Introduction

Endobronchial ultrasound guided (EBUS) is mostly used to evaluate mediastinal lymph nodes in lung cancer patients. However, mediastinoscopy is still the “gold standard” for staging of the mediastinum. The aim of this study was to estimate costs for EBUS (FujiFilm and Olympus) incorporation using a real world evidence approach.

Methods

This was a retrospective study conducted in a tertiary hospital from April 2018 to April 2019. All the patients with previous diagnosis of lung cancer who undergo mediastinoscopy were included. Clinical data were gathered from the files of the patients. We considered negative predictive value (NPV) of EBUS, number of patients, cost for each EBUS (FujiFilm e Olympus) procedure and amount paid for bronchoscopy and mediastinoscopy by SUS to calculate costs. The cost of the incorporation was estimated per patient as follow: 

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\text{cost for EBUS} \times \text{total of patients} - \left(\frac{\text{amount paid for bronchoscopy} \times \text{total pacientes}}{\text{total of patients}} + \frac{\text{amount paid for mediastinoscopy} \times \text{number of mediastinoscopy}}{\text{total of patients}}\right)
\]

Results

In that period, there were 13 lung cancer patients, 4 were positive for mediastinal malignance and 9 were negative. If NPV of EBUS was 11%, 8 patients would undergo mediastinoscopy. Therefore the cost estimated was 7,111.51 reais per patient using EBUS FujiFilm and 6.57 reais using EBUS Olympus. If NPV of EBUS was 90%, only one patient would undergo mediastinoscopy. Therefore the cost estimated was 7.514,00 reais per patient using EBUS FujiFilm and 409.09 reais using EBUS Olympus.

Conclusion

EBUS FujiFilm was not recommended to incorporate because its high cost. EBUS Olympus was recommended to incorporate according to budget availability in the hospital.