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Title **Effectiveness and Safety of Real Time Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration**

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Aim

To assess the effectiveness of real-time endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) in different pathologies compared to other available techniques for lymph node staging; and to assess the safety of real-time EBUS-TBNA in different pathologies.

Conclusions and results

1) EBUS-TBNA appears to be a safe and highly sensitive and specific technique for examining and staging mediastinal and hilar lymph nodes in patients with known or suspected lung malignancy; 2) this technique could decrease the overall number of procedures needed for staging/diagnosing lymph nodes and replace invasive techniques, but negative results always must be confirmed; 3) it is not yet possible to establish the exact place of EBUS-TBNA in the algorithm for suspected lung cancer or mediastinal staging or assess its usefulness for estimating prognoses or guiding the choice of treatment; 4) the evidence is insufficient to determine its use in other pathologies, eg, sarcoidosis or lymphoma.

The 13 original studies showed that sensitivity (Se) for EBUS-TBNA ranged from 85% to 100% and negative predictive value (NPV) from 11% to 97.4%. Specificity (Sp) and positive predictive value (PPV) were 100% in all studies. One study found that the Se, Sp, PPV, and NPV found for EBUS-TBNA was significantly greater than that of combined CT and FDG-PET. Another study compared EBUS-TBNA to EUS-FNA. The Se, Sp, and NPV of these techniques were 85%, 100%, and 72% and 80%, 100%, and 62%, respectively. The accuracy of the combined approach was 100%.

An evidence-based clinical practice guideline on the initial diagnosis of lung cancer recommended that EBUS-TBNA could be one of the confirmation techniques in patients with suspected small cell lung cancer based on radiographic and clinical findings, in patients with extensive infiltration of the mediastinum based on radiographic findings, and in patients with lesions in multiple sites that are suspected of metastases, but in whom the biopsy of a metastic site would be technically difficult.

Methods

Systematic literature review conducted in November 2007, without time limits, in the following databases: MEDLINE, EMBASE, ISI Web of Knowledge, Cochrane Library Plus, NHS Centre for Reviews and Dissemination, and Tripdatabe. Articles were selected based on previously established inclusion/exclusion criteria. The search included grey literature and a manual search of reference lists.

Further research/reviews required

Further studies are needed to assess the real value of EBUS-TBNA compared to conventional (PET, TC) and new techniques (EUS-FNA, CT fluoroscopy-guided TBNA, electromagnetic navigation) used for diagnosis and lymph node staging and establish the diagnostic algorithm for suspected lung cancer and mediastinal involvement. Adequate follow-up studies are needed to determine its usefulness in estimating prognoses and guiding treatment choices.

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