Scoemtists Devlop AI Tool That Spots Early Pancreatic Cancer Signs Missed on Routien CT Scans

Overview

Artificial intelligence may help detect hidden signs of pancreatic cancer more than a year before conventional diagnosis, potentially improving opportunities for early treatment. A new study suggests that an AI-based imaging system can identify subtle changes in pancreatic tissue that are often missed during routine CT scans.

Published in the journal *Gut*, the study evaluated an artificial intelligence model called Radiomics-based Early Detection MODel (REDMOD), designed to detect early imaging patterns associated with pancreatic ductal adenocarcinoma, the most common form of pancreatic cancer.

Pancreatic cancer is particularly difficult to diagnose early because symptoms often appear only after the disease has progressed. Early changes in pancreatic tissue may also be too subtle for radiologists to identify.

Researchers analysed abdominal CT scans from 219 patients who were subsequently diagnosed with pancreatic cancer, despite their earlier scans showing no visible signs of the disease.

These scans were compared with images from 1,243 individuals who remained free of pancreatic cancer during follow-up.

The findings revealed that REDMOD identified subtle imaging abnormalities associated with cancer an average of 475 days before clinical diagnosis.

Importantly, the AI model achieved a sensitivity of 73%, compared with 39% for experienced radiologists.

When analysing scans obtained more than two years before diagnosis, REDMOD identified 68% of future cancer cases, compared with 23% detected by radiologists.

The system also demonstrated promising accuracy in identifying cancer-free individuals, correctly classifying more than 81% of scans in an independent patient group.

Researchers suggested that the technology could eventually help identify pancreatic cancer at an earlier, more treatable stage.

However, the study was retrospective, and further prospective testing is required to determine whether using REDMOD improves diagnosis, treatment outcomes or survival.

The findings highlight the potential of AI-assisted CT imaging to support earlier pancreatic cancer detection, particularly among patients at increased risk.

REFERENCE: Sovanlal Mukherjee, et al.; Next-generation AI for visually occult pancreatic cancer detection in a low-prevalence setting with longitudinal stability and multi-institutional generalisability. Gut, 2026; gutjnl-2025-337266 DOI: 10.1136/gutjnl-2025-337266

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