Artificial Intelligence in Diagnosis of Childhood Diseases:
Opportunities and Challenges

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INTRODUCTION

- Artificial Intelligence (AI): simulation of human intelligence in machines, enabling them to learn and think like humans

- AI is gaining popularity across various fields and has emerged as a powerful tool to transform healthcare.

- Recent advancements in AI technology offer new opportunities to improve diagnostic accuracy, efficiency, and patient outcomes.

- Research explores the potential benefits and ethical considerations of integrating AI in paediatric diagnostics.

- Understanding the current state of AI applications in

Literature Review

AI for Fetal Growth Restriction (FGR) Detection

- Cruz-Lemini et al. (2021) utilized AI algorithms to analyze ultrasound images for detecting FGR in prenatal care.
- The AI system demonstrated high accuracy in identifying FGR cases, enabling early intervention and better outcomes for mothers and infants.

AI for Diagnosing Gastrointestinal Disorders

- Singh et al. (2022) explored AI's potential in diagnosing and managing gastrointestinal disorders in children.
- AI-driven algorithms analyze clinical symptoms, lab results, and imaging findings to provide personalized diagnosis and treatment recommendations.

Literature Review

Enhancing Paediatric Radiology with AI

- Davis et al. (2019) discussed how AI algorithms can improve the interpretation of medical images, such as X-rays, CT scans, and MRIs.
- AI aids in detecting and classifying abnormalities, prioritizing cases, reducing errors, and ultimately improving patient outcomes.

AI for Skin Cancer Diagnosis

- Esteva et al. (2018) developed a deep learning algorithm for diagnosing skin cancer.
- AI's accuracy in dermatological diagnostics can lead to early detection and improved outcomes in paediatric cases.

Literature Review

AI for Identifying Rare Conditions

- van de Velde et al. (2020) explored AI's potential in diagnosing rare paediatric conditions.
- AI analyzes electronic health records, genetic data, and clinical phenotypes, enabling early detection and personalized treatment.

AI for Early Detection of Neurological Disorders

- Anderson et al. (2022) reviewed AI's application in paediatric neurology.
- AI's integration in neuroimaging analysis improves brain abnormality detection, leading to timely interventions and better care for children.

Literature Review

Addressing Ethical Concerns in AI

- Alvarez-Melis and Jaakkola (2020) emphasize transparent and explainable AI systems in healthcare.
- Samad et al. (2020) caution against over-reliance on AI without human oversight to maintain the human element in healthcare decision-making.

Discussion - Realising the potential of AI in pediatric diagnosis

- AI offers significant benefits in paediatric diagnostics, but ethical concerns must be addressed

- Challenges in developed and resource-constrained settings require tailored solutions

- Collaboration between healthcare professionals and AI developers is essential for responsible and effective implementation

Conclusion

Revolutionize

AI has the potential to revolutionize the diagnosis of childhood diseases and improve patient outcomes

Ethical

Addressing ethical considerations and challenges will maximize the benefits of AI in paediatric healthcare

Advance

Continued research and collaborations are essential to advance AI applications in paediatric medicine

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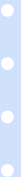
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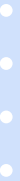
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Thank you!