Artificial Intelligence Could Improve Heart Attack Diagnosis

Researchers from the University of Edinburgh have developed an artificial intelligence (AI) algorithm that shows promise in diagnosing heart attacks more quickly and accurately than existing methods. The algorithm, funded by the British Heart Foundation and the National Institute for Health and Care Research, utilises AI technology to enhance diagnostic capabilities. The study is published in Nature Medicine.

The algorithm, called CoDE-ACS, was evaluated in 10,286 patients across six countries. CoDE-ACS demonstrated superior performance compared to existing testing methods and was able to exclude the possibility of a heart attack in more than double the number of patients. The algorithm achieved an accuracy rate of 99.6%.

The CoDE-ACS algorithm can potentially help clinicians rule out a heart attack which could lead to a decrease in hospital admissions. The algorithm also has the potential to assist doctors in identifying patients whose abnormal troponin levels are due to a heart attack. The AI tool demonstrated consistent performance regardless of age, sex, and pre-existing health conditions, indicating its potential to address misdiagnosis and promote equity in healthcare outcomes among diverse populations. The algorithm could help improve the efficiency and effectiveness of emergency care and can help identify patients who can be safely discharged and those that require hospitalisation for additional tests.

The current diagnostic approach for heart attacks relies on measuring protein troponin in the blood. However, the same threshold is used for all patients, irrespective of age, sex, and other health conditions. This can lead to disparities in diagnosis. For example, women are 50% more likely to receive an incorrect initial diagnosis than men. Furthermore, people who are initially misdiagnosed have a 70% higher mortality risk after 30 days.

CoDE-ACS addresses this problem by using AI to consider various patient factors, leading to more accurate diagnoses and personalised treatment decisions.

Source: [Nature Medicine](#)

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