REVIEWER'S REPORT

Manuscript No.: IJAR-50317   Date: 19-02-2025

Title: **Development of a Predictive Composite Index for early diagnosis of psoriatic arthritis**

Recommendation:
Accept as it is……………...............
Accept after minor revision**................**
Accept after major revision ………………
Do not accept (*Reasons below*) ………

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

Reviewer's Name: Dr Aamina

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)

Detailed Reviewer's Comment / Report

Title and Abstract

- The title accurately reflects the study's objective, focusing on the development of a predictive model for early PsA diagnosis.
- The abstract provides a clear and concise summary of the study, including objectives, methodology, results, and conclusions.
- The inclusion of sensitivity and specificity values enhances the credibility of the model's effectiveness.

Introduction

- The introduction presents a strong rationale for the study, emphasizing the diagnostic challenges of PsA and the necessity of early identification.
- The clinical significance of differentiating PsA from PsO without musculoskeletal involvement is well articulated.

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- Consider adding a brief mention of existing diagnostic methods and their limitations to strengthen the justification for the predictive model.

Materials and Methods

- The retrospective case-control study design is appropriate for model development.
- The selection criteria for patients are well defined, ensuring clarity in case and control group classifications.
- The statistical methodology, particularly multiple regression analysis and ROC curve validation, is suitable for assessing diagnostic accuracy.
- The validation method through bootstrapping is commendable, but additional details on the number of iterations used would improve reproducibility.

Results

- The statistical analysis is robust, providing clear distinctions between early PsA and PsO patients.
- Key parameters such as TJC, SJC, morning stiffness, and enthesitis prevalence are effectively highlighted with statistical significance.
- The reported sensitivity (89%) and specificity (84%) indicate strong diagnostic performance.
- Consider including confidence intervals for sensitivity and specificity values to strengthen statistical reliability.

Discussion

- The discussion appropriately interprets findings, supporting the model's utility in early PsA detection.
- The need for multicenter validation is well stated, reinforcing the study's limitations.
- A brief comparison with existing predictive models, if available, would enhance the discussion by contextualizing the study's findings within current literature.

Conclusion

- The conclusion effectively summarizes the study's key findings and emphasizes the clinical relevance of the predictive model.
- A statement on potential clinical implementation strategies could add value to the conclusion.

Overall Assessment

- The study is well-structured, with a logical flow of information.
- Statistical analysis is appropriately applied, and results are clearly presented.
- Minor improvements, such as adding confidence intervals and comparing with existing models, would enhance the manuscript's depth.
- With additional validation, this predictive model has the potential to contribute significantly to early PsA diagnosis in clinical practice.

Final Recommendation:

Accept the paper as it is.