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Letter to Editor

Breast Friends: How AI is Getting Smarter About Cancer Detection

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Dear editor,

Breast cancer ranks among the most frequently diagnosed cancers in females globally, with increasing prevalence over time, growing strongly in South America, Africa and Asia, accounting for one-fourth of all cancers in females. In most countries, breast cancer is among the leading causes of death in women. Around 1,671,149 new cases of breast cancer and 521,907 deaths due to breast cancer occurred globally in 2012[1], whereas 2.3 million new cases occurred in 2020 alone; survival depends on both the stage and molecular subtype of the disease. Studies show that early detection of breast cancer plays a vital role in reducing the mortality rate and significantly enhancing the prognosis of the disease[2]. Breast cancer screening programs rely on imaging techniques like mammograms and ultrasounds to identify early signs of cancer, such as tiny calcifications, abnormal tissue structures and solid lumps. While these programs have significantly improved cancer detection and prognosis, they are studded with the risk of false positive and negative results, prompting the need for additional tools to enhance diagnostic accuracy[3].

In the ongoing era, the rapid advancement of artificial intelligence (AI) has significantly impacted various aspects of healthcare, particularly the realm of medical imaging. AI algorithms, intense learning models, can analyze mammograms to identify subtle signs of early-stage cancer that doctors may overlook[3]. Research indicates that combining AI with human expertise significantly improves diagnostic accuracy, particularly in cases with dense breast tissue, a common challenge in mammograms[4]. In this role. Al serves as a" second reader," flagging suspicious areas for closer examination by radiologists. Al is also pushing the envelope in early breast cancer detection through applications like automated detection systems for mammograms and the integration of AI in MRI staging. These tools identify and track tumors and help reduce human error, enhancing the accuracy of monitoring cancer progression[5].

Furthermore, Al holds the promise of reducing unnecessary biopsies. A study demonstrated that the Al sool iBRISK (intelligent-augmented breast cancer risk calculator) could effectively assess whether abnormal tissue identified by physicians was more likely to be benign or malignant, sparing patients from invasive procedures[4]. This breakthrough not only enhances patient comfort but also streamlines the healthcare process. Moreover, Al can also enhance the ability of physicians to identify individuals at higher risk of developing breast carcinoma. A 2023 study revealed that AI outperformed traditional risk models like the Breast Cancer Surveillance Consortium (BCSC) model in predicting breast cancer risk[6]. In conclusion, incorporating artificial intelligence in diagnosing breast cancer has made notable progress in diagnostic precision, patient results and resource efficiency. However, as the study's findings demonstrate, further research and development are necessary to fully achieve the transformative potential of AI-augmented screening processes.

Future studies should concentrate on creating individualized treatment regimens with Al enhancements, examining Al-driven risk prediction models to identify high-risk populations. And evaluating Al's function in breast cancer subtyping and molecular profiling. Standardized AI training datasets for breast cancer diagnosis and large-scale, multicenter trials are required to validate AI-driven diagnostic systems.

Guidelines for AI-augmented screening procedures should be created and AI-powered decision support tools should be used in healthcare settings to enable broad adoption. Academics, physicians and politicians must work together to address clinical, technical and regulatory difficulties. We can improve patient outcomes and diagnostic accuracy, optimize resource allocation, lower healthcare costs and advance personalized medicine and treatment efficacy by advancing AI-driven breast cancer detection. Ultimately, this research highlights the need for ongoing innovation and investment in AI-augmented breast cancer diagnosis by showing the potential to revolutionize patient care and save lives.

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References

1. Ghoncheh M, Pournamdar Z, Salehiniya H. Incidence and mortality and epidemiology of breast cancer in the world. Asian Pacific journal of cancer prevention, 2016;17(3): 43-46.
2. Sung H, Ferlay J, Siegel RL, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians, 2021;71(3): 209-249.
3. Marmot MG, Altman DG, Cameron DA, et al. The benefits and harms of breast cancer screening: an independent review. British journal of cancer, 2013;108(11): 2205-2240.
4. Ezeana CF, He T, Patel TA, et al. A deep learning decision support tool to improve risk stratification and reduce unnecessary biopsies in BI-RADS 4 mammograms. Radiology: Artificial Intelligence, 2023;5(6): 220259.
5. Carriero A, Groenhoff L, Vologina E, et al. Deep Learning in Breast Cancer Imaging: State of the Art and Recent Advancements in Early 2024. Diagnostics, 2024;14(8): 848.
6. Arasu VA, Habel LA, Achacoso NS, et al. Comparison of mammography AI algorithms with a clinical risk model for 5-year breast cancer risk prediction: an observational study. Radiology, 2023;307(5): 222733.