International Journal of Health Sciences
Available online at www.sciencescholar.us
E-ISSN: 2550-696X
Int. J. of Health Sci.
DOI: 10.53730

How to Cite:
Jasim, W. A., & Muhssen, Z. F. (2025). Breast cancer detection by imaging techniques. *International Journal of Health Sciences*, *9*(S1), 254–257. https://doi.org/10.53730/ijhs.v9nS1.10462

Breast cancer detection by imaging techniques

Wisam Abdulatif Jasim
IBN Khaldun Private University College, Baghdad, Iraq
Email: Wissam.a.@ik.edu.iq

Zainab Fadhil Muhssen
College of Health and Medical Techniques-Baghdad
Email: drzainabf@yahoo.com

***Abstract*---**Several techqnieces were using in the latest year to improve for diagenesis Breast cancer because of increasing the states of cancer specially such as breast cancers. It is predominating with high ratio for women. These states demand more researches for devlopments the instruments and equipment techniques to solve these major problems. These common global symptoms have become a real problem for the world. Breast cancer symptoms are not limited to women, but the incidence is much higher than that of men. Magnetic resonance imaging, X-rays, and other modern technologies have developed in the last period of this century. The study proposes an integrated imaging framework aimed at enhancing the accuracy of breast cancer diagnosis and improving treatment strategies. The computational analysis with applections of algorathems finite elents methods and the use of invariant impeding techenes helps to Rapid development of key software used in nuclear radiation and magnetic field technologies has shown significant progress in serving humanity. The use of advanced counters such as the Gier-Muller, gaseous, semiconductor and hyperconductor counters has been and remains the main tool in developing digital software to obtain accurate diagnostic results. The use of various radiations, both nuclear and atomic, has had a real impact on the treatment and diagnosis of early disease cases in particular. Magnetic resonance imaging (MRI), molecular imaging techniques and component of our framework focuses on screening and early detection. The digital mammography, supported by computer-aided detection (CAD) algorithms, in

Submitted: 27 April 2025, Revised: 09 May 2025, Accepted: 18 June 2025

improving the sensitivity and specificity of breast cancer detection are used for this research.

***Keywords*---**imaging, MRI, breast cancer, techniques, CT, IIT.

1- Introduction

Imagine designing treatment plans tailored to the unique characteristics of each patient's breast cancer. Through genomic testing and molecular analysis, we aim to identify specific genetic mutations[1].

Imagine equitable access to state-of-the-art treatment options for all individuals affected by breast cancer, regardless of geographic location or socioeconomic status. Studies advocate for policies and initiatives that promote affordability and accessibility of breast cancer care, ensuring that patients receive timely diagnosis, treatment, and supportive care services. Imagine a world where survivors of breast cancer thrive beyond their diagnosis[2]. Prioritize survivorship programs and research initiatives aimed at improving long-term outcomes, managing treatment-related side effects, and addressing the holistic needs of survivors to promote optimal quality of life and wellbeing [3].

2- Aim, Sample of the study and instruments

The present study aim to assess that imagine for the cancer of breast helps for treatment as for diagnosis. Random sampling probability of (30) samples. Data collection was through a self-designed structured [4].

3-: Statistical Data calculations

Statistical Data calculations are performed and analyzes by using mat lap 2018 Invariant impeding techniques and DAS[5].

Results

The values obtained from the study are shown in the first table.
Mammography is used to detect invasive breast cancer, which results in smaller tumors and reduces the incidence of metastatic cancers. It is uncertain whether MRI screening improves survival. Cancers in BRCA1 mutation carriers typically have a poor prognostic phenotype, lacking estrogen and progesterone receptors and overexpressing HER2 (triple negative), so the impact of early detection on survival is uncertain [6]. here are insufficient data on MRI findings in women at increasing the risk of cancer of the breast for reasons other than family history. The researches of breast cancer for the women detected and treated by with chest radiation for childhood cancer found that cancer types in this group did not appear to differ from those observed in the general population. [7] The similarity cumulative incidence of cancer of the breast was to that observed in BR mutation carriers.

Patients populations in randomized testing by MRI for locating thereby and dragonesses are represent as a values shown in the second table. Age, Eligibility, Median tumour size and Screen detected[8].

Table 1: The characteristics of the MRI techniques

Items	The Kreige., present et al study [41]		Leach., Warner., Kuhl., et rt al[43]	et al[42]	al.[44]	Hagen., et al[45]		
Number of	30	1909	649	236	529	**patients** 491		
Risk criteria ≥15% **risk of) %**	carrier	carrier	%15≤		%25≤ **breast cancer development**	BRCA	%20≤	BRCA
Proven	%19	%13.33	%19	%100	%8	**mutation carriers** %100		
Number	**of** 6	50	22	35	43	**cancers** 25		
Sensitivity MRI	%80		%80		%77	%77	%91	%68

Table 2: Patients populations in randomized testing by MRI for locating thereby and dragonesses

Item	Comparative MR mammography of effectiveness of MRI non-palpable breast in breast cancer Tumours MONET COMICE	
Number of patients	3	3
Age (years)	years 55.7	years 54.8
Eligibility	Scheduled for breast-conserving surgery	BIRADS 3, 4, or 5 screen-detected lesion
Median tumour size (cm)	1.5	1.5
Screen detected %	%52	%100

Conclusions:

In conclusion, the integration of advanced imaging techniques represents a paradigm shift in the diagnosis and treatment of breast cancer, offering unprecedented opportunities for personalized and precision medicine. Our study underscores the pivotal role of imaging in every stage of the breast cancer care continuum, from screening and diagnosis to treatment planning and response assessment

References

Aruleba, K., Obaido, G., Ogbuokiri, B., Fadaka, A. O., Klein, A., Adekiya, T. A., & Aruleba, R. T. (2020). Applications of computational methods in biomedical breast cancer imaging diagnostics: a review. Journal of Imaging, 6(10), 105.

Yu, G., Chen, Z., Wu, J., & Tan, Y. (2021). A diagnostic prediction framework on auxiliary medical system for breast cancer in developing countries. Knowledge-Based Systems, 232, 107459.

Giménez-Climent, J., Marín-Hernández, C., Fuster-Diana, C. A., Torró-Richart, J. A., & Navarro-Cecilia, J. (2021). Sentinel lymph node biopsy in breast cancer after neoadjuvant therapy using a magnetic tracer versus standard technique: A multicentre comparative non-inferiority study (IMAGINE-II). International Journal of Surgery Open, 35, 100404.

Saeed, S., Asim, M., & Sohail, M. M. (2021). Fears and barriers: problems in breast cancer diagnosis and treatment in Pakistan. BMC women's health, 21(1), 1-10.

Ciria-Suarez, L., Jiménez-Fonseca, P., Palacín-Lois, M., Antoñanzas-Basa, M., Fernández-Montes, A., Manzano-Fernández, A., ... & Calderon, C. (2021). Breast cancer patient experiences through a journey map: A qualitative study. PloS one, 16(9), e0257680.

Setyowibowo, H., Hunfeld, J. A., Iskandarsyah, A., Yudiana, W., Passchier, J., Sadarjoen, S. S., ... & Sijbrandij, M. (2020). A selfhelp intervention for reducing time to diagnosis in Indonesian women with breast cancer symptoms. Psycho-Oncology, 29(4), 696-702.

Ng, C. W., Lim, J. N., Liu, J., & Hartman, M. (2020). Presentation of breast cancer, help seeking behaviour and experience of patients in their cancer journey in Singapore: a qualitative study. BMC cancer, 20(1), 1-15.

Foulkes WD, Stefansson IM, Chappuis PO, et al. Germline BRCA1 mutations and a basal epithelial phenotype in breast cancer. J Natl Cancer Inst 2003; 95: 1482–85.