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VACUUM ASSISTED BIOPSY FOR BREAST CARCINOMA DIAGNOSIS: COST MINIMIZATION ANALYSIS

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Introduction: Breast cancer treatment depends on the diagnostic biopsy and the positivity of the biomarkers. Diagnostic lumpectomy is available in most centers but requires access to the operating room and can cause deformities, has high cost and morbidity. Vacuum assisted biopsy (VAB) is a less invasive and highly accurate alternative for diagnosis besides being a cheaper outpatient procedure. **Objectives:** To carry out the cost-minimization analysis between a VAB and a lumpectomy. **Methods:** Assuming that there is no difference in the accuracy between the two procedures, a cost-minimization analysis was performed. A decision tree model was developed considering patients undergoing VAB or lumpectomy. Depending on the result and the procedure performed, the patient may or may not perform a therapeutic lumpectomy. The analysis was based on a retrospective evaluation of 1,833 VABs at Pérola Byington Hospital (PBH), including the pathological results and the proportion of patients requiring a lumpectomy after the procedure. It was analyzed from three perspectives: PBH (direct medical costs), the Brazilian Unified Health System - SUS (Sigtap) and the Brazilian Society (Sigtap and indirect costs). The VAB cost kit (needle, guide clip, marker and reservoir) was estimated in R\$ 2,173. The cost of lost productivity was based on Gross Domestic Product (GDP) per capita (R\$ 120 per business day). It was considered that a VAB does not require hospitalization and results in two days of absence, while the lumpectomy requires two days of hospitalization and seven days of absence. **Results:** From HPB perspective, the average total cost for a patient who undergoes a VAB is R\$ 3,667 and for a lumpectomy is R\$ 4,313 (average savings of R\$ 646). Under the SUS perspective the average cost for a VAB is R\$ 2,987 and for a lumpectomy it is R\$ 2,700 (an increase of R\$ 287). The analysis from the perspective of society resulted in savings of R\$ 128 per patient (fewer days away than for patients undergoing a VAB). **Conclusions:** VAB is an invasive procedure that has advantages in relation to the days of hospitalization and absenteeism when compared to the lumpectomy. The cost-minimization found that VAB is cost-saving compared to lumpectomy (from the perspective of the PBH), which exclusively sees SUS patients, as well as the perspective of society. When analyzed from the perspective of SUS, there is a small increase in cost, but the cost of a VAB kit used may have overestimated the costs, and an incorporation could decrease the material costs.