

Review Form 1.7

Journal Name:	International Journal of TROPICAL DISEASE & Health
Manuscript Number:	Ms_IJTDH_112605
Title of the Manuscript:	Serum procalcitonin as a biological marker to distinguish between bacterial and non-bacterial exacerbation of COPD
Type of the Article	Original Research Article

[Review Form 1.7](#)

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory REVISION comments</p> <ol style="list-style-type: none"> Is the manuscript important for scientific community? (Please write few sentences on this manuscript) Is the title of the article suitable? (If not please suggest an alternative title) Is the abstract of the article comprehensive? Are subsections and structure of the manuscript appropriate? Do you think the manuscript is scientifically correct? Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<p>Importance for scientific community: The manuscript examines an important biomarker, serum procalcitonin (PCT), for distinguishing between bacterial and non-bacterial exacerbations of the chronic respiratory disease COPD. As infectious COPD exacerbations are major drivers of morbidity and misuse of antibiotics, finding optimal biomarkers for diagnosis is valuable. <u>The study provides evidence for use of PCT with higher cut-off value in clinical detection and management of bacterial COPD exacerbations.</u></p> <p>Suitability of title: The title "Role of serum procalcitonin as diagnostic marker to differentiate bacterial and non-bacterial exacerbation in COPD patients" <u>clearly conveys the study purpose and is suitable.</u> however, as a suggestion, they could revise their title to make it more specific and informative. For example, they could mention the cut-off value of procalcitonin that they found, or the setting and population of their study.</p> <p>Comprehensiveness of abstract:</p> <ul style="list-style-type: none"> The abstract is clear and concise, but it could be improved by using more specific and consistent terminology, such as COPD exacerbations instead of AE COPD, and serum PCT instead of PCT. It should also follow the formatting and style guidelines of the journal: Elaborate on the study design and sampling: <ul style="list-style-type: none"> "It was a comparative cross-sectional study conducted on 80 patients recruited from VMMC and Safdarjung Hospital (mention the location and years duration). 40 patients had stable COPD and 40 had acute exacerbations of COPD." Emphasize the key significant quantitative findings in the Abstract results by rephrasing: <ul style="list-style-type: none"> "Patients with bacterial COPD exacerbations had significantly higher mean serum PCT levels compared to non-bacterial exacerbations (2.58±1.54 vs 0.45±0.51 ng/ml; P=0.0001) based on sputum culture results. PCT cutoff of 0.9 ng/ml differentiated bacterial exacerbations with 100% sensitivity and 76.9% specificity." <p>Appropriateness of manuscript structure: The manuscript follows the conventional structure of medical research papers with dedicated sections for introduction, methods, results, discussion, conclusions. <u>This standard structure facilitates comprehension and is appropriate.</u></p> <p>Scientific correctness: The stated goal to evaluate PCT levels for confirming bacterial COPD exacerbations is scientifically sound. The methodology uses standard laboratory culture techniques and PCT assays to analyse sputum and serum samples. The data analysis employs fitting statistical tests to compare groups. Interpretations of the diagnostic predictive value of defined PCT cut-off levels follow logically from the evidence. <u>So, the manuscript appears scientifically correct., although it could be improved in some respects, such as:</u></p> <ol style="list-style-type: none"> The results section could report the confidence intervals or effect sizes of the results, in addition to the statistical tests and p-values, which would indicate the precision and magnitude of the findings. It could also report any secondary outcomes or subgroup analyses, which might be relevant for the interpretation of the results. The discussion section could compare the results with previous studies more thoroughly and explain how the findings contribute to the existing knowledge or fill a gap in the literature. It could also discuss <u>the potential impact and relevance of the findings for clinical practice and public health</u>, and <u>address the limitations</u> of the small sample size, the lack of viral testing, and the variability of procalcitonin levels. 	

Review Form 1.7

	<p>References: The 27 references cited are largely pertinent to the study topic and provide context on historical findings. Most sources are recently published within the past decade, indicating review of current literature. <u>Some of the references are from studies that have a small sample size, a limited geographic scope, or a low level of evidence, such as case reports, observational studies, or reviews. It might be better to find sources from studies that have a larger sample size, a broader geographic scope, or a higher level of evidence, such as randomized controlled trials, meta-analyses, or systematic reviews.</u></p> <p>Here are some possible studies that They might want to check out:</p> <p>Procalcitonin to Distinguish Viral from Bacterial Pneumonia: A Systematic Review and Meta-analysis. DOI: 10.1093/cid/ciz545.</p> <p>Comparison of Serum Procalcitonin Levels between Patients with Acute Exacerbation of Chronic Obstructive Pulmonary Disease (AECOPD) and Patients with Chronic Obstructive Pulmonary Disease Doi: 10.2174/1573398x19666230315124509</p> <p>Optimal cut-off value of serum procalcitonin in predicting bacterial infection induced acute exacerbation in chronic obstructive pulmonary disease: A prospective observational study. Doi: 10.1177/14799731221108516</p> <p>Serum procalcitonin level in assessing the severity and duration of hospitalization in patients with exacerbation of chronic obstructive pulmonary disease. Doi: 10.52547/umj.33.2.81</p> <p>Measurement of Procalcitonin as an Indicator of Severity in Patients with Chronic Obstructive Pulmonary Disease Admitted with Respiratory Illness. Doi: 10.7759/cureus.28511</p>	
--	---	--

Review Form 1.7

<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>It upholds expected linguistic standards and conventions for publication. however, they could use more transitional words or phrases, such as however, therefore, or in contrast, to connect their results and show the relationships between them.</p>	
<p>Optional/General comments</p>	<p>the article is quite well written. However, some things that could help improve it further:</p> <ol style="list-style-type: none"> 1. Expand on the ethical approvals and informed consent procedures. The brief statement that ethical approval was obtained should be elaborated. Details on informed consent process should be described. 2. Include limitations of the current study in discussion section. limitations of sample size, data measurements, confounding factors etc. 3. Provide more specifics for certain parts in the methods: <ul style="list-style-type: none"> o Mention study design as “comparative cross-sectional study” o How was sample size determined? What statistical power considerations were made? o could provide more details on how were selected and recruited the patients for the study, such as, the source of the patients, setting, locations, recruitment dates (duration, date of data collection, country and city), sampling method, <u>give matching criteria</u> of controls per case, final patients outcomes (death/alive, duration of hospitalization, ICU admission), relation of final outcomes & serum PCT levels and the informed consent process. o Were investigators blinded during measurements/analysis to avoid bias? o Were sputum samples and PCT measurements done only once or in replicates? How was quality controlled? o Were all spirometries done with single spirometer or single operator? o could report the brand, model, and settings of the equipment and instruments that they used, such as the spirometer, the ELISA kit, and the antibiotic disks. o Could there be other explanations for elevated PCT like underlying infections unrelated to AECOPD? How were these accounted for? o Were any validators used along with PCT to confirm bacterial infections? o could describe how were defined and diagnosed COPD and AECOPD, such as the criteria, the instruments, and the cut-off values. o could explain how were collected and processed the sputum samples, such as the timing, the volume, the storage, and the quality control. 4. Provide more specifics for certain parts in the results: <ul style="list-style-type: none"> o use more descriptive labels for tables and figures, such as the variables, the groups, and the units of measurement. o Provide more demographic details in one table (age, gender, all measured Biochemical parameters (LFTs, BUN/Cr, PT, PTT, INR, WBC, Total Leucocyte Count, HB, HCT and etc), admission SPO2, Temperature, COPD Type and COPD severity OR COPD stage based on GOLD criteria, Smoking status & Addiction status, and Spirometer parameters. o they could use subheadings to organize their results into different sections, such as demographic and clinical characteristics, bacterial isolates, procalcitonin levels, and predictive values. 	

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

[Review Form 1.7](#)

Reviewer Details:

Name:	Saeid Esmaeilian
Department, University & Country	Shiraz University of Medical Sciences, Iran