بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY

Impact of Axillary Lymph Nodes Ratio on Outcomes of Non Metastatic, Triple Negative Breast Cancer Patients treated with Up Front Surgery (A Retrospective Study)

Thesis

Submitted for Partial Fulfillment of Master Degree in Clinical Oncology & Nuclear Medicine

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Asmaa Khalaf Ahmed

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Abb.	Full term
ALNR	*Axillary Lymph Nodes Ratio*
BRCA1	*Breast Cancer Gene One*
CNB	*Core Needle Biopsy*
DCIS	*Ductal Carcinoma in Situ*
EPT	*Estrogen-Progestin Therapy*
ER	*Estrogen Receptor*
ET	*Estrogen Therapy*
FNAB	*Fine Needle Aspiration Biopsy*
HER2	*Human Epidermal Growth Factor 2*
HT	*Hormone Therapy*
IDC	*Infiltrating Ductal Carcinoma*
ILC	*Infiltrating Lobular Carcinomas*
LCIS	*Lobular Carcinoma in Situ*
LN	*Lymph Node*
LNR	*Lymph Node Ratio*
LVI	*Lymphatic and Vascular Invasion*
M0	*Metastatic Disease*
MRI	*Magnetic Resonance Imaging*
NCI	*National Cancer Institute*
pKi67	*Ki67 Protein*
PR	*Progesterone Receptor*
SEER	*Surveillance, Epidemiology, and End Results*
SLN	*Sentinel Lymph Node*
TNBC	*Triple-Negative Breast Cancer*

INTRODUCTION

Breast cancer is the most common malignant tumor among females around the world and the second common type of malignancies. It represents 1.7 million new cases per year and 25% of all types of cancers ***(Balekouzou et al., 2016).***

According to,(pathological based statistics); 252,710 new cases were diagnosed with breast cancer among women in USA by the end of 2017, also approximately 40, 610 women died from breast cancer in 2017 ***(DeSantis et al., 2017).***

In Egypt, breast cancer is the most common cancer among females . According to, The Egypt National Cancer Institute (NCI) ; among 10, 556 patients at the end of 2001, breast cancer representing 18.9% of total cancer cases (35.1% in females and 2.2% in males) ***(Amal et al., 2014).***

The molecular classification of breast cancer (luminal, basal-like, HER2-positive enriched and normal-like) was the most important researching issue in the field of breast cancer ***(Cheang et al., 2015).***

The Triple-Negative Breast Cancer (TNBC) subtype representing about 15% of all breast cancers. It characterized by loss of expression of both Estrogen and Progesterone

Receptors and lack of over expression or amplification of the HER2/neu oncogene ***(Perou, 2011).***

TNBC often shows a more aggressive course than other molecular subtypes and poorer disease-specific survival with higher rates of recurrence(visceral and central nervous system metastases) ***(Bianchini et al., 2016).***

Axillary lymph node (LN) status is considered one of the most significant prognostic factors in breast cancer, it is mainly depended on the absolute number of involved LNs ***(Li et al., 2012).***

Inadequate lymph nodes dissection may lead to under staging of the axilla so, It has been well established that the number of dissected axillary LNS is an important factor in prognosis of breast cancer ***(Ahn et al., 2011).***

It is generally accepted that adequately assessment of axilla need to more than 10 LNS ***(National Comprehensive Cancer Network (NCCN), 2015).***

Lymph node ratio (LNR) is defined as the number of positive lymph nodes divided by the number of lymph nodes examined ***(Vinh-Hung et al., 2004).***

Many studies reported a large variation in the cutoff points used to differentiate breast cancer patients in risk groups

according to their LNR, Some studies divided the patients into 2 LNR risk groups, whereas others divided them into 3 LNR risk groups ***(Kim et al., 2013).***

In a big study analyzed data of 1, 829 node positive breast cancer patients, they divided patients into 3 LNR risk groups; low-risk [<0.20], intermediate-risk [0.21–0.65], and high-risk [>0.65] LNR groups ***(Vinh-Hung et al., 2009).***

Studies have demonstrated that LNR, which takes into consideration the adequacy of LN dissection, may enhance risk stratification, Some studies reported that the LNR system predicted prognosis better than pN system (using pN1–3 classification), so they suggested that LNR should be considered as an alternative to pN staging ***(Vinh-Hung et al., 2009; Danko et al., 2010).***

In another study, LNR is considered has a better prognostic value than the absolute number of involved axillary LNs ***(Xiao et al., 2013).***

The prognostic value of the LNR has already been well established for other malignancies, including colorectal cancer and pancreatic cancer ***(Jiang et al., 2019; Elshaer et al., 2019).***

AIM OF THE WORK

This is a retrospective study, The primary aim of this study is to assess the disease free survival and overall survival among the study group (non metastatic, triple negative breast cancer patients treated with upfront surgery) in relation to different axillary lymph node ratios.

The secondary objective is to assess the impact of axillary lymph nodes ratio on the pattern of relapse (loco-regional and metastatic).