

PEER-REVIEW REPORT

Name of journal: *World Journal of Orthopedics*

Manuscript NO: 72305

Title: Diagnostic Role of Xpert-MTB RIF Assay in Osteoarticular Tuberculosis: A Retrospective Study.

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 06112817

Position: Peer Reviewer

Academic degree: MD, MSc

Professional title: Attending Doctor

Reviewer's Country/Territory: Mexico

Author's Country/Territory: India

Manuscript submission date: 2021-10-11

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-10-12 03:19

Reviewer performed review: 2021-10-18 04:07

Review time: 6 Days

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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SPECIFIC COMMENTS TO AUTHORS

This is an important topic regarding the accuracy of GenXPert in diagnosis of OATB. There is not much information on this topic available worldwide, which makes it a relevant topic. However, the main issue is the way the accuracy of GenXPert as a diagnosis method for OATB, is evaluated. The Composite reference Standard, should be reviewed, because the way it is established overestimates the accuracy of the test being evaluated (genXPert). Please see the comments below for more detail: Methodology: "Clinical specimens of a total of 112 OATB cases were received for diagnosis of TB by GenXPert". You should specify that you are talking about 112 suspected cases. I imagine these are suspected cases, that were later classified into the 4 CRS categories that you mention, but it should be clarified. And it would be useful to know on what clinical basis were these 112 cases suspected to be OATB "The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated to evaluate diagnostic performance of geneXpert assay and microscopy against the culture method" You mention above that you will use a CRS as a gold standard, and your calculations of sensitivity and specificity that you report in your results, are not against culture positive alone. You should clarify. Could you include pathological results of the samples? This has been included in other studies in the CRS. Results: "40 samples were put on culture": please specify why the rest was not put on culture. You mention 37 cases were confirmed to have OATB by CRS. But 35/37 were only genxpert positive, which according to your definition, is a "probable case", one extra case was detected by culture positive, but the case 37, why was it classified as confirmed case? He only received 1.5 months of ATT, according to your table 1. Your description of the results

does not match your definitions of confirmed, probable and possible cases. According to your CRS definitions, you only had 5 confirmed cases. It should say 36 confirmed or probable cases and one possible case. Please clarify. Also, you mention that only 40 samples were cultured. In your table 1 it seems all the 37 “confirmed cases” were cultured, please confirm this and specify in the text. Otherwise the incomplete cases with no culture should not be used in the sensitivity analysis if culture is part of the composite score. Regarding clinical data: you only report sex, age and site of OATB. Do you have information on how many patients had had a previous diagnosis of TB? Or if any of them had a simultaneous diagnosis of TB in another site? This could also be a factor influencing the suspicion of TB diagnosis. And if you are including clinical data in your work, you should also consider including the baseline diagnosis. “Sensitivity of Xpert assay, culture and smear when compared with CRS was found to be 94.6%,13.5% and 16.2% respectively, specificity in all the three types of tests was found to be 100%.” Again, you should revise and redefine your CRS to establish what you are comparing your test (genXPert) to. Normally, you should not include the GenXPert, which is the test you are evaluating, in the definition of your composite score, because you are comparing the genXPert with the genxpert and this is not valid. And this will overestimate the efficacy of GenXPert and give you very high sensitivity scores. CRS usually include, culture positive, histopathology positive, and AFB positive, and clinical or radiological improvement after ATT. Discussion: “However, Muangchan et al. reported 99 cases of OATB during 2-year period. which seems to be quite a large number “ 99 cases out of how many? The denominator is important. If you compare your sensitivities to other studies (ref 18 and 23), other studies report sensitivities around 70-85%, which is more accurate because they do not include genXPert in their gold standard. You should revise that. Did any of the patients included receive ATT prior to the sample collection? This affects the culture mostly. You could go in further



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details of the benefits of genXpert in OATB diagnosis in you discussion. Not only is it more accurate for the diagnosis, it gives quick results and resistance profile. As you mention there is a lack of information on the utility of Genxpert inOATB, you should include all ref on the topic, such as: - The role of Xpert MTB/RIF assay in the diagnosis of tubercular spondylodiscitis Justin Arockiaraj • Joy S. Michael • Rohit Amritanand • Kenny Samuel David Venkatesh Krishnan .

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Reviewer's code: 05458177

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Assistant Professor, Surgeon

Reviewer's Country/Territory: Indonesia

Author's Country/Territory: India

Manuscript submission date: 2021-10-11

Reviewer chosen by: AI Technique

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Reviewer performed review: 2021-10-25 05:56

Review time: 6 Days and 3 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
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Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



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**Peer-reviewer
statements**

Peer-Review: ☒ Anonymous ☐ Onymous

Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

Please describe more about GeneXpert in Introduction and Methods

RE-REVIEW REPORT OF REVISED MANUSCRIPT

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Professional title: Assistant Professor, Surgeon

Reviewer's Country/Territory: Indonesia

Author's Country/Territory: India

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Reviewer chosen by: Jin-Lei Wang

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Review time: 1 Hour

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Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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statements

Conflicts-of-Interest: [] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

The queries had been responded well