Artificial Intelligence and Medicine

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Exploring ChatGPT' s Potential to facilitate adaptation of Clinical Guidelines

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BACKGROUND

The rapid evolution of medical knowledge necessitates the continuous adaptation of clinical guidelines to ensure evidence-based practice. Artificial intelligence (AI) tools, such as the ChatGPT language model, can streamline guideline adaptation by efficiently synthesizing recommendations from multiple sources. Objective: This study aimed to develop a comprehensive guideline for the management of diabetic ketoacidosis (DKA) using AI-assisted approaches and assess the feasibility and effectiveness of this methodology for the adaptation of clinical guidelines.

METHODS

We employed a comprehensive comparison approach, examining three reputable guideline sources: Diabetes Canada Clinical Practice Guidelines Expert Committee, Emergency Management of Hyperglycaemia in Primary Care (RCGP Australia), and The Management of Diabetic Ketoacidosis in Adults (Diabetes British Society). Data extraction focused on diagnosis criteria, risk factors, signs and symptoms, investigations, and treatment recommendations. We compared the synthesized guidelines generated by ChatGPT and identified any misreporting or non-reporting errors.

RESULTS

ChatGPT could generate a comprehensive table comparing the guidelines. However, multiple recurrent errors, including misreporting and non-reporting, were identified, rendering the results unreliable. Additionally, inconsistencies were observed in the repeated reporting of data. The study highlights the limitations of using ChatGPT for the adaptation of clinical guidelines without expert human intervention.

CONCLUSION

This study demonstrates the potential of AI tools, such as ChatGPT, to improve the efficiency and quality of clinical guideline adaptation, which is a complex and resource-intensive process. However, human input and expertise are still essential at this stage and may continue to be in the future, as AI tools are not flawless and may require validation and refinement. Future research should focus on developing and testing more advanced AI tools for guideline adaptation and assessing their impact on patient outcomes and clinical practice.

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