Update in Early Detection and Management of Breast Cancer

An Essay

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By
Khaled Mohammed Abdelraouf Heider

MB.B.Ch
Faculty of Medicine – Ain Shams University

Under supervision of

Prof. Dr. Imam El-Said Ezzat Fakhr

Professor of General Surgery
Faculty of Medicine - Ain Shams University

Dr. Haitham Mostafa El-Maleh

Lecturer of General Surgery
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
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بسم الله الرحمن الرحيم

وقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ
ورَسُولُهُ والْمُؤْمِنُونَ

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List of Abbreviations

ACS	American Cancer Society
ADH	Atypical ductal Hyperplasia
AIs	Aromatase Inhibitors
AJCCS	American Joint Committee on Cancer Strategy System
ALH	Atypical lobular Hyperplasia
ALND	Axillary LN Dissection
ATAC Trial	Anastrozole, Tamoxifen alone or in combination.
BCDDP	Breast cancer detection demonstration project
BCT	Breast Conservative Therapy
BI-RADS	Breast Imaging Data Reporting System
BSE	Breast Self Examination
CBE	Clinical Breast Examination
DCIS	Ductal carcinoma in situ
DLI	Dermal Lymphatic Invasion
ER +/-	Estrogen Receptor +/-
FISH	Fluorescent in Situ Hybridization
FNAC	Fine Needle Aspiration Cytology
FNC	Fine Needle Cytology
GWAS	Genome-wide Associated studies
IBC	Inflammatory Breast Cancer
IDC	Invasive Ductal Carcinoma
IHC staining	Immunohistochemical Staining
ILC	Invasive Lobular Carcinoma
LCIS	Lobular carcinoma in situ
LHCH	Luteinizing Hormone releasing Hormone
MRM	Modified Radical Mastectomy
NAC	Nipple areolar complex
NOS	Invasive Ductal (not otherwise specific) Carcinoma
NSABP	National Surgical Adjuvant Breast & Bowel Project

List of Abbreviations (Cont.)

OS	Overall Survival
PET	Positron Emission Tomography
PLCO cancer	Prostate, lung, colorectal and ovarian cancer
PR +/-	Progesterone Receptor +/-
SERMs	Selective estrogen receptor modulators
SLND	Sentinel LN Dissection
SPF	S-Phase Fraction
TRAM Flap	Transverse Rectus Abdominis Myocutaneous Flap
RFS	Recurrence Free Survival
RR	Relative risk
RT-PCR	Reverse Transcriptase polymerase Chain Reaction
STAR Trial	Study of Tamoxifen and Raloxifene Trial
TLI	Thymidine Labelling Index

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Introduction

Breast cancer is the most commonly diagnosed malignancy amongst women, with an incidence rate more than twice that of colorectal cancer and cervical cancer, and about three times that of lung cancer. However breast cancer mortality worldwide is just 25% greater than that of lung cancer in women. In 2005, breast cancer caused 502,000 deaths worldwide (7% of cancer deaths; almost 1% of all deaths) (**Abeloff et al., 2004).**

Both incidence and death rates for breast cancer have been declining in the last few years. Nevertheless, In 2005 the Society for Women's Health Research indicated that breast cancer remains the most feared disease, even though heart disease is a much more common cause of death among women. Incidence of breast cancer in men are approximately 100 times less common than in women, but men with breast cancer are considered to have the same statistical survival rate as women (**Avis et al., 2005)**.

Attention has been focused on early ways of diagnosis of breast cancer as early management of the tumors markedly affects outcomes (**Edwards et al., 2002).**

Early detection means using an approach that allows earlier diagnosis of breast cancer. Early detection improves the chances that breast cancer can be diagnosed at an early stage and treated successfully. Breast cancer that is detected because it is causing symptoms tends to be relatively larger and is more likely to have spread beyond the breast. In contrast, breast cancer found during screening examinations is more likely to be small and still confined to the breast (**Silverstien et al., 2006)**.

The goal of screening examinations for early breast cancer detection is to find cancer before it start symptoms. Screening refers to tests and exams used to find a cancer in people who do not have any symptoms (**Saslow et al., 2007).**

For women at high risk of breast cancer, such as those with BRCA gene mutations or a strong family history, both MRI and mammogram exams of the breast are recommended (**Pisano et al., 2005).**

While mammography is an excellent way to find most breast cancers at their earliest and most curable stage, it does not detect all breast cancers. Newer techniques may help to make mammography more accurate as Digital Mammograms, Computer-aided Detection and Diagnosis (CAD). Other imaging tests as Breast Ultrasound and Ductogram(Galactogram) (**Fenton et al., 2007)**.

Several newer imaging methods are now being studied for use in evaluating abnormalities that may be in breast cancers as Tomosynthesis (3D mammography) and MRI-assisted Breast Biopsy (**Elmore et al., 2007).**

Surgical procedures for breast cancer include, modified radical mastectomy, simple mastectomy, skin sparing mastectomy and preventive mastectomy (**Willett et al., 2004)**.

Medical therapy of breast cancer includes, radiation therapy and systemic therapy which includes biologic therapy, chemotherapy, and hormone therapy (**Hughes et al., 2004)**.

Systemic treatment given before surgery called neoadjuvant therapy is effective in stopping disease progression, improving long term survival and distant

recurrence. Systemic treatment given after surgery called adjuvant therapy is used to kill any undetected tumor cells that migrate to other parts of the body (**Mauri et al., 2005).**

Reconstruction of breast may be performed as immediate or delayed reconstruction. Reconstruction options include tissue expander or implant reconstructions and autologous tissue reconstruction most often with transversus rectus abdominis muscle (TRAM) flap (**Ragaz et al., 2005).**

Aim of The Work

The aim of the work is to put spotlight on the early detection and proper management of breast cancer to achieve better prognosis.