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BREAST CANCER SCREENING IN THE AGE OF CUSTOMIZED REGIMES

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ABSTRACT

In terms of public health, the provision of healthcare, policy, and the selection of a doctor for women, breast cancer screening occupies a major position. Changes in population-based breast cancer screening practises are being driven by a number of variables, such as more sophisticated imaging technology, performance metrics for healthcare systems, health care reform, anxiety over "overdiagnosis," and a better knowledge of risk. Moving away from a "one-size-fits-all" guideline paradigm and towards more individualised approaches is necessary to maximise screening's advantages while reducing its drawbacks. To match women's risks and preferences with screening schedules, a more sophisticated conceptual model for breast cancer screening is required. This article presents a conceptual model of customised breast cancer screening that places an emphasis on crucial domains, critical transitions, and multilayer views. The four primary screening domains are awareness, detection, diagnosis, and therapy.

INTRODUCTION

Population-based screening programmes for breast cancer have a long history, and decades' worth of experimental and observational data support the efficacy of this approach. According to what, to our knowledge, are the seven largest randomised controlled studies that have been published to far, screening mammography done twice a year on women between the ages of 50 and 70 is thought to cut the death rate from breast cancer by 20% to 30%. Substantial observational studies that have shown comparable advantages have been added to the body of evidence 11, 12 despite the fact that the age range and screening frequency varied between studies. Broad-scale mammography screening trends and population changes in breast cancer mortality are strongly correlated, supporting the efficacy of the screening

programme. Breast cancer rates have fallen by 20% to 30% in the US, Canada, Sweden, England, Australia, and the Netherlands.r mortality from 1990, the start of the majority of population-based screening, despite death rates having been essentially steady over the preceding decades. Screening mammography is credited with a 50% mortality decrease, according to estimates. 13 Public health initiatives for early cancer diagnosis have seen an unparalleled effect as a result of the widespread distribution of screening mammography. The American Cancer Society published some of the first national recommendations for breast cancer screening in 197614, and other national organisations soon followed. These recommendations create the foundation for quality metrics, pay-for-performance, and other health care delivery regulations, in addition to altering practise for women and providers. Although the way that clinical practise, public health, and care seem to be so closely entwined with breast screening Regarding the real advantages and drawbacks that need to be traded off during delivery, disagreement persists.

The screening techniques include:

1. Clinical breast examinations and self-examinations of the breasts can both be used for breast palpation.
2. Mammography, ultrasonography, magnetic resonance imaging (MRI), and digital breast tomosynthesis are all forms of breast imaging (DBT)

According to the results of several randomised controlled studies, women aged 50 to 69 should be provided regular screening mammography rather than those aged 40 to 49 or older. Intense efforts have been made to create screening techniques for risk stratification in response to the discovery of genetic alterations, an increase in the risk of breast cancer, and the creation of breast cancer risk prediction models. Ultrasonography & breast magnetic resonance imaging (MRI), in addition to mammography, have been examined as potential alternatives for high-risk women. screening procedures. The topic of patient risk classification and treatment options for women with a hereditary propensity for breast cancer will be discussed. In a separate section, surveillance in women with a personal history of breast cancer is covered in great depth.

Contradindications

Given a woman's age, certain measures should be used when doing a breast examination. According to new recommendations from the American College of Physicians, average-risk women without symptoms should start talking to their doctor about the advantages, personal

preferences, and potential risks of getting a mammogram before the age of 50 starting at the age of 40.

No matter the age, clinical breast examination screening is not advised for women with average risk. It is time to discontinue screening those who are 75 years or older or have a life expectancy of 10 years or fewer.

Equipment

From a sensitivity and specificity standpoint, imaging modalities for breast cancer screening are the best and most widely acknowledged, taking into account the problems and risks to the population undergoing screening. Breast self-examination and professional breast exams are two more. Mammography is the most widely used imaging method. Ultrasonography and MRI are two other regularly utilised ones.

Mammography screening techniques are most successful when they employ tailored screening approaches that take into account characteristics like age, hormone exposure, family history, and risk factors including radiation, obesity, and genetics.

By injecting intravenous contrast material, magnetic resonance imaging (MRI) can better distinguish between normal breast tissue and abnormal lesions.

Complications

The mammography screening procedure is ineffective. According to data, breast tissue that is thick enough for mammography may make it less sensitive to detect cancer. When cancer is present, mammography may provide false-negative findings that cause it to go undetected.

Screening is connected to additional therapy, which may not be necessary or successful. Surgery and radiation therapy are more likely to be used on those who have been screened.

Also, the therapy may be detrimental to one's productivity, economy, or mental health. Because of overdiagnosis, there has been ambiguity in predicting life expectancy and a decline in quality-adjusted life expectancy.

Women are exposed to roughly 3.7 mGy of radiation every digital mammogram, with the total lifetime radiation exposure increasing with screening age, frequency, and duration. Hence, they are promoting breast cancer caused by radiation. Women aged 40 to 74 had a

125 cases per 100,000 chance of cancer. resulting in an increase in breast cancer screening-related mortality.

The common consensus is that ultrasonography is a highly operator-dependent modality and additional screening test that necessitates a qualified professional, a thorough examination, and cutting-edge technology. A prospective, multicenter investigation is necessary to investigate the function of this imaging modality in breast cancer screening in light of the findings of these studies.

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