Survival Probability of Breast Cancer beyond Serial Axillary Dissection – A Prospective Study

Presenters

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Introduction

❑ **Regional lymphadenectomy** is established surgical modality of treatment of carcinomata

❑ Right now T1 (≤ 2 cm) & T2 (>2 to 5 cm) represent 70% of BCs where ALNDs are replaced by SLNBs

Introduction

❑ **Extended regional LN dissection is indicated in gastric cancer surgery because it ↑es OS by 7% - 11% for removal of every 10 LNs up to a total of 40 LNs**

❑ **pN stages of TNM counts +ve LNs only to forecast prognosis of BC patients hence ignores therapeutic value of axillary lymphadenectomy**

Introduction

- **Only positive LNs count might not express prognosis of BC** powerfully because wide variation of ALNs (5 to >30) in humans

- **Axillary LNR, which is a measure of the proportion of cancerous LNs to the total number of LNs removed,** might efficiently forecast prognosis as it expresses regional tumor burden

Introduction

- ❑ **The objective of this study was to observe power and precision of expression of prognoses of DFS & OS (events) by pN and LNR sub-groups**

    - ○ **DFS = Time in months from date of surgery to date of diagnosis of recurrence**
    - ○ **OS = Time in months from date of diagnosis to date of death**

Materials & Methods

❑ **This prospective cohort study was conducted on 51 consecutive BC patients between Aug 2016 & Dec 2019 after obtaining written consent & permission of ethical board of AMCGH**

Materials & Methods

❑ **pN stage of TNM was recorded as pN0 (no +ve ALN, best prognosis), pN1 (1-3 +ve ALNs), pN2 (4-9 +ve ALNs), & pN3 (≥10 +ve ALNs, worst prognosis) stages**

❑ **LNR was classified as low- (≤0·20, best prognosis), intermediate- (0·21-0·65), & high-risk (>0·65, worst prognosis)**

Results

Patient distribution

❑ **pN stages:**
- ▪ **pN0:13 (25·49%) pts**
- ▪ **pN1: 16 (31·37%) pts**
- ▪ **pN2: 18 (35·29%) pts**
- ▪ **pN3: 4 (7·84%) pts**

❑ **LNR sub-groups:**
- ▪ **Low-risk LNR: 23 (44%) pts**
- ▪ **Intermediate-risk LNR: 19 (37·25%) pts**
- ▪ **High-risk LNR: 9 (17·65%) pts**

Results

❑ **Median follow-up according to Dec 2022**

➢ **DFS: 49·23 months**
➢ **OS: 52·63 months**
 (> 4 years)

Results

❑ **Distribution of patients with events (n = 51)**
  ➢ **Number of recurrences: 17 (33·3%)**
  ➢ **Number of deaths: 21 (41·2%)**

Results

❑ **Distribution of deaths among pN Stages (n = 51)**

  ➢ **pN0: 3 (6%)**
  ➢ **pN1: 5 (10%)**
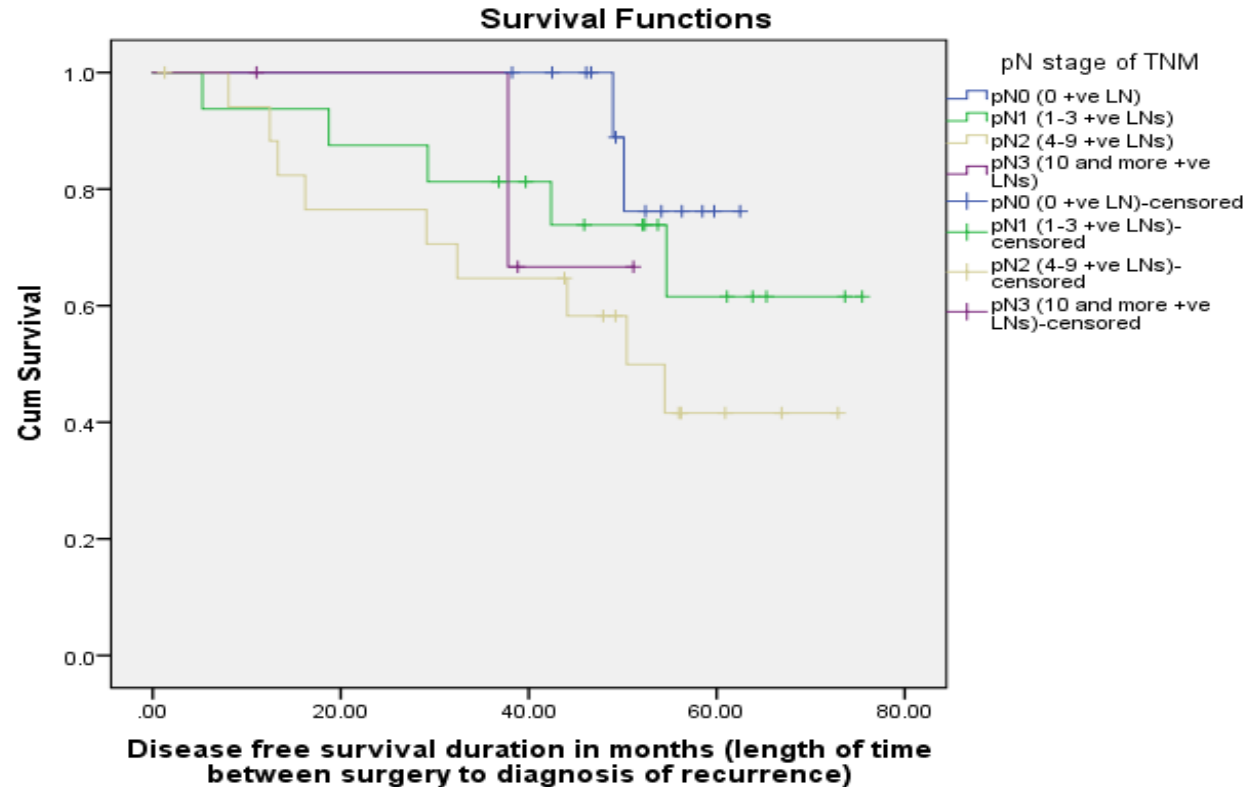 ➢ **pN2: 10 (20%)**
  ➢ **pN3: 3 (6%)**
  (p = 0·12)

Results

❑ **Distribution of deaths among LNR sub-groups (n = 51)**
   1) **Low-risk LNR: 7 (14%)**
   2) **Intermediate-risk LNR: 5 (10%)**
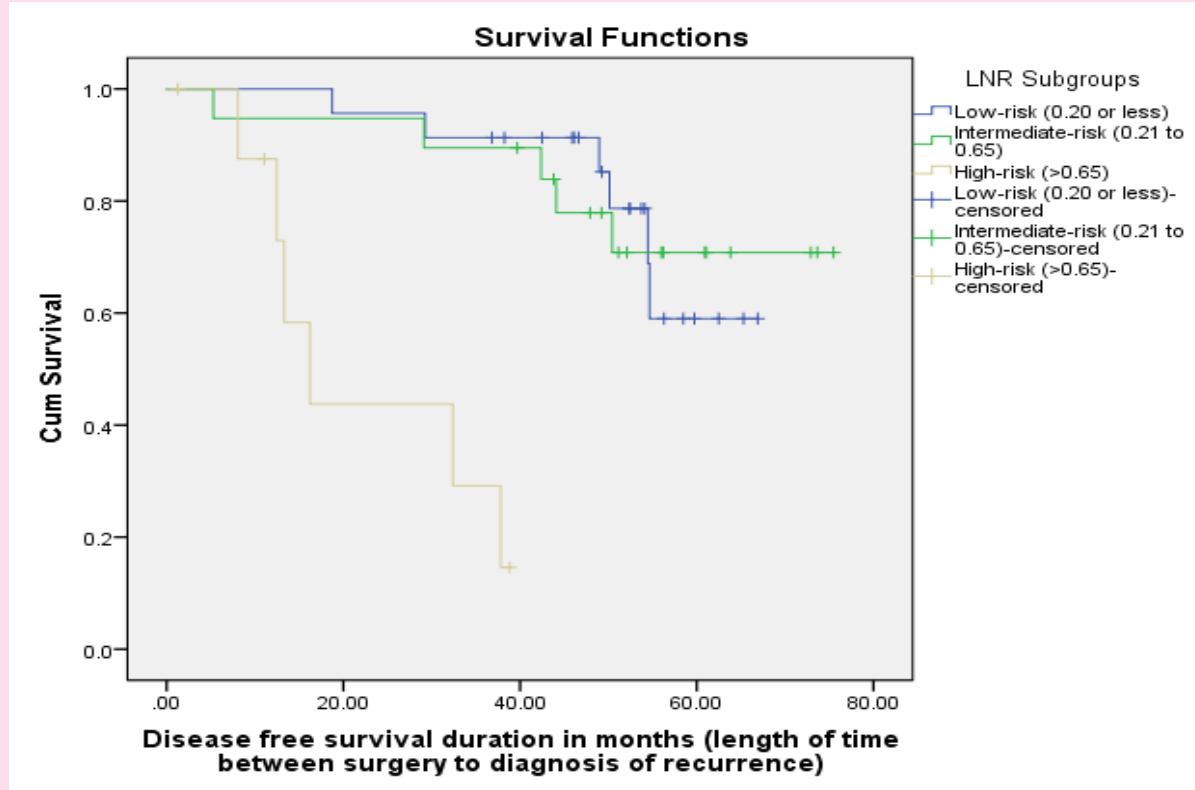   3) **High-risk LNR: 9 (18%)**
      (p = 0·000393)

Survival Function Curves of DFS of pN stages

Survival Functions of DFS of pN stages

❑ **Pair wise comparison indicated no significant difference of estimated mean survival time of DFS among pN stages except between pN0 & pN2 (Log Rank test, $p = 0.048$)**

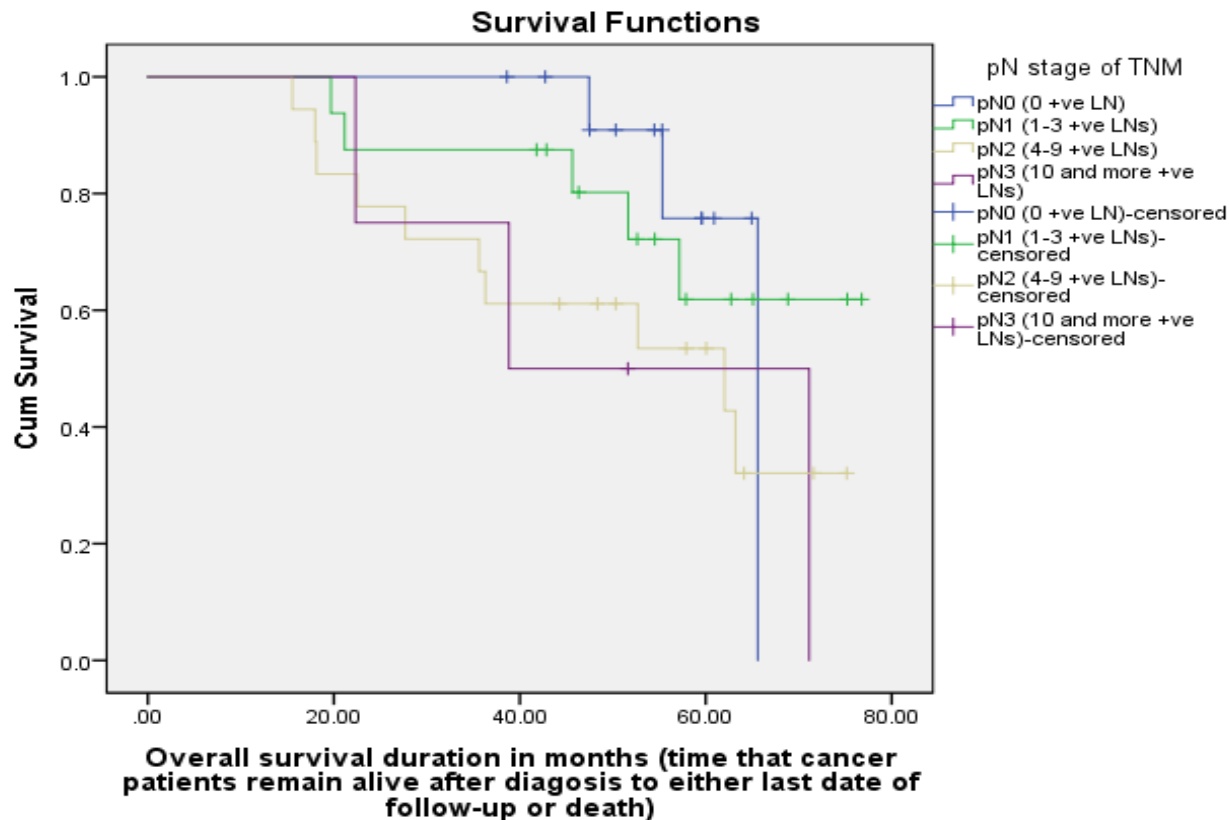# Survival Function Curves of DFS of LNR Subgroups

Survival Functions of DFS of LNR subgroups

❑ **Highly** significant differences of estimated mean survival time of DFS were observed between

1. Low- & high-risk LNR ($p = 0.000003$)
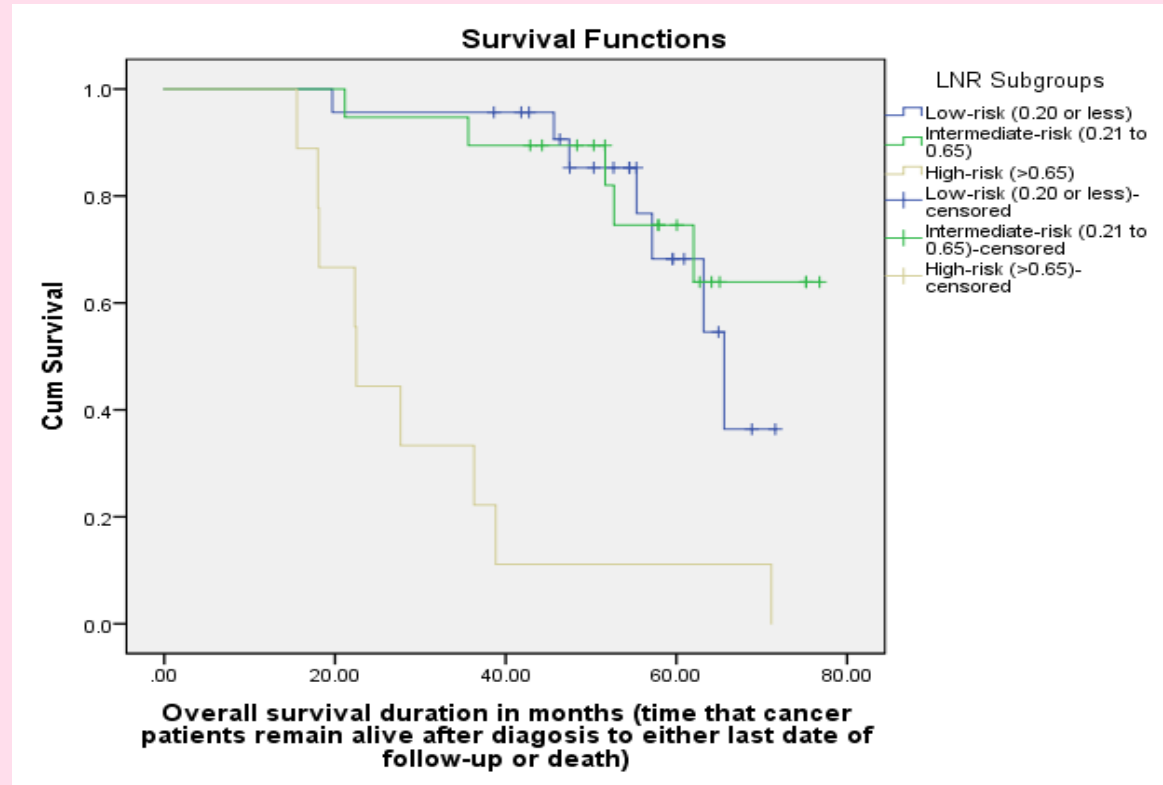2. Intermediate- & high-risk LNR ($p = 0.000115$)

Survival Function Curves of OS of pN stages

Survival Functions of OS of pN stages

❑ **Pair wise comparisons indicated no significant difference of estimated mean survival time of OS among pN stages**

Survival Functions Curves of OS of LNR Subgroups

Survival Functions of OS of LNR subgroups

1. Pair wise comparisons indicated highly significant difference of estimated mean survival time of OS between
    1. Low- & high-risk LNR ($p = 0.0000449$)
    2. Intermediate- & high-risk LNR ($p = 0.000014$)

ALND with Skin Sparing Key Hole Oncoplastic Surgery of Left Breast After One Month

ALND with Skin Sparing Key Hole Oncoplastic Surgery of Left Breast After Two Years

Conclusions

❑ **Counting positive nodes only through SLNBs for pN staging is a powerless predictor of events & is unable to clarify prognosis**

❑ **Total LN count through ALND for LNR subgrouping can powerfully clarify the best & worst prognosis of BC patients**

Conclusions

❑ **This clinical study indicated that best aesthetic outcome of OPS is possible by adding ALND thus avoiding irrational reduction mammoplasty of other normal breasts by plastic surgeons for correction of asymmetry**

❑ **LNR should replace pN of TNM stage of BC superscripting number of +ve/total number of LNs like pN** [17/26]