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Breast Cancer Screening and Compliance: A Clinical Audit to Improve the Quality of Management

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Abstract

Objectives

The aim of performing this audit is to observe and analyze record keeping, documentation and follow-up of all the breast cancer patients admitted to a surgical department in terms of screening compliance with the intention of improving the quality of health management in a tertiary care hospital in Peshawar Khyber Pakhtunkhwa Pakistan.

Materials and Methods

The audit cycle was conducted in a retrospective manner and data pertaining to all the admitted patients related to breast cancer in the surgical department was collected from January 2024 to July 2024. A total of 125 patients were enrolled in this audit admitted through OPD and emergency. The variables that were included in the audit cycle are the following: Name, age, contact number, date of admission, medical record number (MR number), disease, screening compliance and treatment given. Data was collected in a

pre-designed proforma, added to Microsoft excel sheet and analyzed through SPSS software version 23.0. The data was described in the form of description, charts and tables.

Results

On the day of their scheduled appointment, 103 patients (83.1%) responded to telephone calls but only 74 (59.7%) of the candidates presented to breast opd for screening and check-up. The sonologist on duty was able to properly identify 73 (58.9%) cases of left breast cancer and 45 cases of right breast cancer (36.3%) by using the BIRAD score (Breast Imaging Reporting and Data System).

Conclusion

The results of this audit revealed that the patient's response towards breast cancer screening was positive, the data collection and documentation performance was quite satisfactory, and ultrasound is a very effective tool in screening for breast cancer.

Keywords: Breast Cancer, Screening, Quality of Health Care, Audit

Introduction

Statistics and data collected from all over the world have proven on multiple occasions that breast cancer is the most common cancer among women, and it is also the leading cause of death globally. The World Health Organization reports that the number of deaths due to cancer is projected to increase by 45% from 2007 to 2030 (from 7.9 million to 11.5 million deaths) ^[1]. About 1/3 of the global burden is shared by India, the United States, and China ^[2]. In Asia, the highest number of cases have been reported in Philippines, where it is the leading cause of death in the country ^[3]. Pakistan also has one of the highest incidences among Asian countries. Between 1990 and 2019, Pakistan has seen a >300% increase in breast cancer incidence and a 200–300% increase in breast cancer-associated mortality ^[4].

This distressing increase in the incidence and prevalence of breast cancer has given it great attention worldwide, forcing experts to further augment their research in identifying the risk factors of this disease and help improve prevention and management. Even if the disease is diagnosed early, metastasis to key areas such as the bone, lung, and central level system in most cases is missed by the clinician, hence, increasing patient morbidity and mortality. Once the disease is advanced, patients need to be enrolled in specialized healthcare facilities for systematic and timely treatment. It is possible to provide a good quality of life to patients with advanced stages of breast carcinoma with well-planned individualized treatment plans ^[5].

A breast cancer screening program aims to enhance the ability to detect early breast cancer with a focus on limiting the growth of the tumor, delaying the progress of the disease, and relieving the symptoms. According to the World Health Organization

statistics, 1/3 of this disease can be prevented, 1/3 can be easily detected early and 1/3 can be treated [6]. However, screening programs are heavily dependent on the capability of the operator and the compliance of the patients, especially in low-income and illiterate societies where social awareness is not up to the mark. According to a recent review, Pakistan has only witnessed one national policy, in its history, to raise awareness regarding cancer's early warning signs [7].

Clinical audit is a key quality assurance measure that aims to keep the screen reading performance within acceptable standards. A key factor reflecting the quality of care in the management of patients with breast cancer is the timeliness of patient reporting to the hospital and the effectiveness of the operator and the investigation Modality [8]. In-hospital delays can occur at several points in the clinical care pathway from patient to clinician. Mammography is the only screening modality proven to reduce breast cancer deaths among women aged 40 years and older [9]. However, due to A false negative detection rate due to dense breasts and in younger females, the findings of mammography are usually confirmed with the help of an ultrasound [10]. Therefore, this audit aims to analyze the documentation of breast cancer patients in terms of their biodata and assess their compliance with the screening program as well as detect the effectiveness of the program in the early diagnosing of this disease.

Materials and Methods

After taking the hospital ethical and audit committee into confidence and maintaining all the rules and regulations related to conducting a clinical trial, this cross-sectional study was begun in the surgical department of a tertiary care hospital in Peshawar Khyber Pakhtunkhwa. The audit comprised of 125 patients, all females, and belonging to all ages which were added to the study through consecutive non-probability sampling. The study duration was 6 months and data from January 2024 to July 2024 was kept in perspective. Data was collected on a pre-designed Performa from the emergency, elective opd and the wards. The variables that were included in the audit cycle are the following: Name, age, contact number, date of admission, medical record number (MR number), disease, the treatment given, proper clinical examination, screening method, and compliance with screening. The number of patients responding to telephone calls, those who presented to OPD on the allotted schedule, proper clinical examination by the residents, and the effectiveness of ultrasound in diagnosing the disease were assessed. Inclusion criteria had patients related to breast cancer and all other pathologies were excluded, only ultrasound was used as a screening tool. The data was entered from proformas into a Microsoft Excel sheet and then transferred to SPSS version 23.0 for analysis. The results were depicted in the form of descriptions, tables and charts.

Results

The following demographic statistics were obtained following data analysis from parameters recorded in the general surgical OPD registry. The mean age of the patients was 47.8 ± 11.6 , mean weight 144.4 ± 12.1 pounds, mean height 1.6 ± 0.1 meters, and mean BMI 27.8 ± 3.3 . A total of 124 female patients presented to the general surgical OPD out of which 115 (92.7%) were properly assessed through

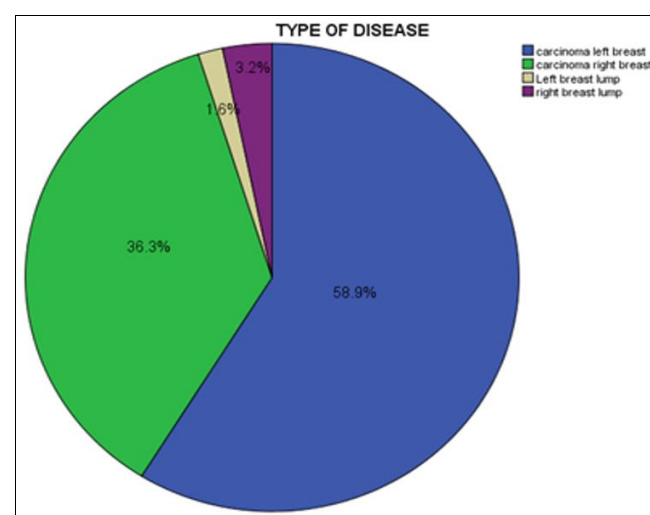
history and clinical examination by the residents and on-call and proper documentation was done. Their contact numbers were recorded, and only those patients who had a suspicion of breast malignancy were scheduled for visits to the breast OPD for further management. On the day of their scheduled appointment, 103 patients (83.1%) responded to telephone calls but only 74 (59.7%) of the candidates presented to breast opd for screening and check-up. The sonologist on duty in the general OPD was able to properly identify 73 (58.9%) cases of left breast cancer and 45 cases of right breast cancer (36.3%) by using the BIRAD score (Breast Imaging Reporting and Data System) with details given in the table. Four cases (3.2%) on the right and two (1.6%) on the left could not be properly classified and they were labeled as lumps. All cases were referred to minor OT for trucut biopsy to obtain a histopathological diagnosis. The statistics are shown in tables and charts below.

Table 1: Patient related demographic variables

Variable	Mean	Minimum	Maximum	Standard deviation
Age	47.8	14	73	11.6
Weight	144	111	170	12.1
BMI	27.8	19.6	37.2	3.3
Height	1.6	1.37	1.54	0.1

Table 2: Data obtained through screening

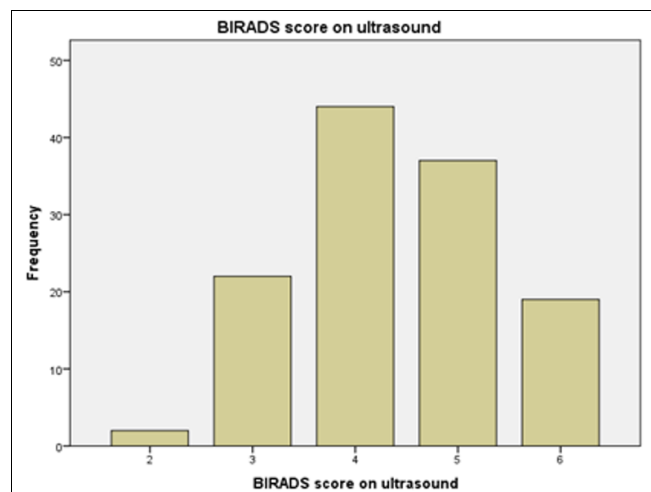
Variable	Frequency	Percentage
Carcinoma left breast	73	58.9
Carcinoma right breast	45	36.3
Right breast lump	2	1.6
Left breast lump	4	3.2
Response to telephone	103	83.1
Presentation to OPD	75	60
Clinical examination by residents	115	92.7



Pie chart 1: Disease distribution

Table 3: BIRADS score distribution

BIRADS score	Frequency	Percentage
1	0	0
2	2	1.6
3	22	17.7
4	44	35.5
5	37	29.8
6	19	15.3



Bar chart 1: BIRADS score distribution

Discussion

A clinical audit on breast cancer screening involves a systematic review of a healthcare practice's breast cancer screening procedures to evaluate their effectiveness in detecting early-stage cancers. In addition, this also identifies areas for improvement, and ensures compliance with established guidelines, primarily by analyzing data on cancer detection rates, false positive rates, recall rates, and patient satisfaction, while considering factors like radiologist interpretation, patient demographics, and adherence to screening schedules.

The following study describes the demeanor of our general population towards breast cancer and their compliance with the guidelines and instructions they receive from the hospital. The mean age of presentation was 47.8 which is similar to a study done in Karachi where the mean age was 48 [11]. However, this contrasts with that of patients in the United States where the mean age at diagnosis has increased to 61 years [12] and another study has depicted 56 years as the mean age for diagnosis in Asian patients [13]. This relatively lower mean age at diagnosis is alarming and highlights the importance of a well-organized screening initiative to quickly identify as many patients as possible as well as educate them on the risk factors that might further aggravate this disease.

The patient's perspective and beliefs are a very important factor in controlling the rate of breast cancer. A delay in the detection of breast cancer is associated with larger tumor size, increased risk of involvement of lymph nodes and distant metastasis, and subsequent poor survival after surgery. Although the contact numbers of all the patients were available and our residents made sure that not a single patient was missed in the general OPD, 83.1% responded to the call, and only 60% presented to the breast OPD on their scheduled appointments. Studies from developing countries have shown a lack of awareness and knowledge [14-15] as well as misconceptions [16] about the disease for this behavior. One study in Malaysia illustrated fear of divorce [16] and another study showed a low socioeconomic status in Africa [17] as the core reasons for delay in early diagnosis and treatment of breast cancer.

A physical examination is a cheap, reasonable and easy way to detect this pathology. It can be performed by both the patient and the clinician. Although this mode of screening has been discouraged due to low sensitivity [18] and a false

positive detection rate [19], more from the patient rather than the clinician, in a low-income country like Pakistan where mammography services are not widely available it can prove as an effective option for many women [20]. Therefore, medical professionals need to be trained enough to properly identify such patients and refer them to the specialist OPD for further management. The results of this audit have been encouraging as 92.7% of patients were properly examined in the general OPD and referred to breast OPD for their respective management.

It has been regularly reported in some international centers that mammography is the most effective method for detecting early-stage disease and decreasing mortality [21]. However, in those areas and communities with limited access to this technology, a well-trained sonologist can also determine malignant findings through a breast ultrasound. In our study, the sonologist on duty in the general OPD was able to properly identify 73 (58.9%) cases of left breast cancer and 45 cases of right breast cancer (36.3%) by using the BIRAD score (Breast Imaging Reporting and Data System) with details given in the table. Four cases (3.2%) on the right and two (1.6%) on the left could not be properly classified and they were labeled as lumps. A comprehensive literature review and meta-analysis revealed portable ultrasound to have an overall high sensitivity of 80.1% and specificity of 88.4% for the detection of breast cancer in a variety of patient populations. When the available data from low-resource countries were considered, ultrasound maintained a diagnostic sensitivity of 89.25% and specificity of 99.1% [22]. These statistics Favour ultrasound as a reliable diagnostic modality in the screening armamentarium of breast cancer.

Conclusion

Although the patient's attitude and response towards the screening for breast cancer was positive still, there is an urgent need for intensive and comprehensive breast cancer education that addresses the myths and misconceptions related to breast cancer. This can be the reason why some patients didn't show up at all for the screening program. However, documentation and clinical examinations done by the surgical residents were quite up to the mark. Clinical audits are basically conducted to further improve the quality of health care and further multicentric audits help screening breast ultrasound to become widely and effectively used as the primary screening test with the goal of improving the survival of breast cancer patients. Further multicentric audits involving a greater sample size need to be considered to further augment these findings.

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None.

Declaration of Patient's Interest

Patient's consent was not required as patients were not physically enrolled in this study.

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Conflicts of Interest

There are no conflicts of interest.

Use of Artificial Intelligence (AI)-Assisted Technology for Manuscript Preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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