Refusal of sentinel lymph node biopsy in patients with luminal A subtype early breast cancer

Krivorotko P.V.[!], Gorina A.O.[!], Emelyanov A.S .[!], Enaldieva D.A.[!], Zhiltsova E.K.[!], Gigolaeva L.P.[!], Tabagua T.T.[!], Komyakhov A.V.[!], Mortada V.V.[!], Pesotsky R.S.[!], Ulrikh D.G.[!], Amirov N.S.[!], Semiglazov V.F.[!]

FSBI N. N. Petrov NMRC OF ONCOLOGY
Ministry of Healthcare Russian Federation

SAN ANTONIO BREAST CANCER SYMPOSIUM®
UT Health San Antonio Mays Cancer Center
AACR American Association for Cancer Research

Abstract

The indications for and extent of axillary surgery in breast cancer have evolved significantly over the past two decades and remain an area of active research and debate. Sentinel lymph node biopsy (SLNB) is currently the standard approach for axillary staging in patients with early-stage breast cancer. However, emerging data suggest that axillary surgery may be safely omitted in select patients aged ≥60 years with early-stage, luminal A, clinically node-negative breast cancer. This prospective study aimed to assess the applicability of this strategy in patients with hormone receptor-positive (HR+), HER2-negative (HER2–) tumors.

Methods and Materials

This prospective study included 100 patients diagnosed with cT1-2N0M0 **(Chart 1)**, HR+HER2-BC who underwent combined treatment from 2023 to 2025 at the FSBI «N.N.Petrov National Medical Research Center of Oncology» of the Russian Ministry of Health. All patients had clinically negative axillary lymph nodes confirmed via ultrasound, mammography and mammoscintigraphy/breast molecular imaging with 99mTc-MIBI. Surgical axillary staging was omitted in this patient population **(Fig.1).** Preoperative sentinel lymph node localization for adjuvant radiation treatment planning was performed using single-photon emission computed tomography (SPECT) lymphoscintigraphy.

Fig. 1. Trial design. *HR* hormone receptor; *HER2* human epidermal growth factor receptor 2; *AxUS* axillary ultrasound; *MG* mammography; *BCS* Breast-conserving surgery

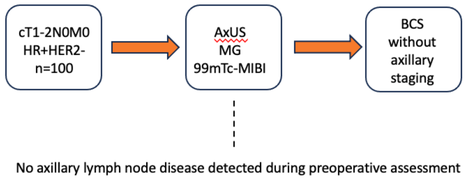


Table 1. Patient and tumor characteristics of our trial

Characteristics	Patients	
	N	%
Age at surgery (years)		
Median (IQR) age	67 [59; 86]	
<60	3	3
60-70	61	61
70-80	32	32
≥80	4	4
Menopausal status		
Postmenopausal	100	100
Clinical tumor size (mm)		
Median tumor size	15 [4; 30]	
Histology		
Ductal	94	94
Lobular	3	3
Other	3	3
Grade		
G1	27	27
G2	73	73
Adjuvant radiotherapy	100	100
Adjuvant systemic treatment		
Chemotherapy	0	0
Hormone therapy	100	100

Chart 1. Clinical tumor size

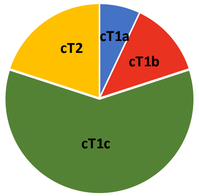


Chart 2. Adjuvant radiotherapy regimes

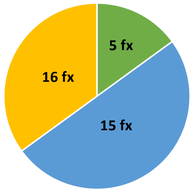


Chart 3. Ki-67 index, %

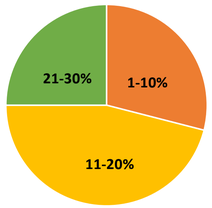


Chart 4. ER status, %

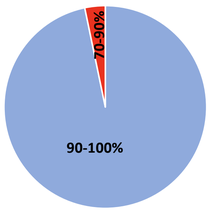
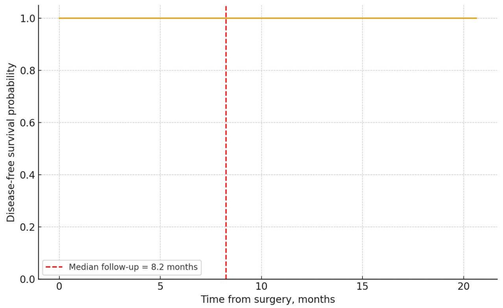


Fig. 2 Kaplan-Meier curve for disease-free survival.



Results

Among 100 patients with cT1-2N0M0 HR+HER2- breast cancer median age was 67 [59; 86] years. Median tumor size was 15 [4; 30] mm and tumors were grade 1 or 2. Estrogen receptor (ER) expression ranged from 90–100% in 95 cases and 70–90% in 5 cases **(Chart 4).** Progesterone receptor (PR) expression was 0–10% in 17 cases, 20–40% in 4, and 60–100% in 79. The Ki-67 proliferation index was 1–10% in 29 cases, 11–20% in 46, and 21–30% in 25 (**Chart 3**). Histological subtypes included 94 cases of invasive carcinoma of no special type (NST), 3 - lobular carcinomas, and 3 - mucinous carcinomas. All patients in the study received adjuvant radiotherapy, administered in hypo- or ultra-hypofractionation regimens at the discretion of the radiation oncologist for breast and sentinel lymph nodes. Specifically, 15 patients received a 5-fraction regimen, 50 patients received 15 fractions, 35 patients received 16 fractions, and 2 patients underwent high-dose brachytherapy additionally (**Chart 2).** Adjuvant hormone therapy was recommended for all patients: 79 received Aromatase Inhibitors and 21 received Tamoxifen. No patient was recommended to receive adjuvant chemotherapy. (**Table 1).** At a median follow-up of 8,2 months, no cases of local recurrence or disease progression were observed. (**Fig. 2)**

Conclusions

We believe that these findings support careful implementation of omission of surgical staging of the axilla in postmenopausal patients with cT1-2N0, HR+HER2– breast cancer and a negative axillary lymph nodes.

At our institution, this approach is currently implemented in patients over 59 years of age with ECOG performance status <3, tumor grade 1–2, ER expression >20% and Ki-67 index <30%.

Contact

Gorina Arina
Petrov National Medical Research Center of Oncology, Saint Petersburg, Russia.
Email: dr.arina_olegovna@mail.ru

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