Sonographic guidance of mediastinal biopsy: an effective alternative to CT guidance
Rubens D J, Strang J G, Fultz P J, Gottlieb R H

Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Sonographic guidance of mediastinal biopsy (SGMBs) as an alternative strategy to CT-guided mediastinal biopsies.

Type of intervention
Diagnosis.

Economic study type
Cost-effectiveness analysis.

Study population
A cohort of male and female patients due to undergo mediastinal biopsy. No further details were given.

Setting
Hospital. The economic study was carried out in Rochester, NY, USA.

Dates to which data relate
The main effectiveness data were mainly taken from a single study conducted between 1994 and 1997. Resource and cost data were mainly derived from 1994-1997 sources. The price year was not stated.

Source of effectiveness data
The estimates for final outcomes (the number of successful SGMB biopsies and the number of complications) were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken retrospectively on the same patient sample as that used in the effectiveness study.

Study sample
A cohort of 41 patients was included in the analysis: 25 patients (11 male, average 45 years (range: 9 - 80)) underwent SGMB: 16 patients underwent CT-guided biopsies. Further study sample details were not given.

Study design
The study was a nonrandomised trial with concurrent controls. The duration of follow-up was 27 minutes. There was no loss to follow-up. The price year was not stated.
Analysis of effectiveness
The analysis of the clinical trial was based on treatment completers only. The primary health outcomes used in the analysis were the number of successful triages to SGMB and the number of complications.

Effectiveness results
Twenty-four patients had a successful triage to SGMB (96%). No complications were recorded.

Clinical conclusions
SGMB has been shown to be as safe and accurate as CT-guided biopsy.

Measure of benefits used in the economic analysis
The outcome measures were the number of successful triage experience to SGMB and the number of complications. No summary benefit measure was used in the analysis and as such the benefits were considered to be the same as the outcome measures.

Direct costs
Radiologic professional and technical costs from SGMB and CT-guided biopsy were included in the analysis. Discounting was not undertaken due to the short period of follow-up. The quantities and the prices were analysed separately. The quantity/cost boundary adopted was the hospital. The price year was not stated.

Statistical analysis of costs
Not undertaken.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Twenty-four patients had successful triage to SGMB (96%). No complications were recorded.

Cost results
The radiologic professional and technical costs for SGMB were $386 and $262, respectively. The radiologic professional and technical costs for CT-guided biopsy were $433 and $472, respectively. A net cost savings of 25% per procedure transferred was obtained by using SGMB instead of CT-guided biopsy.

Synthesis of costs and benefits
The SGMB strategy produced more favourable or equal outcomes but cost less than CT-guided biopsy which made it the dominant strategy. A net cost savings of 25% per procedure transferred was obtained by using SGMB instead of CT-guided biopsy.

Authors’ conclusions
SGMB was shown to be as safe and accurate as CT. Furthermore, the SGMB was approximately 25% less costly than
CT-guided biopsy. SGMB is valuable for identifying vessels, perfused tissue and for permitting upright biopsy positions in dyspneic patients.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear. The SGMB is a widely used diagnostic technique. You, as a user of this database, should consider whether these are widely used health technologies in your setting.

Validity of estimate of measure of benefit
No summary benefit measure was used in the analysis and as such the benefits are considered to be the same as the outcome measures. The data have not been used selectively but a full economic evaluation using one benefit measure would be required to assure greater validity.

Validity of estimate of costs
Resource quantities were reported separately from the prices. Costs were not specifically itemised.

Other issues
The authors' conclusions are likely to be justified given the uncertainties in the data. The issue of generalisability to other settings or counties was not addressed and nor were appropriate comparisons made with other studies. Results were not presented selectively. The authors noted that potential improvements in SGMB might be obtained by positioning patients such that gravity leads the lesion toward the chest wall pleural surface, thus providing an adequate window.

Implications of the study
More research is required into the analysis of SGMB performed by positioning patients such that gravity leads the lesion toward the chest wall pleural surface.

Source of funding
None stated.

Bibliographic details

PubMedID
9393174

DOI
10.2214/ajr.169.6.9393174

Indexing Status
Subject indexing assigned by NLM

MeSH
Biopsy, Needle /economics /methods; Cost-Benefit Analysis; Female; Humans; Male; Mediastinal Diseases /pathology /ultrasonography; Mediastinal Neoplasms /pathology /ultrasonography; Middle Aged; Retrospective Studies; Tomography, X-Ray Computed; Triage; Ultrasonography, Interventional /economics

AccessionNumber
