

## **The role of fluorodeoxyglucose (FDG) positron emission tomography (PET)/computed tomography (CT) versus diagnostic CT in surgical management of patients (pts) with lung cancer according to the 7th TNM classification**

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**Authors:** A. Panunzio<sup>1</sup>, L. Evangelista<sup>1</sup>, R. Polverosi<sup>2</sup>, P. C. Muzzio<sup>1</sup>, F. Pommeri<sup>1</sup>; <sup>1</sup>Padua/IT, <sup>2</sup>Venice/IT  
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## Purpose

In accordance with the new classification, stages from IA to IIIA are considered surgically resectable with a possible role for neoadjuvant or adjuvant chemotherapy and radiotherapy. In pts at stage IIIB-IV of disease, surgical resection is considered impracticable, and chemotherapy-radiation therapy becomes the primary treatment. Actually, the initial diagnosis of lung cancer is often made on a chest radiograph or CT examination, while PET/CT with FDG is able to detect the lymph node and distant involvement of disease. Therefore, based on these concepts, we aimed to study the comparison between the role of FDG PET/CT vs. diagnostic CT in order to evaluate their impact on surgical management.

## Methods and Materials

We retrospectively reviewed both FDG PET/CT and CT scans of 67 pts (44 men and 23 women; 69±9years) with lung cancer. The images were re-viewed by a radiologist and a nuclear medicine physician. Based on their findings, the sites of primary lung lesions, lymph nodes and metastases were tabulated and the final staging was computed according to the new classification. Furthermore, the hospital charts of each patients were considered for assessing the type of treatment approaches. A comparison across diagnostic and metabolic imaging was performed and the relationship with the surgical management was evaluated.

## Results

Based on CT findings, 19 pts were at stage I; 8 pts at stage II; 13 pts at stage IIIA; 7 pts at stage IIIB and 20 pts at stage IV. No concordance between imaging modalities was reported in 30 pts, particularly based on PET/CT 15 pts were downstaged and 15 pts upstaged. Twenty-nine out of 67 pts underwent surgery. According to PET/CT, 3 patients underwent surgery by a change in staging from IIIB-IV to I and IIIA. On the contrary, no surgical management was adopted in 6 pts due to upstaging (from I - IIIA to IV). Therefore, PET/CT changed the surgical management in 9/67 pts.

## Conclusion

The revised 7th edition of the TNM staging system for lung cancer, based on a large international database, is a significant advance in the staging of lung cancer. The

development of PET and PET/CT over the past two decades has changed the clinical staging of lung cancer. According to the new TNM classification and our retrospective study, PET/CT contributes to determine the surgical treatment in about 15% of lung cancer pts, thus improving preoperative staging and reducing the number of needless surgery.

## References

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## Personal Information