026 through August 2026"*) should be double-checked for accuracy.
- **Citation and Copyediting Polish:** On page 17 (line 372), the text cites *"Bachman et al. (2009)"* for pulmonary *Klebsiella pneumoniae* iron sequestration, whereas Reference 3 in the bibliography is **Chan et al. (2009)** on the exact same topic. Minor typographical and layout artifacts should also be cleaned up—including *"addition togoving"* (line 77), *"Palop er al."* (line 124), *"Freg."* in Table 3, and the duplicated raw OCR text block underneath Figure 1 on page 13.

Addressing these table labels, statistical/unit discrepancies, and the ethics committee placeholder will ensure the manuscript is fully polished for publication.

ACCEPTED WITH MINOR REVISION