

PRESENTATION: ORAL PRESENTATION (GENERAL SESSION) – BEST
LOCOREGIONAL TREATMENT STUDY

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997 – Economic impact of omitting sentinel lymph node biopsy in early breast cancer: a secondary analysis of the randomized venus trial

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Introduction: The omission of sentinel lymph node biopsy (SLNB) in early breast cancer patients who are clinically node-negative has been explored. However, data regarding the economic implications of this strategy remain limited. The VENUS trial is designed to evaluate SLNB omission.

Objective: This report presents a preplanned secondary endpoint consisting of a cost analysis comparing SLNB with ultrasound-based axillary staging.

Methods: This prospective, multicenter, non-inferiority randomized controlled trial included patients with T1–2, cN0 (clinical and ultrasound), M0 breast cancer, randomized to SLNB or no axillary surgery. A cost comparison was conducted between the two staging strategies: surgical and imaging-based. The surgical approach included lymphoscintigraphy, SLNB and histopathological analysis. The imaging-based strategy consisted of axillary ultrasound with percutaneous biopsy and histopathological evaluation of suspicious lymph nodes. Costs were calculated using Brazilian reimbursement systems (SIGTAP/DATASUS and TUSS/CBHPM) and expressed in US dollars (USD).

Results: A total of 713 patients were included: 371 imaging-based and 342 surgical. Ultrasound-based staging was associated with substantially lower costs. In the public system, the cost per patient was USD 12.24 in the imaging group *versus* USD 158.48 in the surgical group (92.3% reduction), whereas in the private system, costs were USD 84.06 *versus* USD 391.20 (78.5% reduction), respectively. Surgical staging was 12-fold more expensive in the public system and 4.3-fold in the private system. In a subgroup analysis aligned with the American Society of Clinical Oncology (ASCO) and the National Comprehensive Cancer Network (NCCN) guidelines for SLNB omission (age ≥50 years, T1, G1–2, estrogen receptor/progesterone receptor positive, human epidermal growth factor receptor 2 [HER2]-negative), costs per patient were 13.8-fold higher in the public system and 4.8-fold higher in the private system.

Conclusion: Axillary ultrasound-based staging demonstrates a substantial economic advantage over surgical staging in both public and private healthcare systems, with a more pronounced benefit observed in the public setting.

Ethics: Research Ethics Committee Approval (CAAE 06805118.2.0000.5404).

Registry: ClinicalTrials.gov (NCT05315154), Brazilian Registry of Clinical Trials (ReBEC) (RBR-8g6jbf).

Keywords: breast cancer; sentinel lymph node biopsy; breast cancer treatment; axillary surgery; treatment costs.