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AI Enhances Breast Cancer Detection

A recent study from the Karolinska Institute, published in The Lancet Digital Health, reveals that a single radiologist aided by AI detected more cases of breast cancer in screening mammography compared to the combined efforts of two radiologists. The findings were reported in the ScreenTrustCAD study conducted by the Institute. The team revealed that AI technology is now ready for integration into breast cancer screening procedures.

In the traditional approach, every examination is reviewed by two radiologists. In the present study, exams were assessed by two radiologists and AI in order to decide which women should be called back for further investigation. 58 344 women aged 40–74 years underwent regular mammography screening, of whom 55 581 were included in the study. By comparing the outcomes and identifying which women were diagnosed with breast cancer, the researchers were able to gauge the accuracy of various combinations involving AI and radiologists.

250 cases of cancer were detected in the traditional approach involving two radiologists. When AI was incorporated alongside two radiologists, the team found that the combined effort led to the detection of the highest number of cases, totaling 269. In the same cohort one radiologist and AI detected 261 cases. Whereas AI alone identified 246 cases, a result that was statistically non-inferior to two radiologists.

Furthermore, the researchers observed that in comparison to the two-radiologist approach, incorporating AI alongside one radiologist and AI working independently resulted in a 6% and 55% reduction in false positives. This means a lower recall rate for healthy women, minimising unnecessary distress and cost.

Principal investigator Fredrik Strand, radiologist and docent at the Department of Oncology-Pathology, Karolinska Institutet, summarises, “that for screening mammography, one AI-supported radiologist is a better alternative than two radiologists without AI”.

“Our study shows that AI is ready for controlled implementation in screening mammography”.

Source: Karolinska Institutet

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