

#P1.200: Discrepancies in Regional Multidisciplinary Tumor Board Decisions in Lung Cancer: Comparative Outcome Analyses From Denmark and Norway

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INTRODUCTION

Multidisciplinary tumor board (MDT) meetings are central to lung cancer management, yet variability in clinical decision-making persist. This observational study evaluates the concordance between MDT meetings and a general artificial intelligence (AI) tool, focusing on diagnosis, staging and treatment recommendations. Additionally, we explore how MDTs assess potentially curable patients with localized and locally advanced (stage I-III) non-small cell lung cancer (NSCLC) and identify factors associated with discordant MDT decisions.

METHODS

Lung cancer MDTs from Denmark (n=4) and Norway (n=7) were invited to participate. All included MDTs consisted of specialists in pulmonology, radiology, nuclear medicine, oncology, thoracic surgery, and pathology. Participating MDTs received 25 standardized fictitious case reports of patients with potentially curable stage I-III NSCLC, including anonymized CT and PET images, for discussion at their routine MDT meetings. In parallel, we used a general AI system (Perplexity) to perform staging and provide treatment recommendations for the same cases. Concordance in staging and treatment decisions was assessed, and cases with disagreement were analyzed to identify contributing factors.

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ChatGPT was utilized in sorting and systemizing the table. It was also used to check the language for errors.

DISCUSSION AND CONCLUSION

Substantial variation in MDT recommendation was observed, particularly in complex cases involving synchronous malignancies and discordant mediastinal staging. These findings support the importance of site specific expertise in MDT discussions for such cases.

Divergent interpretations of imaging versus invasive staging highlight ongoing clinical uncertainty in stage III NSCLC. While general purpose AI may support information retrieval and case structuring, it currently lacks the clinical nuance required to replace MDT-based decision-making in lung cancer care.

RESULTS

All Danish university hospitals and four of seven Norwegian regional MDTs participated in the study. Variability in TNM staging and treatment recommendations was observed across MDTs (Table). Both MDTs and AI demonstrated challenges in cases involving multifocal disease and syncronous primary tumors. In one case, the AI assigned an ECOG performance status (PS) 3 and recommended palliative treatment, whereas the MDTs assessed the patient as ECOG PS 2 and recommended curative-intent treatment.

Discrepancies in MDT decisions were most frequently associated with mediastinal finding despite prior PET and EBUS-TBNA work-up, synchronous malignancies in other organs, and multiple lung lesions. In contrast, advanced age (>80 years), impaired lung function and comorbidity did not consistently preclude curative-intent treatment recommendations.

Table Disagreement on TNM stage or recommended treatment

Proposed TNM stage	Reason for disagreement	AI treatment proposal	MDT treatment proposal
I or IVA	Synchronous or multifocal lung cancer	EGFR-inhibitor or observe	4/8 (50%) surgery
IIB or IIIA or IVa	Pleural effusion; multiple PET-avid lymph nodes also in the cardiophrenic angle. EBUS-TBNA negative	Surgery	6/8 (75%) surgery, 2/8 (25%) further investigations
IIIA or B	Multiple PET-avid lymph nodes, while malignant cells only contralateral station 4L	CRT	5/8 (63%) CRT, 3/8 (37%) immunotherapy
IIIA or B	N0 at EBUS, but station 6 highly suspicious on PET-CT	CRT	5/8 (63%) CRT, 3/8 (37%) surgery
IIIA or IVa	One synchronous or metastase contralateral	Surgery	5/8 (63%) surgery + observe contralateral. 1 (13 %) surgery both, 2 (25%) more work-up more or oncological treatment
IB or IIA. AI: IIA	Invasion of mucosa main bronchus, hilar lymph nodes	CRT	4 (50%) surgery. 1 (12,5%) CRT. 1 (12,5%) SBRT, 1 (12,5%) further investigations, 1 (12,5%) no answer

CRT: chemoradiation therapy; EBUS-TBNA: Endobronchial ultrasound-guided transbronchial needle aspiration; ECOG PS: Easter cooperative oncology group performance status
SBRT: stereotactic body radiotherapy