

IMPACT OF AXILLARY LYMPH NODES RATIO ON OUTCOMES OF NON METASTATIC, TRIPLE NEGATIVE BREAST CANCER PATIENTS TREATED WITH UP FRONT SURGERY (A RETROSPECTIVE STUDY)

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ABSTRACT:

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Background: Axillary lymph node (LN) status is one of the most significant prognostic markers in breast cancer, many studies show that LN ratio (LNR) has been shown to outperform N staging in survival prediction.

Aim of the Work: To assess the impact of lymph node ratio (LNR) on the disease free survival (DFS), overall survival (OS) and pattern of recurrence among the study group (non metastatic, triple negative patients treated with upfront surgery).

Patients and Methods: A retrospective analysis of 42 female patients with non metastatic triple negative breast cancer treated with up front surgery from January 2016 and January 2019 at the breast unit, clinical oncology department, Ain shams university. to evaluate prognostic value of the lymph node ratio (LNR) in these patients.

Results: In this analysis there was statistical significant difference in the primary endpoint of DFS between group I with LNR <0.2 and group II with LNR ≥0.20 [Mean: 43.843 months versus 23.781 months; 3year DFS 68% versus 29.4% respectively]. P = 0.0049, although there was no statistical significant difference between these two groups in OS [Mean: 48.664 months versus 37.531 months; 3year OS 78.6% versus 65.4% respectively] P = 0.02618. Also, there was statistical significant increase risk of recurrence at group II with LNR ≥0.20 more than group I with LNR <0.2 [60% versus 40% respectively] P = 0.0152. On the other hand, ypN staging was not associated with PFS or OS where mean OS of N1 & N2-3 (46 months versus 42.3 months respectively) p=0.8005 and mean OS of N1 & N2-3 (46 months versus 42.3 months respectively) p=0.8005

Conclusion: The lymph node ratio (LNR) is a better prognostic factor of survival than N staging in non metastatic triple breast cancer patients and it may be accurate marker for staging of axillary nodes to evaluate of the prognosis in the clinical setting.

Keywords: Axillary Lymph Nodes - Non Metastatic - Breast Cancer

INTRODUCTION:

Breast cancer is the most common malignant tumor among females around the world. It represents 1.7 million new cases per year and 25% of all types of cancer s, and is the second common type of cancers⁽¹⁾.

The Triple-Negative Breast Cancer (TNBC) group representing 15% of all breast cancer cases. TNBC is characterized by loss of expression of Estrogen Receptor (ER) and Progesterone Receptor (PR) and lack of over expression or amplification of the HER2/neu oncogene⁽²⁾.

TNBC often shows an aggressive course, with higher rates of recurrence, visceral and central nervous system metastases and poorer disease-specific survival⁽³⁾.

Axillary lymph node (LN) status is one of the most significant prognostic markers in breast cancer, it is mainly depended on the absolute number of involved LNs⁽⁴⁾.

It has been well established that the number of axillary nodes harvested is an important factor in prognosis because inadequate dissections may lead to under staging of the axilla⁽⁵⁾. It's generally accepted that greater than 10 LNS needed to adequately assess the axilla⁽⁶⁾. Lymph node ratio (LNR) is defined as the number of involved nodes divided by the number of lymph nodes examined⁽⁷⁾.

Many studies regarding LNR in breast cancer demonstrated a large variation in the cutoff points used to classify patients in risk categories according to their LNR, Some authors divided the patients into 2 LNR risk groups, whereas others established 3 LNR risk groups⁽⁸⁾.

In a big study analyzed data of 1, 829 node positive breast cancer patients, based on maximum likelihood, they classified patients into low-risk [<0.20], intermediate-risk [$0.21-0.65$], and high-risk [>0.65] LNR groups⁽⁷⁾.

Studies have suggested that LNR, which takes into account the adequacy of LN dissection, may enhance risk stratification, Some authors suggest LNR should be considered as an alternative to pN staging because they observed that the LNR system predicted prognosis better than the traditional LNP system [using pN1-3 classification is a categorization of the LNP system^(7&9).

In another study, LNR is even considered more important than the absolute number of positive axillary LNs⁽¹⁰⁾.

The prognostic value of the LNR has already been demonstrated for other malignancies, including colorectal cancer and pancreatic cancer⁽¹¹⁾.

PATIENTS AND METHODS:

The study population consisted of 42 female patients diagnosed from January 2016 till January 2019 treated at the Breast cancer unit, the clinical oncology department, Ain Shams University Hospitals. All patients with pathologically proven breast cancer, triple -ve and Nodal (+ Ve) who had no distant metastasis at first presentation, treated with upfront surgery With adequate axillary dissection and had at least 6 month of regular follow up. Patients older than 80 years and who *have* double malignancy were excluded from this study. Data were retrospectively collected from patients' medical records and a correlation of clinico-pathologic factors (including age, comorbidities, tumor stage and ECOG PS at time of diagnosis) with DFS and OS was done.

Statistical Analysis:

Data were extracted and tabulated, and survival data recorded and tabulated to analyze the different prognostic criteria. All statistical analysis was carried out using MedCalc version 19.6 software for Windows (MedCalc Software Ltd).

OS was defined as the time from date of presentation until date of last follow-up, lost follow up, or death. DFS was defined as the time after end of primary treatment until tumor progression or death. Shapiro-Wilk test used to determine normal distribution of continuous variables. Chi-squared test or Fisher's exact test used to determine the relationship between two categorical variables. A p - value <0.05 was considered significant. The Kaplan Meier method and the Logrank test used to determine the significance of difference in survival between groups.

RESULTS:

Clinopathological parameters, LNR:

The study population consisted of 42 female patients. Their median age was 46 years, ranged from 35 to 55 years. We categorized female patient's age that <35 was 10(23.8%) and >35 was 32(76.2%). Study population 42.9% was post menopausal while 57.1% was premenopausal. Regarding side of tumor 47.6% was at left side while 52.4% was at right side. Regarding grade of tumor 52.4% was grade II while 54.8% was grade III. Modified radical mastectomy (MRM) was 61.9% while 38.1% was breast conservative surgery (BCS) of all population. Regarding the primary tumor size; the majority of the study population were T2 (57.1%) while T1 were 33.3% and T3 were 9.5%. Regarding the nodal infiltration the majority of the study population were n1 81% while n2 were 9.5% and n3 were 9.5%. Regarding removed axillary lns their median was 14, ranged 12 to 17.

Regarding negative lymph nodes their median was 11, ranged 10 to 14. Regarding pathological lymph nodes their median was 2.5, ranged 2 to 3. Regarding LNR their median was 0.176, ranged 0.111 to 0.222. In our study population all patients received adjuvant chemotherapy. 40.5% of patients received taxans as adjuvant CTH while 59.5% not received. Regarding Local relapse and visceral mets 97.6% was not metastatic versus 2.4% was metastatic. 52.4% did not relapsed versus 47.6% was relapsed. Local relapse 95.2% didn't relapsed versus 4.8% relapsed. Regarding Bone mets only 90.5% did not metastatic versus 9.5% metastatic. Regarding visceral mets only 85.7% was not metastatic versus 14.3% was metastatic. Regarding bone and visceral mets 83.3% was not metastatic versus 16.7% was metastatic. In our study population 73.8% is still alive while 26.2% died, as shown at (Table 1).

1. LNs removed) (cutoff 0.20) and clinopathological parameters

In our study population Mean age of patients with LNR <0.20 was significantly older than those with LNR ≥0.20 [48.1200 vs 41.3529 years respectively], P = 0.0417. 30.0% of those with age <35 years had LNR<0.20 versus 68.7% of those with age ≥35 years (P = 0.061606148). Among postmenopausal, 77.8% had LNR<0.20 versus 45.8% among premenopausal while 22.2% of post menopausal had LNR≥0.20 versus 54.2% of premenopausal [P = 0.057417737]. Of left side patients 25.0% had LNR≥0.20 versus 25.0% of right side patients while 75.0% of left side patients had LNR<0.20 versus 45.5% of right side patients [P = 0.0542]. Among grade III tumor 60.9% had LNR<0.20 versus 57.9% of grade II tumors [P = 0.8468]. Among patients with BCS 68.7% had LNR<0.20 versus 53.8% of MRM. No patients with T4 tumors had LNR≥0.20 versus 75.0% among T3 tumors, 37.5% among T2 tumors and 35.7% among T1 tumors [P = 0.3331]. Among patients had LN R ≥0.20, 42.9% received FEC Paclitaxel protocol versus 75.0% received FEC Docetaxel, 28.0% received FEC, 60% received AC Paclitaxel and 100.0% received AC Docetaxel [P = 0.2089]. 58.8% of patients received Taxane had LN R ≥0.20 versus 28.0% not received [P = 0.0484]. Among patients who had LN R ≥0.20, 60% of them had relapsed versus 22.7% not relapsed, which is statistically significant [P = 0.0152]. Local recurrence occurred more frequently in those with LNR≥0.20 than those with LNR<0.20 [100.0% vs 0.0% respectively, P = 0.0592]. Bone mets occurred more frequently in those with LNR≥0.20 than those with LNR<0.20 [80% vs 20% respectively, P = 0.055]. Visceral mets only occurred more frequently in those with LNR≥0.20 than those with LNR<0.20 [66.7% vs 33.3%, P = 0.20]. Bone and visceral mets occurred more frequently in those with LNR<0.20 than those with LNR≥0.20 [28.6% vs 71.4%, P =

0.68]. Regarding mortality, 54.5% of those with LNR \geq 0.20 had died versus 45.5% among those with LNR<0.20 [P = 0.2743], as shown at (Table 2).

Table (1): Clinopathological parameters, LNR and outcome of non metastatic triple negative breast cancer patients [N=42]

| Characteristics | All studied patients (N= 42) | | Characteristics | All studied patients (N= 42) | |
|--|--|-------|--|------------------------------|--------|
| | No. | % | | No. | % |
| Age Mean \pm SD Median (Range) | 45.381 \pm 10.6472 46.00 (35-55) | | Protocol AC Docetaxel | 1 | 2.4% |
| <35 | 10 | 23.8% | AC Paclitaxel | 5 | 11.9% |
| >35 | 32 | 76.2% | FEC | 25 | 59.5% |
| RLNs Mean \pm SD Median (Range) | 15.071 \pm 4.5285 14.000 (12-17) | | FEC Docetaxel | 4 | 9.5% |
| NLNs (Mean \pm SD) Median (Range) | 12.357 \pm 3.5669 11.000 (10-14) | | FEC Paclitaxel | 7 | 16.7% |
| PLNs Mean \pm SD Median (Range) | 2.714 \pm 1.9417 2.500 (2 to 3) | | Taxane Absent | 25 | 59.5% |
| LNRC Mean \pm SD Median (Range) | 0.179 \pm 0.08201 0.176 (0.111-0.222) | | Present | 17 | 40.5% |
| Menopaus Postmenopausal | 18 | 42.9% | Relapse Absent | 22 | 52.4% |
| Premenopausal | 24 | 57.1% | Present | 20 | 47.6% |
| Side Left | 20 | 47.6% | Local Relapse only Absent | 40 | 95.2 % |
| Right | 22 | 52.4% | Present | 2 | 4.8 % |
| Grade I | 0 | 0% | Bone mets only Absent | 38 | 90.5% |
| II | 19 | 52.4% | Present | 4 | 9.5 % |
| III | 23 | 54.8% | Visceral mets only Absent | 36 | 85.7% |
| Surgery BCS | 16 | 38.1% | Present | 6 | 14.3% |
| MRM | 26 | 61.9% | Bone and visceral mets Absent | 35 | 83.3% |
| Tumor size (T) T1 | 14 | 33.3% | Present | 7 | 16.7% |
| T2 | 24 | 57.1% | Local relapse and visceral mets Absent | 41 | 97.6 % |
| T3 | 4 | 9.5% | Present | 1 | 2.4 % |
| Nodal infiltration (N) N1 | 34 | 81.0% | Died Absent | 31 | 73.8% |
| N2 | 4 | 9.5% | Present | 11 | 26.2% |
| N3 | 4 | 9.5% | | | |

Table (2): Relation between LNR & and clinopathological parameters

| Characteristics | LNR | | | | P-value |
|---------------------------|--------------|-------|----------------|--------|--------------|
| | <0.20 (N=25) | | ≥ 0. 20 (N=25) | | |
| | No. | % | No. | % | |
| Age 35 | | | | | 0.061606148* |
| <35 | 3 | 30.0% | 7 | 70.0% | |
| ≥35 | 22 | 68.7% | 10 | 31.2% | |
| Menopaus | | | | | 0.057417737* |
| Postmenopausal | 14 | 77.8% | 4 | 22.2% | |
| Premenopausal | 11 | 45.8% | 13 | 54.2% | |
| Side | | | | | 0.0542‡ |
| Left | 15 | 75.0% | 5 | 25.0% | |
| Right | 10 | 45.5% | 12 | 54.5% | |
| Grade | | | | | 0.8468‡ |
| II | 11 | 57.9% | 8 | 42.1% | |
| III | 14 | 60.9% | 9 | 39.1% | |
| Surgery | | | | | 0.3451‡ |
| BCS | 11 | 68.7% | 5 | 31.2% | |
| MRM | 14 | 53.8% | 12 | 46.2% | |
| T | | | | | 0.3331‡ |
| T1 | 9 | 64.3% | 5 | 35.7% | |
| T2 | 15 | 62.5% | 9 | 37.5% | |
| T3 | 1 | 25.0% | 3 | 75.0% | |
| Protocols | | | | | 0.2089‡ |
| AC Docetaxel | 0 | 0.0% | 1 | 100.0% | |
| AC Paclitaxel | 2 | 40.0% | 3 | 60.0% | |
| FEC | 18 | 72.0% | 7 | 28.0% | |
| FEC Docetaxel | 1 | 25.0% | 3 | 75.0% | |
| FEC Paclitaxel | 4 | 57.1% | 3 | 42.9% | |
| Taxane | | | | | 0.0484‡ |
| Absent | 18 | 72.0% | 7 | 28.0% | |
| Present | 7 | 41.2% | 10 | 58.8% | |
| Relapse | | | | | 0.0152‡ |
| Absent | 17 | 77.3% | 5 | 22.7% | |
| Present | 8 | 40.0% | 12 | 60.0% | |
| Local_Relapse | | | | | 0.0592* |
| Absent | 25 | 64.1% | 14 | 35.9% | |
| Present | 0 | 0.0% | 3 | 100.0% | |
| Bone mets only | | | | | 0.055‡ |
| Absent | 24 | 64.9% | 13 | 35.1% | |
| Present | 1 | 20.0% | 4 | 80.0% | |
| Visceral mets only | | | | | 0.20* |
| Absent | 23 | 63.9% | 13 | 36.1% | |
| Present | 2 | 33.3% | 4 | 66.7% | |
| Bone and visceral | | | | | 0.68* |
| Absent | 20 | 57.1% | 15 | 42.9% | |
| Present | 5 | 71.4% | 2 | 28.6% | |
| Died | | | | | 0.2743‡ |
| Absent | 20 | 64.5% | 11 | 35.5% | |
| Present | 5 | 45.5% | 6 | 54.5% | |

* Fisher's exact test, ‡ Chi-square test, p<0.05 is significant.

2. Effect of LNR on Disease free survival (DFS) & Overall survival (OS)

Mean disease free survival among all patients was 36.590 months and 3 year DFS

was 52.8%. Disease free survival was significantly longer in those with LNR<0.20 than those with LNR≥0.20 [Mean: 43.843months versus23.781 months; 3 years

DFS 68% versus 29.4% respectively], as shown at (Table 3) (Diagram 1, 2). Mean overall survival among all patients was 46.054 months and 3 year OS was 73.8%. Overall survival was numerically longer in those with LNR<0.2 than those with

LNR≥0.2, but not statistically significant [Mean: 48.664 months versus 37.531 months; 3year 78.6% versus65.4% respectively], as shown at (Table 3) (Diagram 3&4).

Table 3: Effect of LNR on DFS & OS [N= 42] of non metastatic TNBC.

| Survival | All patients N=42 | NR | | P-value |
|-------------------------|------------------------------------|-----------------------------------|-----------------------------------|---------|
| | | < 0.20 {N=40} | ≥ 0.20 [N =20] | |
| DFS | | | | |
| Mean [month] [95 CI] | 36.590 month [30.172 to 43.008] | 43.843month [36.370 to 51.316] | 23.781month [16.812 to 30.750] | 0.0049 |
| Median DFS | 38.533month | NR | 19.233 month | |
| 1 year DFS [%] | 90.5% | 92% | 88.2% | |
| 2 year DFS [%] | 56.4% | 68% | 39.2% | |
| 3 year DFS [%] | 52.8% | 68% | 29.4% | |
| OS | | | | |
| Mean [month] [95%CI] | 46.054month [40.644 to 51.464] | 48.664month [42.278 to 55.050] | 37.531month [30.505 to 44.558] | 0.2618 |
| Median OS | NR | NR | NR | |
| 1 year OS [%] | 100% | 100% | 100% | |
| 2 year OS [%] | 77.1% | 78.6% | 74.8% | |
| 3 year OS [%] | 73.8% | 78.6% | 65.4% | |

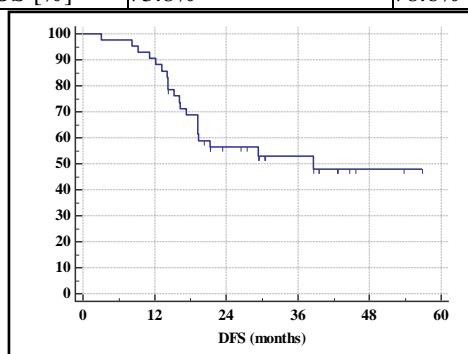


Diagram (1): Disease free survival of all patients.

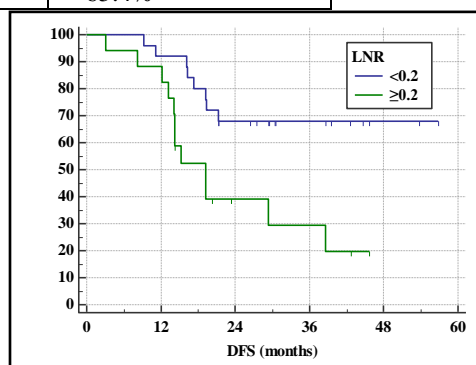


Diagram (2): Disease free survival & LNR

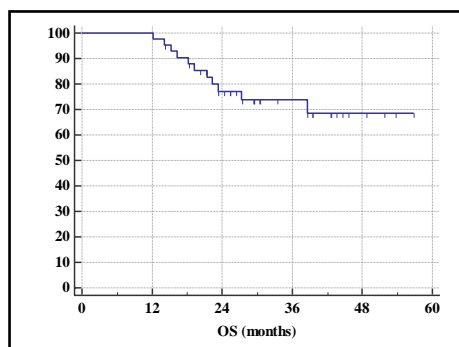


Diagram (3): Overall survival of all patients

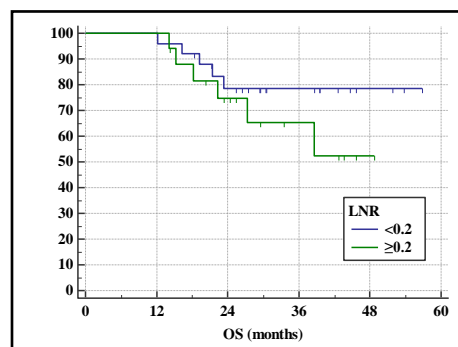


Diagram (4): Overall survival & LNR

DISCUSSION:

Breast carcinoma is the most common cancer among females accounting for 2.3 million newly diagnosed cases (11.7%) of total malignant tumors worldwide⁽¹²⁾.

TNBC represents a challenge for patients and clinicians due to its poorer prognosis and fewer treatment options, annually worldwide about 170,000 (12%-20%) of newly diagnosed breast cancer cases are the triple-negative⁽¹³⁾.

The number of positive axillary lymph nodes is considered the most important prognostic factor in breast cancer⁽⁴⁾.

The importance of the number of removed lymph nodes [RLNs] in the prognosis of breast cancer is also in debate⁽¹⁴⁾.

In terms of negative lymph nodes [NLNs], several studies have reported that the NLNs may also be used to assess prognosis of breast cancer⁽¹⁵⁾ however, at least one study showed a reverse relationship⁽¹⁶⁾.

The TNM classification does not account for the total number of LNs removed. There is disagreement on the extent of the axillary lymph node dissection [ALND]. An inadequate ALND might lead to understating of the axilla. The AJCC recommends at least 6 LNs to be dissected and examined, but in general it is accepted that at least 10 LNs should be dissected to accurately stage the axilla⁽¹⁷⁾.

Many studies have suggesting that LNR is more accurate prognostic factor than traditional TNM staging system. It exploits additional information on the total number of lymph nodes removed, so LNR maybe an alternative staging system for prognosis of breast cancer⁽⁷⁾.

On multivariate analysis, ALNR was an independent prognostic factor of overall

survival (OS), with a 2.5-fold increased risk of mortality at ALNR of ≥ 0.25 ⁽¹⁸⁾.

In our study, we evaluate prognostic effect of LNR on non metastatic triple negative breast cancer patients and set ideal cut-off value of them to distinguish between patient subgroups and forwarding a new staging system including LNR.

The median age for the patients in this study was 46 years (35 to 55), which in consistent with Wu study where the median age was 47 years (range, 23–90 years) and Wang study where the median age was 51.97 ± 11.64 , (25 to 86), Unlike that He study where the median age was 55 years (21 to 75 years), this may be due to the high life expectancy in Asian countries⁽¹⁶⁾⁽¹⁹⁾⁽²⁰⁾.

In our study, premenopausal patients represented about 57.1% (24/42) of all study group in consistent with Wu study where premenopausal patients were 65.3% (697/1068), in contrast to He study where postmenopausal patients represent about 66.9% (2753/4114) of the study, also in Wang study, 47.46% (187/394) were premenopausal^(16,19&20).

As regard to Tumor size the majority of patients were having early T stage (T1 and T2) (38/42) patients about 90.5 % of all study group which in consistent with data published by Morsy study where about 55 % of patients were having early (T1 and T2) disease and Wu study where early stage breast cancer patients (T1-T2) about 85.8%^(19&21).

In this study, 54.8% (23/42) patients were GIII which consistent with results of S I Kim study where 88.9% of patients were G II, GIII but G I about 11.1%. Unlike that He study which 81.7% were GIII, This may be due to small number of patients in our study^(8&20).

In view of the surgical treatment most of patients in our study treated by mastectomy about 61.9% (26/42) of all study group while the rest of patients about

38.1% (16/42) treated by breast-conserving surgery which consistent with Wang study, the majority of the patients (94.92%) treated by modified radical surgery, whereas only 5.08% treated by CBS and In He study, 63% treated by mastectomy, 37% treated by CBS^(16&20).

In our study the median numbers of axillary lymph nodes removed and positive lymph nodes were 14 (10-37) and 2.5 (1-13) respectively, which consistent with Morsy study where the median numbers of axillary lymph nodes removed and positive lymph nodes were 16 (8-30) and 10 (2-15) respectively; in both studies we included patients with adequate axillary dissection only⁽²¹⁾.

In our study about 59.5% of the patients received anthracycline based chemotherapy regimens only and about 40.5% received anthracycline plus taxanes, unlike that Wu study where 13% of the patients received CMF chemotherapy regimens only and about 79% received anthracycline only regimen and anthracycline plus taxanes⁽¹⁹⁾.

As there is no apparent agreement about the cutoff points that are required for classification of lymph node ratio (LNR); Many studies demonstrated a large variation in the cutoff points used to classify patients in risk groups according to their LNR⁽¹⁴⁾. Some authors divided the patients into 2 LNR risk groups, and others divided them into 3 LNR risk groups⁽²²⁾. In our study, we classified LNR in two categories LNR<0.20 as low risk group represents about 59.5 % (25/42) and those with LNR≥0.20 as high risk group represents about 40.5 % (17/42), because our study on early stage breast cancer patients and small number of cases in it.

In our study, the incidence of relapse was more in high- risk LNR group with the following result, 40% of patients with LNR<0.20 relapsed versus 60% of those with LNR≥0.20 [P = 0.0152] which in

consistent with study as those in the High-risk group had an increase in the risk of recurrence (P=0.049), also Morsy study which were 27.5% of low-risk patients with versus 55% of High-risk patients [p=0.037] with statistically significance^(20&21).

AS regard the overall survival in our study was not statistically significantly longer in those with low-risk LNR group versus that those with high -risk LNR group [Mean: 48.664 months versus 37.531 months; 3year OS 78.6% versus 65.4% respectively] P = 0.2618, unlike that He study where patients in the high-risk group had a significantly worse OS (P<0.001) and Morsy study which OS was significantly longer in those with low-risk LNR group than those with high-risk LNR group [Mean: 39.40 months versus 29.63 months; 3year OS 73.8% versus 23.3% respectively]; it may be due to short time of follow up in our study^(20&21).

In our study, Disease free survival was significantly longer in those with low-risk LNR group than those with high -risk LNR group [Mean: 43.843 months versus 23.781 months; 3year DFS 68% versus 29.4% respectively] (P = 0.0049) which in consistent with He study as patients in high risk LNR group had worse DFS (P<0.001) compared to patients in the low-risk LNR group⁽²⁰⁾.

In our study, we found that PN staging is not significant prognostic factor for OS and DFS where mean OS of N1&N2-3 (46 months versus 42.3 months respectively) p=0.8005 in consistent with Wang study, where p= 0.355 and DFS of N1&N2-3 in our study was (38.3 months versus 26.9 months respectively) p= 0.422 which in consistent with Wang study, where p= 0.4; so in our study LNR has a better prognostic value compared with pN staging and Lymph node ratio (LNR) may be consider as an alternative to pN staging in node-positive breast cancer^(16&22).

Conclusion:

The LNR is a better prognostic factor of survival than N staging in non metastatic triple breast cancer patients and it may be accurate staging of axillary nodes to evaluate of the prognosis in the clinical setting.

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تأثير نسبة العقدة الليمفاوية الإبطية على نتائج سرطان الثدي الثلاثي السلبي الغير منتشر للمرضى الذين عولجوا بالجراحة (دراسة بأثر رجعي)

سرطان الثدي هو الورم الخبيث الأكثر شيوعاً بين الإناث في جميع أنحاء العالم ويمثل 1.7 مليون حالة جديدة كل عام و ٢٥% من جميع أنواع السرطان، وهو النوع الثاني الشائع من أنواع السرطان.

بحلول نهاية عام ٢٠١٧، (الإحصاءات المرضية) تم تشخيص ما يقدر بنحو ٢٥٢,٧١٠ حالة جديدة من سرطان الثدي الغازية بين النساء في الولايات المتحدة الأمريكية، كما توفي حوالي ٤٠,٦١٠ امرأة من سرطان الثدي في عام ٢٠١٧.

في مصر، يعد سرطان الثدي أكثر أنواع السرطان شيوعاً بين النساء اللاتي يمثلن ١٨.٩٪ من إجمالي حالات السرطان (٣٥.١٪ لدى النساء و ٢.٢٪ عند الرجال) بين سلسلة المعهد القومي للسرطان بمصر والتي تضم ١٠,٥٥٦ مريض خلال عام ٢٠٠١.

كان البحث الأكثر أهمية في مجال سرطان الثدي هو التصنيف الجزيئي لسرطان الثدي (اللمعية، القاعدية ومستقبلات عامل النمو الجلدي البشري ٢) ومجموعة سرطان الثدي الثلاثي السلبي تمثل ١٥٪ من جميع أنواع سرطان الثدي. يتميز بفقدان التعبير عن مستقبلات هرمون الاستروجين ومستقبلات البروجيسترون وعدم وجود مستقبلات عامل النمو الجلدي البشري ٢.

غالبًا ما تظهر مجموعة سرطان الثدي السلبي الثلاثي مسارًا أكثر عدوانية من الأنواع الفرعية الجزيئية الأخرى.

تعتبر حالة العقدة الليمفاوية الإبطية واحدة من أهم العلامات الإنذارية لسرطان الثدي.

لقد ثبت جيدًا أن عدد العقد الإبطية التي يتم حصادها يعد عاملاً مهمًا في التشخيص لأن الاستئصال غير الكافي قد يؤدي إلى تشخيص غير كامل للإبط ومن المقبول عموماً أن أكثر من عشرة عقد ليمفاوية لازمة لتقييم الإبط بشكل كاف.

يتم تعريف نسبة العقدة الليمفاوية على أنها عدد العقد الموجبة مقسومة على عدد الغدد الليمفاوية التي تم فحصها.

هذه دراسة بأثر رجعي لتقييم تأثير نسبة العقد الليمفاوية على البقاء على قيد الحياة الخالية من المرض، والبقاء على قيد الحياة بشكل عام وإمكانية التكرار في مرضى سرطان الثدي الثلاثي السلبي غير النقلي الذين تم علاجهم بالجراحة الأمامية (نقطة القطع ٠.٢).

في تحليلنا بأثر رجعي كان هناك فرق ذو دلالة إحصائية في نقطة النهاية الأولية لـ البقاء على قيد الحياة الخالية من المرض بين المجموعة الأولى المتمثلة في نسبة العقد الليمفاوية >٠.٢ والمجموعة الثانية المتمثلة في نسبة العقد الليمفاوية ≤٠.٢ [المتوسط: ٤٣.٨٤٣ شهرًا مقابل ٢٣.٧٨١ شهرًا ؛ ونسبة البقاء على قيد الحياة الخالية من المرض لمدة ٣ سنوات ٦٨٪ مقابل ٢٩.٤٪ على التوالي]. بقيمة الاحتمالية = ٠.٠٠٤٩، على الرغم من عدم وجود فروق ذات دلالة إحصائية بين هاتين المجموعتين في البقاء على قيد الحياة بشكل عام [المتوسط: ٤٨.٦٦٤ شهرًا مقابل ٣٧.٥٣١ شهرًا ؛ والبقاء على قيد الحياة بشكل عام لمدة ٣ سنوات ٧٨.٦٪ مقابل ٦٥.٤٪ على التوالي] بقيمة الاحتمالية = ٠.٢٦١٨.

كما ارتبط المرضى الذين يعانون من ارتفاع نسبة العقد الليمفاوية من خطر ارتجاع المرض مقارنة مع أولئك في فئة المخاطر المنخفضة المشابهة لدراستنا (٦٠٪ مقابل ٤٠٪ على التوالي) بقيمة احتمالية = ٠.٠١٥٢.