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Clinical and Public Health Guidelines from the 2025 International symposium on breast diseases of inland São Paulo: strategies for early breast cancer detection and HER2-positive treatment within Brazil's unified health system

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ABSTRACT

Objective: To disseminate the clinical and public health policy consensus established during the 2025 International Symposium on Breast Diseases of Inland São Paulo, based on the voting of 110 expert panelists in breast oncology. **Methods:** Four priority topics were presented through evidence-based lectures, followed by anonymous electronic voting using a validated Delphi-based methodology. Consensus was defined as ≥75% agreement among panelists. **Results:** Consensus was achieved on prioritizing mammography screening from age 40 (80% agreement) and on the positive impact of interdisciplinary integration in early diagnosis (95% agreement). No consensus was reached on optimizing São Paulo's High Suspicion Law (67% agreement) or on the tumor size cutoff for neoadjuvant chemotherapy in human epidermal growth factor receptor 2 (HER2)-positive breast cancer, with the majority (53%) favoring tumors >20 mm (T2N0). **Conclusion:** The symposium's guidelines provide evidence-based recommendations to enhance breast cancer screening, early diagnosis, and treatment within Brazil's Unified Health System (SUS). While consensus was reached on earlier screening and interdisciplinary integration, further discussion is needed to optimize the High Suspicion Law and standardize neoadjuvant therapy criteria. These findings have significant potential to improve patient outcomes and resource allocation in the SUS.

KEYWORDS: breast cancer; mammographic screening; unified health system; early diagnosis; HER2; neoadjuvant therapy.

INTRODUCTION

Breast cancer is the most common malignancy among Brazilian women, significantly contributing to female morbidity and mortality. The National Cancer Institute (INCA) estimates 73,610 new cases annually in Brazil from 2023 to 2025[1]. Despite advances in oncologic care, the public health system faces critical barriers to early detection and treatment access, perpetuating high mortality rates, with 18,032 deaths recorded in 2022[2,3]. Moreover, the proportion of diagnoses at advanced stages remains alarming: 41.2% of cases in Brazil are diagnosed at stages III and IV, compared to 12.6% in the United States and 17.0% in Sweden[4]. Brazil's reality demands evidence-based interventions tailored to the operational

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capacity of Brazil's Unified Health System (SUS). In this context, the 2025 International Symposium on Breast Diseases of Inland São Paulo, organized by the Brazilian Society of Mastology – São Paulo Regional Chapter, served as a technical-scientific forum to develop practical, evidence-based guidelines informed by local, national, and international data. Selected topics were presented in plenary sessions and voted on by 110 specialists to achieve clinically valid and applicable consensus.

METHODS

The symposium's plenary sessions addressed four critical topics: mammographic screening, interdisciplinary integration, the High Suspicion Law protocol, and treatment of human epidermal growth factor receptor type 2 (HER2)-positive breast cancer. Each topic was introduced through evidence-based presentations, followed by technical debates among specialists and anonymous electronic voting. The voting process employed a validated Delphi-based methodology, previously used in international oncology consensus meetings (e.g., St. Gallen Breast Cancer Conference), ensuring structured and reliable consensus-building[5]. Panelists used a secure electronic platform to cast anonymous votes, with responses recorded in real-time. Consensus was defined as ≥75% agreement, a threshold consistent with established consensus methodologies[6]. Results were interpreted in light of available evidence and formulated as clinical guidelines.

RESULTS AND DISCUSSION

Mammographic screening in the SUS starting at age 40

Voting results: Yes: 80%; No: 20%.

The proposal to lower the starting age for mammographic screening in the SUS from 50 to 40 years was approved by 80% of panelists, reflecting a necessary shift given Brazil's epidemiological profile. INCA (2023) reports that 33.8% of breast cancer cases occur in women under 50, reaching 34.9% in São Paulo city[7]. Studies indicate that screening from age 40 can reduce breast cancer mortality by 12% (relative risk 0.88)[8,9], while the UK Age trial demonstrated a 25% reduction in cumulative mortality over ten years for women starting screening at 40[10]. However, mammography coverage in Brazil remains limited: only 35% of women aged 50–69 undergo regular mammograms, dropping to 25.4% for those aged 40–49[11]. Implementing earlier screening, combined with expanded coverage and health education, could address the current trend of advanced-stage diagnoses.

Practical recommendations

- Official implementation of mammographic screening from age 40 in the SUS;
- Progressive coverage targets aligned with World Health Organization (WHO) standards (>70%);
- Educational initiatives targeting the population and primary care providers;
- Impact monitoring through indicators such as stage at diagnosis and breast cancer-specific mortality.

Interdisciplinary integration and its impact on early diagnosis

Voting results: Yes: 95%; No: 5%.

The second topic, endorsed by 95% of panelists, underscored the role of interdisciplinary collaboration in improving oncologic outcomes. The current SUS model is fragmented, contributing to diagnostic and therapeutic delays. Shafaee et al.[12] reported an average of 321 days from symptom onset to treatment in Brazil, with 86 days between confirmed diagnosis and therapy initiation. Integration among primary care mastologists, radiologists, pathologists, and oncologists enhances early recognition of suspicious lesions, appropriate referrals, and rapid case resolution. High-Resolution Centers (CARE) have demonstrated efficiency, performing biopsies on the same day in 92% of cases[15]. Literature indicates that this approach reduces stage at diagnosis and total treatment costs, particularly for HER2-positive cases, which can exceed R$ 1,000,000 in advanced stages[13].

Practical recommendations

- Establishment of permanent interdisciplinary teams;
- Expansion of CAREs in metropolitan and rural areas;
- Integration across care levels with standardized workflows;
- Continuous training for primary and secondary care professionals.

Optimization of the high suspicion law in São Paulo

Voting results: Yes: 67%; No: 33%.

The High Suspicion Law (CIB Resolution No. 53/2021), which prioritizes rapid referral for patients with Breast Imaging Reporting and Data System (BI-RADS) 4–6 mammograms or suspicious clinical signs, is already implemented in São Paulo. However, only 67% of panelists supported optimization, falling short of the ≥75% consensus threshold. Antonini et al.[14] found that many primary care physicians are unaware of the law's criteria. Underutilization of BI-RADS classification as a fast-track entry point is also reported. A shortage of mastologists in less urbanized regions exacerbates inequities in diagnostic and treatment access. Diagnostic delays result in high costs: while stage I breast cancer treatment averages R$ 400,000, costs for stages II or III with HER2-positivity can exceed R$ 1,000,000[13].

Practical recommendations

- Mandatory training for primary care professionals on the law's criteria;

- Development of regional referral and counter-referral protocols;
- Implementation of digital triage systems with automated reports;
- Expansion of CAREs with fixed multidisciplinary teams;
- Introduction of patient navigation programs;
- Biannual audits based on time, access, and outcome indicators.

Criteria for neoadjuvant chemotherapy in HER2-positive breast cancer

Voting results:

- ≤5 mm (T1aN0): 2%;
- 6–10 mm (T1bN0): 8%;
- 10–20 mm (T1cN0): 28%;
- >20 mm (T2N0): 53%;
- T1a–T3 with N0 axilla: 8%.

The majority (53%) favored neoadjuvant chemotherapy for tumors >20 mm (T2N0); nevertheless, this did not meet the ≥75% consensus threshold. This preference aligns with the 2025 National Comprehensive Cancer Network (NCCN) guidelines[15] and the KATHERINE trial[16], which showed a 13.7% increase in invasive disease-free survival with trastuzumab emtansine (T-DM1) in patients with residual disease post-neoadjuvant therapy. Patients with HER2-positive tumors ≥T2 or cN+ benefit most from neoadjuvant therapy, enabling tumor downstaging, higher rates of breast-conserving surgery, and improved prognostic stratification.

Practical recommendations

- Neoadjuvant chemotherapy indicated for tumors >20 mm or clinically positive lymph nodes;
- Upfront surgery may be considered for tumors ≤20 mm, particularly in regions with limited access to targeted therapies;
- Multidisciplinary team discussions for personalized treatment plans;
- Tumor response monitoring to guide potential therapeutic adjustments.

CONCLUSIONS

The 2025 International Symposium on Breast Diseases of Inland São Paulo produced evidence-based, expert-driven guidelines tailored to the SUS context. Consensus was achieved on initiating mammographic screening at age 40 and promoting interdisciplinary integration, both critical for improving early diagnosis and patient outcomes. However, the lack of consensus on optimizing the High Suspicion Law and defining neoadjuvant chemotherapy criteria highlights the need for further research and discussion to address implementation challenges and regional disparities. These recommendations have the potential to transform the breast cancer patient journey in Brazil by promoting early diagnosis, rationalizing resources, and improving prognosis, but their success depends on addressing systemic barriers within the SUS.

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AUTHORS' CONTRIBUTIONS

ECP: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. FB: Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization. MM: Data curation, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation,

Visualization. JTAN: Data curation, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization. GMT: Data curation, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation. FB: Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization. BBG: Data curation, Formal analysis, Investigation, Methodology, Project administration, Software, Supervision, Validation, Visualization. DAB: Data curation, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization. AM: Investigation, Resources. RT: Investigation, Resources. JBRB: Investigation, Resources. GF: Investigation, Resources. ATH: Investigation, Resources.

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