Axillary Lymph Node Status in Breast Cancer: A Comparative Study

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ABSTRACT

Aim: To compare the two different techniques to ascertain the axillary lymph nodal status in breast cancer.

Study design: Randomized controlled trial

Duration: Two years from July 2010 to December 2012.

Methods: This study includes prospective analysis of the subjects, who were treated in YG & LLGH. Data was entered into SPSS version 23.0 and were analyzed accordingly applying descriptive statistics e.g., mean, frequency and analytical e.g., t-test and Chi Square.

Results: 390 subjects were recruited and then divided randomly into two groups, A and B. Group A, included 237 patients (61%) who were treated with Blue dye assisted ALNS technique only while Group B, included remaining 153 (39%) patients who were treated with Combined Blue Dye + Radioisotope (TC99).

Conclusion: Blue dye assisted ALNS is a useful alternative to detect ipsilateral lymph node involvement in breast cancer where Radioisotopes, its safe usage.

Keywords: Axillary lymph node, breast cancer, YG & LLGH

INTRODUCTION

In breast cancer, a sentinel node is the first few lymph nodes into which a tumor drains (called the sentinel node). This helps the doctors to remove only those nodes of the lymphatic system most likely to contain cancer cells. The sentinel nodes are the first place that cancer is likely to spread in breast cancer, the sentinel node is usually located in the axillary nodes, under the arm. In a small percentage of cases, the sentinel node is found somewhere else in the lymphatic system of the breast. If the sentinel node is positive, there may be other positive lymph nodes upstream. If it is negative, it is highly likely that all of the upstream nodes are negative. In this study we think that when ideal gold standard sentinel lymph node biopsy is not available then blue dye assisted axillary lymph node sampling is a standard and acceptable alternative to assess the axilla.

MATERIAL AND METHODS

This randomized controlled trial was conducted at Betsicadwaladr university health board, Northwales, UK. This study includes prospective analysis of patients, who were treated in YG & LLGH. A causal comparative study was conducted over a period of two years from July 2010 to December 2012. A total of 390 subjects were recruited and then divided randomly into two groups, A and Bas follows:

Group A: 237 Patients (Treated with Blue dye assisted ALNS)
Group B: 153 Patients (Treated with SLNB)

Exclusion Criteria:
- Neoadjuvant chemo/radiotherapy
- Previous breast surgery
- Multifocality diagnosed prior to surgery
- Clinically suspected axillary node metastasis
- Pregnancy
- Known Allergy to blue dye or Isotope used during SNLB

After approval from ethical committee, 390 patients presenting who fulfill the inclusion and exclusion criteria were treated. Informed consent was obtained and patient’s demographic information (name, age, sex, height, weight, and contact) were recorded. Patients will be divided randomly into two groups (A: B). Patients in group A were treated with Blue dye assisted ALNS technique while Patients in group B were treated with SLNB Technique. All patients were undergo stoma reversal by researcher himself. 2mls of patent blue dye is being injected around the upper outer quadrant of the tumor at induction or on the table before preparing the patient for surgery. Gama Radioisotope Probe to detect sentinel lymph nodes. Blue axillary nodes detected after patent blue injection for histological assessments.

Data was collected by research proforma after detailed counselling of the patients about the purpose and method of the study; a written consent was also obtained. The collected data was entered into SPSS version 23.0 and analyzed accordingly. The
qualitative data is given in from of frequency and percentages. Mean±S.D was used for quantitative data. Chi-square test was used to see any significance association in neck pain and possible related factors. P-value less than or equal to 0.05 was taken as significant.

RESULTS

Table 1: Descriptive statistics and comparison of age, Sides, and Lymph Nodes

<table>
<thead>
<tr>
<th></th>
<th>ALNS(n=237)</th>
<th>SLNB (n=153)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in Years)</td>
<td>35 ---- 93</td>
<td>37 ---- 87</td>
</tr>
<tr>
<td>Average (mean) age</td>
<td>63.5</td>
<td>59.9</td>
</tr>
<tr>
<td>Side (Right)</td>
<td>111</td>
<td>71</td>
</tr>
<tr>
<td>Side (Left)</td>
<td>121</td>
<td>82</td>
</tr>
<tr>
<td>Bilateral</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>+ve Lymph Nodes</td>
<td>49</td>
<td>37</td>
</tr>
<tr>
<td>-ve Lymph Nodes</td>
<td>188</td>
<td>116</td>
</tr>
</tbody>
</table>

DISCUSSION

In breast cancer, a sentinel node is the first few lymph node(s) into which a tumor drains. This helps doctors remove only those nodes of the lymphatic system most likely to contain cancer cells. The sentinel nodes are the first place that cancer is likely to spread.

In breast cancer, the sentinel node is usually located in the axillary nodes, under the arm. In a small percentage of cases, the sentinel node is found somewhere else in the lymphatic system of the breast. If the sentinel node is positive, there may be other positive lymph nodes upstream. If it is negative, it is highly likely that all of the upstream nodes are negative.

In this study we think that when ideal gold standard sentinel lymph node biopsy is not available then blue dye assisted axillary lymph node sampling is a standard and acceptable alternative to assess the axilla.

CONCLUSION

Therefore blue dye assisted ALNS is a useful alternative to detect ipsilateral lymph node involvement in breast cancer where Radioisotopes, its safe usage and disposal along with Gamma camera and the expertise are not available.

Acknowledgement: We are thankful to the faculty of participating institutions for their help in data collections. We are also indebted to all the study participants for sparing time to fill the questionnaire, without which this research would have not been possible.
REFERENCES


9. The American Cancer Society provides information on sentinel node biopsy at http://www.cancer.org/