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Abstract

Advancements in AI-Based Diagnostic Tools for Cancer Screening

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Abstract

Background and aim: The rapid advancement of artificial intelligence (AI) is significantly impacting the field of medical diagnosis, particularly in the domain of cancer screening. It is crucial to delve into the latest advancements made in AI-driven diagnostic tools, with a specific emphasis on their potential to expedite early disease detection and enhance the overall quality of patient care.

Methods: Extensive searches were conducted across multiple databases, encompassing studies available up to August 2023, employing keywords such as "artificial intelligence," "cancer screening," and "diagnostic tools." The thorough examination of these studies focused on understanding the utilization of AI, the accuracy of their diagnostic approaches, and their practical applicability in real-world medical settings.

Results: Advancements in AI-based cancer screening tools are vital for improving early detection and patient care. Traditional methods face challenges like human error and delays. AI, with its rapid and precise analysis of large datasets, enhances accuracy, identifies subtle patterns, and enables timely intervention. This not only improves patient outcomes but also streamlines workflows for healthcare professionals, making screenings more efficient and cost-effective. In a world with a rising cancer burden, integrating AI tools is crucial for timely, accurate, and personalized screenings, ultimately boosting survival rates and overall healthcare outcomes.

Conclusion: The incorporation of AI-based tools in disease diagnosis marks a notable advancement in cancer detection. As AI steadily improves, it is on track to become a standard component of medical care. This transformation holds the potential for earlier disease detection, enhanced patient care, and a paradigm shift in our approach to cancer screening.

Keywords: *Artificial intelligence, Cancer screening, Diagnostic tools*

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