عنوان مقاله:

Application of machine learning in the diagnosis of polycystic ovary syndrome : systematicreview

محل انتشار:

پنجمین کنگره پژوهشی دانشجویان دانشگاه علوم پزشکی هرمزگان (سال: 1402)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Niloofar choobin – Student Research Committee, Hormozgan University of Medical Sciences, Bandar Abbas, Iran

Masoud Kargar – Thalassemia & Hemoglobinopathy Research Center, Health Research Institute, Ahvaz Jundishapur University of MedicalSciences, Ahvaz, Iran

Susan Samimi

خلاصه مقاله:

Introduction: Polycystic ovary syndrome (PCOS) is a common endocrine disorder affecting women ofreproductive age, characterized by irregular menstrual cycles, hormonal imbalances and the formation ofovarian cysts. In recent years, machine learning algorithms have been increasingly used in medical research andclinical practice, offering a promising opportunity to improve the accuracy of diagnosing PCOS andpersonalizing treatment. Therefore, the improved version is: In view of the importance of this topic and thesignificant advances in the field of artificial intelligence, a systematic review of machine learning diagnosis ofPCOS was conducted.Method: This systematic review was conducted in ۲۰۲۳. The search for relevant studies included electronicdatabases such as Web of Science, Cochrane, Scopus and PubMed using the keywords "machine learning"[Mesh], "deep learning" [Mesh] and " Polycystic ovary syndrome " [Mesh]. The inclusion criteria were limitedto articles with full text available from ۲۰۱۵ to ۲۰۲۳ and articles not meeting the research topic were excluded.Ultimately, ۲۱ articles related to the topic were included in the study using entry and exit criteria (following thePRISMA checklist). The studies were reviewed based on the inclusion criteria (the Englishness, the availability,and the related of the studies) and those studies whose full text was not available and were not related to thetopic were excluded from the review. And finally, to avoid biasing the final studies by the tools of CASP wereevaluated.Result: The researchers undertook an extensive review of literature and selected ۲۱ applicable studies thatfulfilled the inclusion criteria. These studies employed diverse machine learning methods, including supportvector machines, artificial neural networks, and decision trees, to address varied aspects of polycystic ovarysyndrome (PCO) diagnosis and management, such as phenotype categorization, metabolic abnormalityprediction, and personalized treatment recommendations.Conclusion: The findings suggest that using machine learning techniques has shown potential in enhancing theprecision and effectiveness of PCO diagnosis and treatment. Nonetheless, additional studies are necessary toverify these results and assess the practicality of implementing machine learning algorithms in the managementof PCO.

کلمات کلیدی:

machine learning, deep learning, Polycystic ovary syndrome