Dear editor on chief world Journal of Hepatology

Thank you so much for the valuable highly scientific comments of the reviewers. All the modifications done according to the prestigious experts' reviewers' comments, really appreciated, they made the manuscript more structured, updated, and covering all the points traced.

Hope my modification will meet their expectation.

Reviewer 1

1. They analyze laboratory data, imaging features, histological findings, or combinations thereof?

Thank you, sir, for your comments, yes, they use them in combination, and I add this under **Integration of AI with Non-Invasive Diagnostic Tools** section, table 1, and add to conclusion

2. In addition, clarification on how these algorithms are trained and integrated would add clarity.

Thank you, sir, for your comments, yes, I add this under **AI for Risk Stratification and Disease Prediction section**, added Integration with Clinical Workflows paragraph, and in limitation section

3. For instance, can they extract data directly from electronic health records or imaging archives? Or is manual input still required?

Thank you, sir, I add a paragraph of Data Acquisition Heterogeneity, under **Integration of AI with Non-Invasive Diagnostic Tools** section

4. A discussion on how feasible the implementation of these tools is within the current clinical infrastructure would greatly enhance the practical relevance of the review.

Thank you, sir, I add a new section under the title of Clinical Implementation Feasibility, to cover this important point

5. The section Challenges and Limitations is currently too brief. The authors are encouraged to expand on technical, ethical, and regulatory challenges, including data protection concerns, algorithm transparency, and potential biases.

Thank you, sir, modification of this section done

6. The section Future Directions is also underdeveloped. Beyond briefly mentioning possible applications, the authors should discuss realistic future scenarios, including clinical validation steps, regulatory approval pathways, and strategies for integration into clinical guidelines. Including a conceptual figure illustrating a roadmap for AI implementation in MASLD care would make the section more visually engaging and informative.

Thank you, sir, modification of this section done, and figure added

Reviewer 2:

1. Introduction Clarity: The introduction could be more concise and clearly state the purpose and scope of the review. Background Information: Provide a brief summary of MASLD and its importance to set the context for the reader.

Thank you, sir, modification done

2. Literature Review Recency: Ensure that the literature review includes the most recent publications (preferably within the last 5 years) to reflect the current state of the field. Structure: Organize the literature review by themes (e.g., ML applications, DL in imaging analysis) to improve readability.

Thank you, sir, Recent literature included demonstrates AI's growing role in MASLD, with ML excelling in risk prediction (e.g., Yu et al.'s RF model) and DL revolutionizing imaging analysis (e.g., Byra et al.'s CNN) were clearly listed

3. AI in MASLD Diagnosis Methodological Details: Provide more details on the ML and DL models discussed, including their architectures, input features, and training procedures. Performance Metrics: Clearly explain the performance metrics used (e.g., AUC, accuracy) and their significance.

Thank you, sir, modification done, and more detailed AUC, and accuracy added to the table

4. Integration of AI with Non-Invasive Diagnostic Tools Specific Examples: Provide specific examples of how AI is integrated with tools like ultrasound, MRI, and elastography to enhance diagnosis. Technical Details: Explain the technical aspects of these integrations, including data preprocessing and fusion techniques.

Thank you, sir, modification done

5. AI for Risk Stratification and Disease Prediction Case Studies: Include case studies or real-world examples to illustrate how AI-based models are used for risk stratification and disease prediction. Limitations: Discuss the limitations of current AI models in this context and potential areas for improvement.

Thank you, sir, modification done

6. Challenges and Limitations Detailed Discussion: Provide a more detailed discussion of the challenges and limitations faced in implementing AI in MASLD diagnosis. Future Directions: Suggest specific directions for future research to address these challenges.

Thank you, sir, modification done

7. Future Directions Concrete Suggestions: Offer concrete suggestions for future research, emphasizing areas where significant advancements can be made. Interdisciplinary Collaboration: Highlight the importance of interdisciplinary collaboration in advancing AI applications in MASLD.

Thank you, sir, modification done, and a roadmap figure added

8. Conclusion Summary: Summarize the key points discussed in the manuscript and restate the main contributions. Impact: Discuss the potential impact of AI on MASLD diagnosis and management, emphasizing its potential to improve patient outcomes.

Thank you, sir, modification done

9. Language and Formatting Consistency: Ensure consistent formatting throughout the manuscript, following the journal's guidelines. Clarity: Improve the clarity of writing by avoiding jargon and ensuring precise terminology. Grammar and Typos: Proofread the manuscript carefully to correct any grammatical errors or typos.

Thank you, sir, modification done