

Publication summary

Biopsy frequency and complications among lung cancer patients in the United States

Zhang Y, Shi L, Simoff MJ, J Wagner O, Lavin J. Lung Cancer Manag. 2020;9(4):LMT40. Published 2020 Aug 17.
doi:10.2217/lmt-2020-0022

Biopsy frequency and complications among lung cancer patients in the United States¹

Published study results

Objective:

The purpose of this paper is to describe the frequency and distribution of diagnostic procedures and their complications for people with lung cancer using data from a US administrative claims database.

Study design:

Retrospective cohort study within an administrative database.

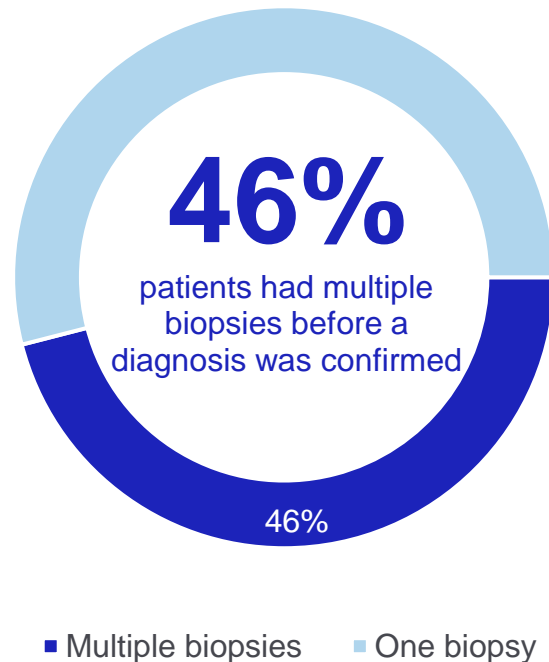
Materials & methods:

This observational study utilized data from both the **IBM MarketScan® Commercial Claims** and Encounters and Medicare Supplemental Databases. The study included **patients ≥18 years of age**, with a **principal diagnosis of lung cancer** recorded on claims between the observation periods of **1 January 2013 through 31 December 2015**. Patients were required to have continuous health plan enrollment 6 months prior to and 6 months following their diagnosis to ensure that biopsies, diagnosis and treatment represented a single episode of care. Procedures for biopsy were recognized using the **Current Procedural Terminology codes, ICD-9 CM and ICD-10 CM procedure codes** and stratified into three categories: percutaneous, bronchoscopic and surgical biopsy. Complications were restricted to iatrogenic pneumothorax with and without a chest tube, air leak and hemorrhage, occurring within specific time periods around the biopsy date (i.e., day 0–1, within 5 days). Only **biopsy procedures that occurred prior to the first course of treatment** were included in the analysis and represent the final analytical sample.

1. Zhang Y, Shi L, Simoff MJ, J Wagner O, Lavin J. Biopsy frequency and complications among lung cancer patients in the United States. *Lung Cancer Manag.* 2020;9(4):LMT40. Published 2020 Aug 17. doi:10.2217/lmt-2020-0022

Biopsy frequency and complications among lung cancer patients in the United States¹

Published study results



For those with multiple biopsies, the time lag between procedures **could add up to**

90 days

to the patient's journey prior to treatment.

Key results

- Prior to confirming a diagnosis, patients undergo an average of **1.7 biopsies**
- 53% of the first biopsies performed were **percutaneous**
- For the 46% of patients with multiple biopsies:
 - The distribution of biopsy was **percutaneous** (47%), bronchoscopic (43%) and surgical (10%).
 - the **time lag** between first biopsy and diagnosis was an **average of 57 days**.
- Complication rates for those undergoing multiple biopsy procedures was not substantially different than those undergoing a single procedure.

1. Zhang Y, Shi L, Simoff MJ, J Wagner O, Lavin J. Biopsy frequency and complications among lung cancer patients in the United States. *Lung Cancer Manag.* 2020;9(4):LMT40. Published 2020 Aug 17. doi:10.2217/lmt-2020-0022

Biopsy frequency and complications among lung cancer patients in the United States¹

Published study results

Study limitations

- The MarketScan claims data come mostly from large employers providing coverage for their employees and dependents. Thus, the results may not be generalizable to the population as a whole.
- The analytic files are based on payors who submit claims data and may not be representative of certain regions or the entire country.
- A single primary diagnosis of lung cancer was used as evidence of lung cancer and did not have a confirmed pathological diagnosis of cancer as no chart extraction was used for this evaluation or for the records included in the analysis.
- There are also limitations when defining an episode of care for analysis. The analysis focused on a 12-month episode of care; therefore, the biopsy procedure performed could have been for a re-occurrence of disease, thus affecting the purpose of the biopsy, especially in a patient with suspected late-stage disease.

1. Zhang Y, Shi L, Simoff MJ, J Wagner O, Lavin J. Biopsy frequency and complications among lung cancer patients in the United States. *Lung Cancer Manag.* 2020;9(4):LMT40. Published 2020 Aug 17. doi:10.2217/lmt-2020-0022

Important safety information

Important Safety Information

Risk associated with bronchoscopy through an endotracheal tube and under general anesthesia are infrequent and typically minor and may include but are not limited to: sore throat, hoarseness, respiratory complications including dyspnea or hypoxemia, airway injury, bronchospasm, laryngospasm, fever, hemoptysis, chest or lung infection including pneumonia, lung abscess or an adverse reaction to anesthesia.

Although rare, the following complications may also occur: bleeding, pneumothorax (collapsed lung), cardiac related complications, respiratory failure, air embolism, or death.

As with other medical procedures, there may be additional risks associated with the use of general anesthesia and/or endotracheal intubation which are not listed above; you should consult a health care professional regarding these and other potential risks.

© 2021 Intuitive Surgical, Inc. All rights reserved. Product and brand names/logos are trademarks or registered trademarks of Intuitive Surgical or their respective owner. See www.intuitive.com/trademarks.

INTUITIVE

intuitive.com