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Recall Time to a Symptomatic Breast Unit Following Abnormal Mammography

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Abstract

Aims

The primary aim was to identify the time taken to recall patients to a Symptomatic Breast Unit after filming of an abnormal mammogram and compare to BreastCheck standards. Secondary factors such as time taken for mammography and pathology reporting were also analysed.

Methods

A retrospective study analysed all patients who underwent mammography in the Symptomatic Breast Unit in University Hospital Limerick in 2017. Abnormal mammogram in this study is defined as those rated radiologically as R3 (with a confirmed malignancy on biopsy), R4 and R5.

Results

198 patients had abnormal mammograms results. The average length of time taken from detection of abnormal mammogram to recall to clinic was 17.61 days. Median time for mammography reporting was 22 hours and for pathology reporting was 9 days.

Conclusion

Recall to clinic in the Symptomatic Breast Unit does not meet the recommended standard of two weeks. However, mammogram reporting is very efficient. The time spent awaiting pathology reports may impact the time taken to return the clinic.

Keywords: symptomatic breast unit, breastcheck, recall time, pathology, mammography.

Introduction

In Ireland approximately 3,500 people are diagnosed with breast cancer each year[1]. One in nine women will develop breast cancer in the course of their lifetime[2]. Breast Check, the national breast cancer screening program in Ireland, provides a free mammogram to all women age 55-69 every two years. Women with breast symptoms can attend Triple Assessment Clinics offered at various centres nationwide for rapid access to comprehensive assessment, with clinical examination, imaging and biopsy, if required, in a single visit. If additional imaging is required in order to identify cancer, and subsequent biopsies performed women are then recalled for diagnosis.

Breast check provides national data for practice benchmarks for the appropriate timing for recall and recall evaluation after an abnormal mammogram. Breast Check aim to offer a recall appointment to women who have an abnormal mammogram result within two weeks of being notified[3]. The National Quality Assurance Standards for Breast Cancer identifies this obligation and states that women with signs of breast cancer should be offered an appointment in clinic within two weeks[3]. Delays in recall time following abnormal mammography can lead to patient distress and poorer outcomes[4]. Screening for breast cancer leads to reduced morbidity and mortality when patients receive timely follow up and appropriate treatment[5] . Delay in subsequent evaluation, diagnosis and treatment following mammography revealing breast cancer can be associated with larger tumours, advanced disease and reduced survival[6,7].

The primary aim was to identify the length of time taken to identify the length of time taken to recall patients to a surgical review clinic in the symptomatic breast unit, after filming of an abnormal mammogram. Subsequent results were then analysed to determine if they met BreastCheck standards. Secondary outcomes included identifying the length of time taken from filming the abnormal mammogram to generating the report and to receive the offical pathology report after biopsy and any potential delaying factors.

Methods

A retrospective study was conducted over a one-year period, which analysed all patients who underwent mammograms in the Symptomatic Breast Unit (SBU) in University Hospital Limerick in 2017. Ethical approval was provided by the University Hospital Limerick Ethics Committee. 6307 mammograms were performed during this time period. Results of these were systematically analysed and any that yielded an abnormal result was included in the study. All abnormal mammograms carried out in 2017 were included. Abnormal mammogram in this study is defined as those rated radiologically as R3 (with a confirmed malignancy on biopsy), R4 and R5. Normal mammograms or those reported as R3 with benign or normal histopathology were excluded. This generated a result of 198 patients. All statistical analysis was performed using Microsoft Excel 2010 and STATA version 13.

Results

In 2017, 198 patients had abnormal mammography and required recall to a surgical review clinic in the Symptomatic Breast Unit for further investigation. All patients were female. The average age was 60 years.

Recall to SBU clinic

The average length of time taken from detection of abnormal mammogram to recall to clinic was 17.61 days (SD 6.16). The majority of patients were recalled to clinic within 30 days. 33% of patients (n=65) within 14 days or less, 60% of patients (n=119) were brought back to clinic within 15-30 days. The remaining 7% (n=19) were recalled after thirty days (Figure 1).

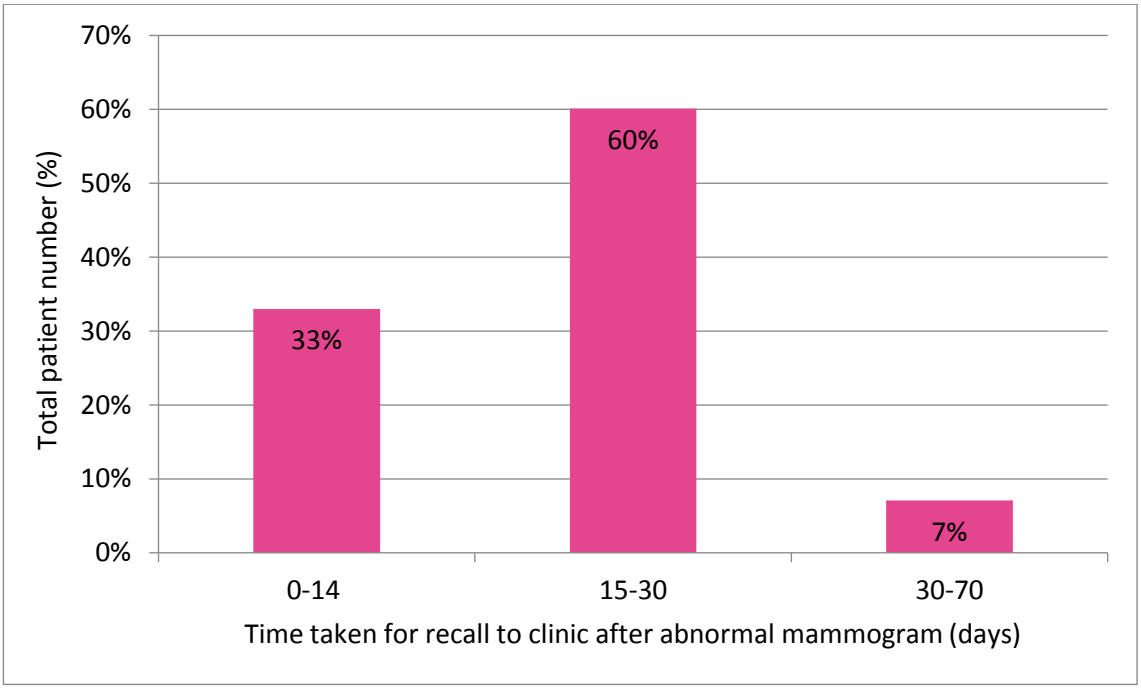

Figure 1: Distribution of time taken for patients to be recalled to Symptomatic Breast Unit clinic following filming of abnormal mammogram and biopsy (days).

Mammography

Once mammograms were filmed the median time for a radiological report to be released was 22 hours with an interquartile range of 21.36 hours. 68% (n=135) of mammograms were reported within twenty-four hours after filming, 26% (n=51) between 25-48 hours and 6% (n=12) in 49-120 hours (Figure 2). 61% (n=121) of reports classified as R5, indicative as highly suspicious of cancer. 37% (n=74) were classified as R4, suspicious for cancer and 2% (n=3) as R3 with equivocal findings.

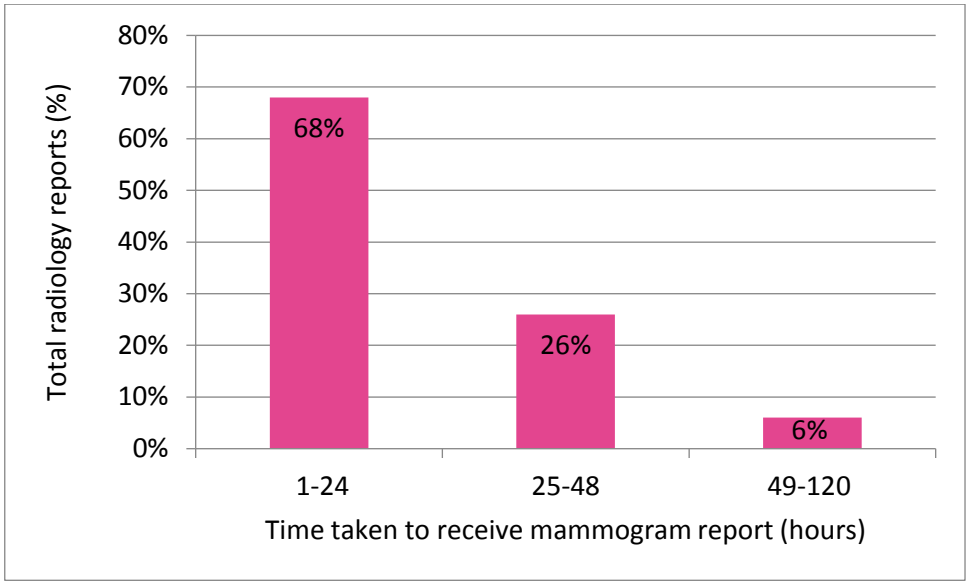

Figure 2: Distribution of time taken for generation of mammogram reports (hours).

Histopathology

Median time for official pathology report to be received after biopsy had been taken was nine days with an interquartile range of 5.75 days. 86% (n=170) of pathology reports were received within fourteen days, 22% within seven days and 64% between eight to fourteen days (Figure 3). 14% (n=28) of pathology reports took between fifteen to forty-one days to be received and 2% (n=5) reports only being obtained between twenty-three to forty-three days post-biopsy.

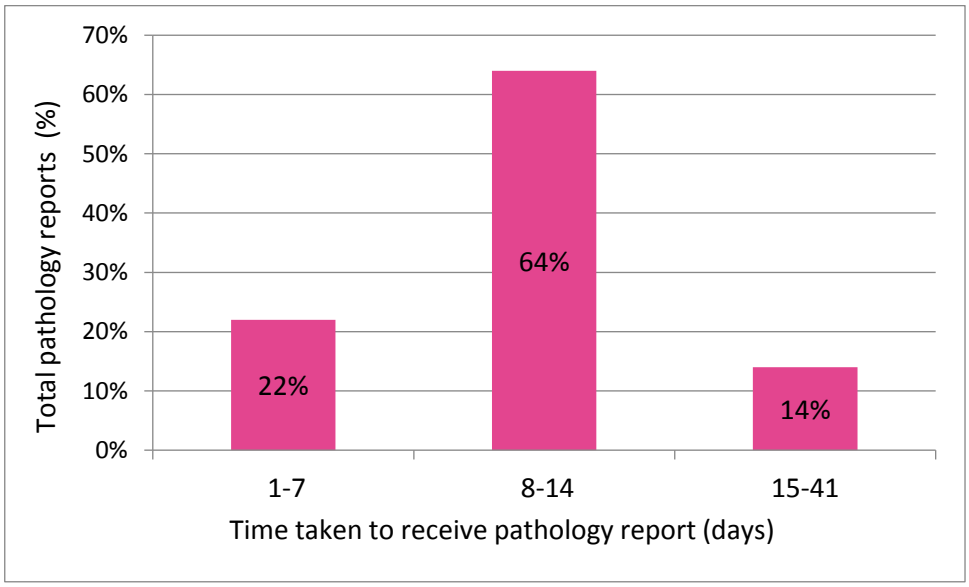

Figure 3: Distribution of time taken to receive official pathology report after biopsy.

Discussion

Mammography remains the cornerstone investigation for diagnosis of breast cancer, demonstrating a sensitivity of 77.6%, specificity of 98.8%, negative predictive value of 99.8% and positive predictive value 35.8% for detection of breast cancer[8]. Breast Check sets the standard for symptomatic breast care centres in Ireland specifically for recall times. It is paramount that patients are recalled quickly, and all centres should aim to meet the Breast Check standard of within two weeks. The importance of prompt recall and subsequent initiation of therapy was highlighted by Richards et al. This systematic review found that delay from detection to the start of treatment could decrease survival rates; most notably a delay of three months or more, which could have a 12%, lower five-year survival than those with shorter delays[7]. Quicker recall times also allows better psychological adjustment for patients[4].

The pathway to cancer diagnosis in the symptomatic breast unit includes numerous disciplines-clinical, radiology and pathology rather than just mammography as is the case in BreastCheck. Delays in recall time may result from any of the steps involved. The importance of identifying the potential delaying factors in the pathway is paramount to enable quality improvement within departments.

The most recent annual report issued by BreastCheck revealed that in 2017 91.8% of women were offered an appointment at an assessment clinic within two weeks of receiving an abnormal mammogram result[3]. This data indicates that this institution does not currently meet these standards. Timing of abnormal mammogram detection to recall to clinic in this study is 17.6 days, just above that of the standard. Overall, only 33% of patients (n=65) seen within fourteen days vs. 91.8% of BreastCheck patients. This again is not in keeping with 91.8% of Breast Check figures. This study demonstrated that number of factors may contribute to the observed discrepancy.

Mammography remains the cornerstone investigation for breast cancer. Thus, it is not surprising that radiological reporting is prompt with a median time of twenty-two hours for radiological report generation. It is probable that the ten outliers reflect scans that may have been verbally reported consultant to consultant to expedite recall, with the official report generated later. This conclusion is drawn, as the time to report was longer than time to recall for each of the patients involved.

Another factor in the pathway impacting time to recall is the time taken to issue pathology reports from biopsies. The Women's Charter Standard indicated that 94.7% of women were given a biopsy result within one week of attending an assessment clinic (standard: >90%). The National Quality Assurance Standards for Symptomatic Breast Disease Services states that 90% of patients should receive prompt and accurate diagnosis of cancer or benign diagnosis[9]. In this study it took a median of 9 days to receive a pathology report. The eight outliers again, as with the radiology outliers reflect those patients in which official reports were received after the recall appointment. Pathological reports are of the upmost importance for patients as they allow for targeted treatment strategies. The major discriminatory factor between the BreastCheck pathway and that of the SBU is BreastCheck involves radiology but not pathology. BreastCheck pathway back to assessment clinic timeframes are impacted only by time taken to receive radiology reports whilst Symptomatic Breast Units must await biopsy pathology reports as well.

The evolution of Fluorescent Immunohistochemistry in situ Hybridisation (FISH) has recently transformed breast surgery, often defining the type and urgency of surgery needed. Subsequently allowing a thorough overall clinical assessment of individual patients' disease and the formation of future treatment plans. Most importantly these treatment plans can be then explained to the patient at the recall clinic appointment which allows the aptient the benefit of what to expect going forward.

However, this symbiosis between surgical planning and new histopathology techniques may account for the delay in recall times. New techniques are often difficult to adopt in every labarotory and it raises the question of whether sufficent resources are available to adopt these methods and provide results within a prompt timeframe. Indeed, this is the case in UHL as all specimens requiring FISH investigations are outsourced. However, this also highlights the need to instigate processing onsite at the largest tertiary referral centre of the Mid-Western area and to provide its catchment area of 400,000 people a recall pathway within a Gold standard timeframe.

The lack of resources to initiate new investigatory models is an ongoing issue. To combat this, research is ongoing to identify more efficient and applicable techniques with similar efficacy rates as the more expensive models. A recent study by Halilovic et Bulte revealed that a new brief fixation method of ER, PR and E-Cadherin IHC and HER2 FISH allows for same day results with equivalent sensitivity and sensitivity of the more time consuming traditional fixed resection specimens[10]. Furthermore, newer techniques of chromogenic in situ hybridisation (CISH) and microfluidic-assisted chromogenic in situ hybridisation (MA-CISH) exist which offer faster and more accurate diagnosis of breast cancer and receptor status but are currently in their developmental stages. Revolutionary, new techniques like these, that require less manpower and offer overnight results may potentially be the answer to rapid recall times.

Overall, the only existing guideline which recommends a standard timeframe for recall to clinic after abnormal mammography pertains only to BreastCheck patients. The BreastCheck recall pathway includes clinic review and further imaging, whilst SBU cases incorporate further definitive diagnosis and management plans. Hence, the BreastCheck pathway may not be directly comparable to a SBU pathway, but it is the best available guideline in a reasonable time frame on recall to the clinic. Furthermore, it is also a standard that the symptomatic unit realistically could strive to achieve and therefore it was chosen as the comparable standard for this audit.

In 2017, time from abnormal mammogram to recall to a surgical review clinic in the SBU, University Hospital Limerick was 17.6 days. Thus, this does not meet the Breast Check standard of two weeks. However, mammogram reporting is very efficient. The time spent awaiting pathology reports may impact the time taken to return the clinic. Outsourcing of pathological specimens for processing may represent the delay. However, with newer histological processing methods this may change.

Declaration Conflict of Interests:
There are no conflicts of interest to declare.

Declaration of Conflicts of Interest:
There are no conflicts of interest to disclose.

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