

TREATMENT OF BREAST CANCER AN UP DATE

ESSAY

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

أَقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ ﴿١﴾ خَلَقَ الْإِنْسَانَ مِنْ
عَلَقٍ ﴿٢﴾ أَقْرَأْ وَرَبُّكَ الْأَكْرَمُ ﴿٣﴾ الَّذِي عَلَّمَ بِالْقَلَمِ
﴿٤﴾ عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ ﴿٥﴾

﴿صدق الله العظيم﴾

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INTRODUCTION

INTRODUCTION

Breast cancer in the United States is currently the second leading cause of cancer death in women behind lung cancer. The incidence of breast cancer has been increasing steadily, and current estimates suggest that a breast cancer will develop in one of every nine women at some point in their life time. (*William et al., 1994*)

The reason for this rise in incidence is not completely understood. Breast cancer is thought to be promoted by prolonged Oestrogen stimulation in a women with the requistic genetic makeup. Several studies have demonstrated a statistically significant increase in breast cancer risk with age at first pregnancy over 35 year (*Gregroy et al., 1994*).

Conversely, first pregnancy before age of 18 years appears to lower the risk of subsequent breast cancer, presumably because the cyclic Oestrogen effect on the breast is temporarily interrupted at a more influential period in breast cancer developmeent (*Julian et al., 1994*)

The exact cause of breast cancer remains a mystery. The fact that it devlops in an organ that is sensitive to Oestrogen stimulation and occurs only after puberty suggest that a hormonal influence is crucial. As mentioned before the longer the period of Oestrogen the higher the risk for breast cancer deveolpment (*William et al., 1994*).

Research efforts are being directed to determining who is at risk for development of breast cancer. One of the greatest risk factors for development of a primary breast cancer is a prior breast cancer in the same patient (*Robert et al., 1994*)

A strong family history of breast cancer also is an important risk factor. Breast cancer in a first degree relatives, imparts a relative risk of up to 2.5 times that in the general female population (*Julian et al., 1994*). Many studies have been performed looking at the possible risks of breast cancer with the use of oral contraceptives; results have been mixed.

Most recent studies have suggested no statistically significant correlation between the use of oral contraceptives and breast cancer (*Gerald p. et al., 1994*)

AIM OF THE WORK

The aim of this essay is to provide a meaningful insight to the newly initiated approach to management of breast cancer.

SCREENING

BREAST CANCER SCREENING

The goal of any screening program is to reduce mortality or morbidity of a particular disease by surveying all asymptomatic patients in a population at risk and implementing treatment at an earlier stage of the disease. A screening program will be effective if the following conditions exist.

- The disease in question has a high morbidity / Mortality rate
- The disease in question is prevalent in the population at risk.
- A reliable method to detect earlier stage disease is available (*Robert J. et al., 1994*).

Screening for breast cancer is a worthwhile goal, given its already high prevalence in the United States and other Western Countries, its rising incidence, and its high morbidity and mortality rate. Several screening methods for breast cancer have been proposed, but none except for mammography has proved effective in reducing the disease's mortality (*Gerald P. et al., 1994*).

Conclusions drawn from most large screening studies using mammography only have shown that the incidence of early cancer, (invasive cancers less than 1cm in diameter and in situ carcinoma) is two to three times higher in the screened population than in the control population (*William B. et al., 1994*). Also, in some studies, the incidence of lymph node positivity in the unscreened population are higher than those in screened patients (*Tabar L. et al. 1995*).

The notion that breast cancer found early in its genesis is a more curable disease than that found later led to the concept of breast cancer screening. This concept was first investigated in the New York Health Insurance Program (H.I.P) study more than 20 years ago. Results from this trials suggest that the mortality rate of breast cancer may be reduced by at least 25% by early detection (*Bruce. 1994*).

The UK has the largest and most ambitious breast screening project in the world. All women aged between 50 and 64 year are invited to attend for single oblique view mammography every 3 years. When abnormalities are noted, the women are recalled to regional assessment centers where further investigation are carried out, including 2-view/compression/magnification mammography, ultrasound and needle aspiration cytology (*Bruce L. et al., 1994*)

Those found to have worrying palpable lumps referred for conventional surgery. Those with impalpable lesions have stereotactic aspiration and go forward to needle localization biopsy (*R.C.N.Williamson et al., 1994*).

Breast cancer screening includes

- Breast self examination (BSE)
- Physical examination
- Mammography.

Breast self examination (B.S.E).

The use of monthly patient B.S.E. as a screening tool has been proposed and has several **advantages** compared with mammography:

- It is much cheaper, requiring no specialized equipment or technical support.
- It encourages the patient to take responsibility for her care.

Disadvantages to the use of BSE are:

- The technique detects palpable masses, in theory, this will result in larger tumours being discovered than can be found with mammography.
- It involves patient acceptance and proficiency, which are subject to much more variation than technical aspects of mammography (*William et al ., 1994*). Despite these disadvantages, monthly B.S.E, when done by a patient comfortable in its use, may complement the use of mammography as a screening tool, Although no data are available to suggest that BSE alone causes a reduction in mortality from breast cancer, it is known that mammography may be much more inaccurate in younger patients (*Gregory J. et al., 1994*).

Edeiken and colleagues have shown that in patients who present with palpable breast cancers, mammography in those younger than 50 years of age will miss the cancer in 44% whereas its false negative rate is only 15% in patients older than 50 years. This suggests a potential role for BSE as a screening tool in younger patients particularly (*Edeiken et al 1989*)

Physical examination:

Physical examination of the breast by a physician remains an important method for breast cancer detection . Physical examination was the only method that detecte some breast cancers in the Heath Insurance Project (HIP) and Breast Cancer Detection Demonstration Project (BCDPP) (*Hutchins et al., 1990*).

Physical examination is the first step and the most widely used diagnostic method . Mammography is an important Adjuvant for proving the diagnosis of breast cancer as it has a low accuracy rate in detecting small masses.

Recently fine-needle aspiration biospy (FNAB) has gained acceptance as an adjuvant diagnostic procedure to physical examination and mammography for the evaluation of breast masses. Various accuracy rates have been reported for these three methods. The accuracy rate of the combination of three diagnostic methods was 100 percent. As a result when these three methods were used in combination, diagnosis of the breast cancer was made accurately (*Eldem et al., 1993*).

Mammography :

For many years it has been known that the breast may harbor an occult cancer, completely asymptomatic and non palpable, detectable only on mammography. The improved mammography techniques have resulted in a substantial increase in cancers found on mammography (*Strax 1989*).

To date, screening studies using mammography have shown a reduction in mortality from breast cancer only in women over the age of 50 years. The absence of a reduction in mortality from breast cancer in a younger population subjected to screening mammography compared with unscreened age related controls may be related to several factors:

- A smaller number of women in the younger age group with the disease, making statistical comparisons more difficult.
- Decreased sensitivity of mammography in younger women because of denser-appearing breasts, this increased density in the normal breast tissue may obscure a malignancy (*Robert, J. et al., 1994*).

The optimum parameters for screening using mammography have not yet been defined. In the earlier HIP and BCDDP studies, mammography was performed yearly and two views of the breast were taken, craniocaudal and lateral; yearly follow-up visits to a physician also were required. In the more recent European trials from Sweden, the United Kingdom, and the Netherlands, screening mammography was performed 2 or 3 years and only one view was taken. Subsequent views were taken if an abnormality was demonstrated on the screening film (*Gregory J. et al. 1994*).

Despite the increasing incidence of breast cancer in recent years, early detection of breast cancer improves the curative rate and quality of life. Advances in diagnostic imaging are making early detection increasingly common. Although mammography is the most popular examination method and yields excellent image description, diagnosis

is influenced by imaging technique and ability to read the images. A clear image can be achieved if the mammography image acquired at 28 KV using an special filter, energy subtracted at 32 KV using another filter. The detection rate and proportion of early breast cancer detected on the whole, will rise, if mamography is introduced into the present mass screening for breast cancer, but its implementation requires improved facilities, imaging capability, and experience in image reading (*Kido C. 1994*).

Mammographic finding peculiar to breast cancer include :

- Typical speculated image.
- Distortion of local architecture.
- Elusters of microcalcification.
- Dominant mass > 1 cm in diameter.
- Stellate lesions (*Geelhood et al., 1991*).

In United States, the National Cancer Institute and the American Cancer Society agree on guidelines for periodic check-ups with mammography and breast palpation :

- 1- All women with signs and symtomes of breast diseases should have mammography as well as physician examination whenever needed regradless of age.
- 2- All women should have a base-line mamnogram between the ages of 35-40 years whether symptomatic or not.
- 3- All women over 50 should have both physical examination and mammography every year