

Retrospective study of breast cancer in young women: patient and disease characteristics

A Thesis Submitted By

Mariam Emil Francis

M.B.B.Ch.

In Partial Fulfillment of Master Degree

Under The Supervision of

Prof. Dr. Mohamed Mahmoud Mousa

PROFESSOR OF CLINICAL ONCOLOGY

FACULTY OF MEDICINE

CAIRO UNIVERSITY

Dr.Soha Mohammed Talima

LECTURER OF CLINICAL ONCOLOGY

FACULTY OF MEDICINE

CAIRO UNIVERSITY

Dr.Shaimaa Farouk Lasheen

LECTURER OF CLINICAL ONCOLOGY

FACULTY OF MEDICINE

CAIRO UNIVERSITY

2016

ACKNOWLEDGEMENT

Before all , I should express my thanks and gratitude to **GOD** , the greater doctor , the most merciful healer , the creative of all creatures and the beholder of all knowledge.

I would like to express my sincerest appreciation and gratitude to my professor , **Prof. Dr. Mohammed Mahmoud Mousa** , professor of clinical oncology , Faculty of medicine , Cairo university , for his valuable supervision , generous help in each step , and precious criticism and suggestions for this work. It was a pleasure and privilege to work under his supervision and constructive guidance.

I am also deeply grateful and indebted to **Dr.Soha Mohammed Talima** , Lecturer of clinical oncology , Faculty of medicine , Cairo university , for her sincere effort , fruitful suggestions , meticulous advice and continuous encouragement.

And my deep thanks to **Dr. Shaimaa Farouk Lasheen** , lecturer of clinical oncology , Faculty of medicine , Cairo university , for her cooperation and kind support.

I am most deeply thankful to those whom I burdened a lot , keep pushing me forward and supporting me throughout my life **My Father , My Mother and My family** since without their encouragement , I would have not been able to accomplish this work.

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List of abbreviations

AMH	Antimüllerian Hormone
AR	Androgen Receptor
BCT	Breast Conservation Therapy
BMI	Body Mass Index
CBE	Clinical Breast Examination
CNS	Central Nervous System
CIA	Chemotherapy-Induced Amenorrhea
CRA	Chemotherapy Related Amenorrhea
CT	Computed Tomography
DFS	Disease Free Survival
EBCTCG	Early Breast Cancer Trialists' Collaborative Group
EGFR	Epidermal Growth Factor Receptor
ERα	Estrogen Receptor α
ERβ	Estrogen Receptor β
ET	Endocrinal Therapy
FSH	Follicle-Stimulating Hormone
G-CSF	Granulocyte Colony-Stimulating Factor
GnRH	Gonadotropin-Releasing Hormone

Gy Grey
HER2 Human Epidermal Growth Factor 2
HR hormone receptor
IHC Immunohistochemistry
IQ Intelligence Quotient
IVF In-Vitro Fertilization
MAPK Mitogen-Activated Protein Kinase
MR Magnetic Resonance
mRNA Messenger Ribonucleic Acid
mTOR Mammalian Target Of Rapamycin
OS Ovarian Suppression
PALB2 Partner And Localizer of BRCA2
PBSO Prophylactic Bilateral Salpingo-Oophorectomy
pCR Pathological Complete Remission
PDL 1 Program Death Ligand 1
PMRT Postmastectomy Radiotherapy
PR Progesteron Receptor
PABC Pregnancy-Associated Breast Cancer
PTEN Phosphatase and Tensin Homologue
RANKL Receptor Activator of Nuclear Factor Kappa B
 Ligand
RCOG Royal College of Obstetricians and
 Gynaecologists
RT Radiotherapy
SBE Self-Breast Examination

SEER Surveillance, Epidemiology, and End Result
SLNB Sentinel LN biopsy

TP53 Tumor Protein 53

WBRT Whole Breast Radiation Therapy

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Abstract

Background :

Although uncommon, breast cancer in young women is worthy of special attention due to the unique and complex issues that are raised. More aggressive biology and late stages at presentation present specific challenges associated with the care of younger breast cancer patients. Other unique challenges which include fertility preservation, management of inherited breast cancer syndromes, maintenance of bone health, secondary prevention, and attention to psychosocial issues require further attention from health professionals.

Patients & Methodology :

This is a retrospective study conducted at Kasr-Al-Ainy oncology center “NEMROCK” in the period from March 2015 to September 2016. The medical records of female patients diagnosed with breast cancer under the age of 40 years in the period from January 2005 to December 2014 were retrospectively reviewed and reported upon.

Results :

There was no statistically significant difference in disease characteristics and treatment outcomes between patients aged less than 35 and patients aged 35-39.

Pregnancy associated breast cancer patients presented with stage 4 disease more than non-pregnancy associated. Time from onset of presenting symptom to diagnosis was significantly longer in PABC patients.

Conclusion:

Young women diagnosed with breast cancer tend to have more aggressive biology and consequently poorer prognosis. PABC patients tend to present late and consequently at later stages.

Key words:

Breast Cancer -Young- Kasr Al Ainy-below 40

Introduction and Aim of Work

Approximately 7% of women with breast cancer are diagnosed before the age of 40 years, and this disease accounts for more than 40% of all cancer in women in this age group. Survival rates are worse when compared to those in older women, and multivariate analysis has shown younger age to be an independent predictor of adverse outcome. Chemotherapy, endocrine, and local therapies have the potential to significantly impact both the physiologic health—including future fertility, premature menopause, and bone health—and the psychological health of young women as they face a diagnosis of breast cancer.

Study Objectives :

- To retrospectively evaluate the clinical and pathological data as well as the outcome of patients diagnosed with breast cancer at an age younger than forty.
- To retrospectively compare the clinic-pathological data and the outcome of patients diagnosed at an age younger than 35 to those diagnosed at an age of 35-39 years (in an effort to define which is a more relevant age cut-off for breast cancer diagnosed at a young age in our region).

-To retrospectively report on those patients diagnosed with pregnancy-associated breast cancer (defined as breast cancer diagnosed during pregnancy and till one year after labour).(193)

Review of literature

CHAPTER 1

BREAST CANCER AT YOUNG AGE

Introduction

Early-onset breast cancer is relatively rare; however, it represents the commonest cause of cancer in women under the age of 40 (1). In the US, approximately 33,000 women under the age of 45 years are diagnosed with breast cancer every year, and it is the leading cause of cancer-related deaths in this age group (2). Compared to older women with breast cancer, younger women tend to have a more aggressive biology and a poorer prognosis (Table 1). Younger women with breast cancer also face unique challenges such as premature ovarian failure, psychosocial issues with ongoing careers, and raising young families, as well as extended survivorship periods and its attendant complications. It is therefore imperative to recognize the unique issues that younger women face and plan management in a multidisciplinary fashion to optimize clinical outcomes.

Breast cancer screening

Screening for breast cancer should begin at age 40 for average-risk women (3). This includes annual mammography and clinical breast examination (CBE). Breast self-examination (BSE) is an additional option. For average-risk women under age 40, screening consists of CBE every 3 years with optional BSE; routine use of imaging is not recommended.