

European Pilot Testing of a Novel Digital MDT Platform in Lung Cancer Using Simulated Patients (ROSETTA Part III)

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Objective

- The objective of this study was to test a digital MDT platform with fictive patient cases to evaluate the user experience and the ability of the platform to estimate the overall level of agreement in treatment selection to capture insights into clinical decisions with the goal of further implementation of the platform for patient care.

Conclusions

- Despite assessing the same cases, treatment decisions varied between MDTs across diverse settings and countries.
- MDT treatment decisions were primarily driven by performance status and clinical judgement, with variability reflecting real-world complexity.
- All MDTs were able to use a digital platform to make decisions and reported high levels of satisfaction and confidence in the ability of the platform to increase meeting efficiency.
- Assessment of fictive cases may help increase inter-MDT concordance in decision-making and alignment with guidelines.

Plain language summary



Why did we perform this research?

- MDT (multidisciplinary team) meetings, where a team of healthcare experts (e.g., medical oncologist, thoracic surgeon etc.) discuss patient cases, are the gold standard in cancer care, yet face challenges including data gaps, increasing patient volumes, and complex pathways.¹⁻⁴
- In response to the challenges faced by MDTs, **AstraZeneca** established research collaboration with **Axana** to support the development of a digital MDT platform for clinical practice to increase the efficiency of MDT meetings, and with **Amaris** to assess its impact and to understand patient factors influencing MDT treatment decisions.



How did we perform this research?

- The study involved ten European lung cancer MDTs who used the Axana digital platform to review 119 fictive patient cases.
- Descriptive statistics were generated to describe the overall population and to identify treatment drivers, and a statistical model was performed to estimate the effect of each characteristic on treatment selection while accounting for all the others at the same time.
- Guided interviews and online surveys were conducted to assess the platform's value in facilitating and supporting virtual MDTs, as well as user satisfaction and experience.



What were the findings of this research?

- Across 119 fictive lung cancer cases reviewed by ten European MDTs, ECOG PS was the most consistent driver of treatment selection across all disease settings. Drivers varied by context and included age, molecular profile, possibility of removing tumour by surgery (resectability), and degree of lymph node involvement.
- In metastatic EGFR-mutated NSCLC, fitter and younger patients were more frequently assigned combination therapy. In stage III NSCLC, treatments around the time of surgery (perioperative) and resectability decisions were strongly influenced by biomarker status and surgical feasibility.
- In SCLC, performance status was the only statistically robust determinant of treatment selection, with treatment patterns differing by disease stage and evidence of off-label immunotherapy use.
- Inter-MDT agreement was slight to fair across all cases, reflecting variability in clinical practice, however, concordance was notably better in certain individual cases.



What are the implications of this research?

The Axana MDT platform demonstrated high feasibility and acceptability, with clinicians reporting good usability, efficiency, and support for MDT collaboration.



Where can I access more information?

To find out more about ROSETTA-LUNG, please contact Gregory Hodgson (gregory.hodgson@astrazeneca.com).

Introduction

- Multidisciplinary teams (MDTs) are central to lung cancer care, but they impose several data sharing and communication challenges to full utilization, that may be addressed by technology-based solutions.
- A digital MDT platform is a tool that centralises structured patient data and imaging, supports synchronous MDT review and enables real-time documentation of treatment decisions. It was designed to increase the efficiency of MDT discussions to maximize the number of patients reviewed.
- This study comprises Part III of ROSETTA-Lung, a global effort initiated by AZ and following the Danish Ring Trial (ROSETTA-Lung, Part I).⁵

Part I	60 fictive patients MDTs at four Danish hospital sites
Part II	60 fictive patients Virtual educational platform for MDTs, Global
Part III	119 fictive patients Face-to-face MDTs, supported by the Axana MDT-platform at ten different locations in Europe
Part IV	Lung cancer patients reviewed by six UK MDTs Virtual or face-to-face MDTs, supported by the Axana MDT-platform

Methods

MDT selection

10 MDTs from UK, Denmark, Netherlands, and Ireland were selected

Patients simulation

119 simulated patient cases in four groups were created by experts in live meetings held in 2025 to investigate key potential drivers, including age (<65 vs >70 years), represented by 52- and 74-year-old adults:

- Metastatic EGFRm patients
- Perioperative treatment selections
- Resectability decisions
- Limited and extensive stage SCLC

MDT meetings

MDTs meetings were conducted in person to collect insights into treatment decisions for simulated patient cases

Interview and survey

Semi-structured interviews were conducted with oncologists to understand their clinical rationale. Participants also completed an online survey to assess their experience with the platform.

Analysis

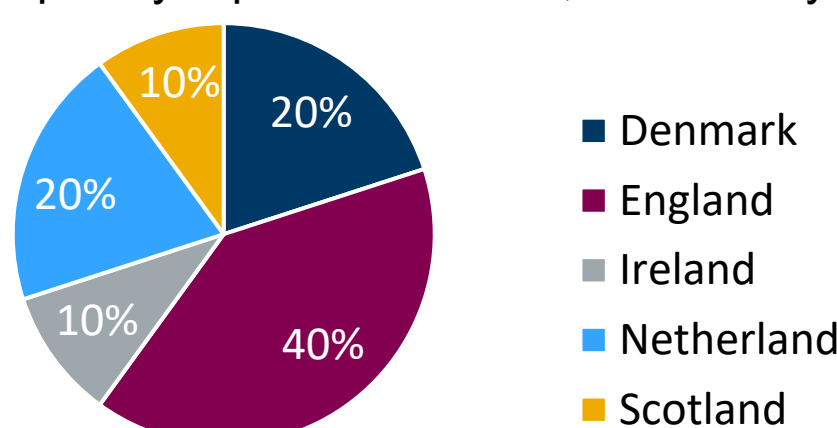
Quantitative (descriptive statistics and multinomial regression) and qualitative (thematic analysis) analyses were used to identify the key drivers in treatment decisions

Results and interpretation

MDT characteristics

- MDTs included between three to five clinicians of varying specialties, including at least one oncologists and three different specialties.
- 13 oncologists across ten MDTs were interviewed to understand treatment decision-making more specifically for the four different patient groups (Figure 2).
- 35 clinicians across ten MDTs participated in the web survey to understand their experience and satisfaction with MDT platform.
- Among the 35 participating clinicians, respiratory physician/ pulmonologist specialised in Oncology (n=10) and surgeons (n=10) were the most frequently represented roles, followed by medical oncologist (n=8)

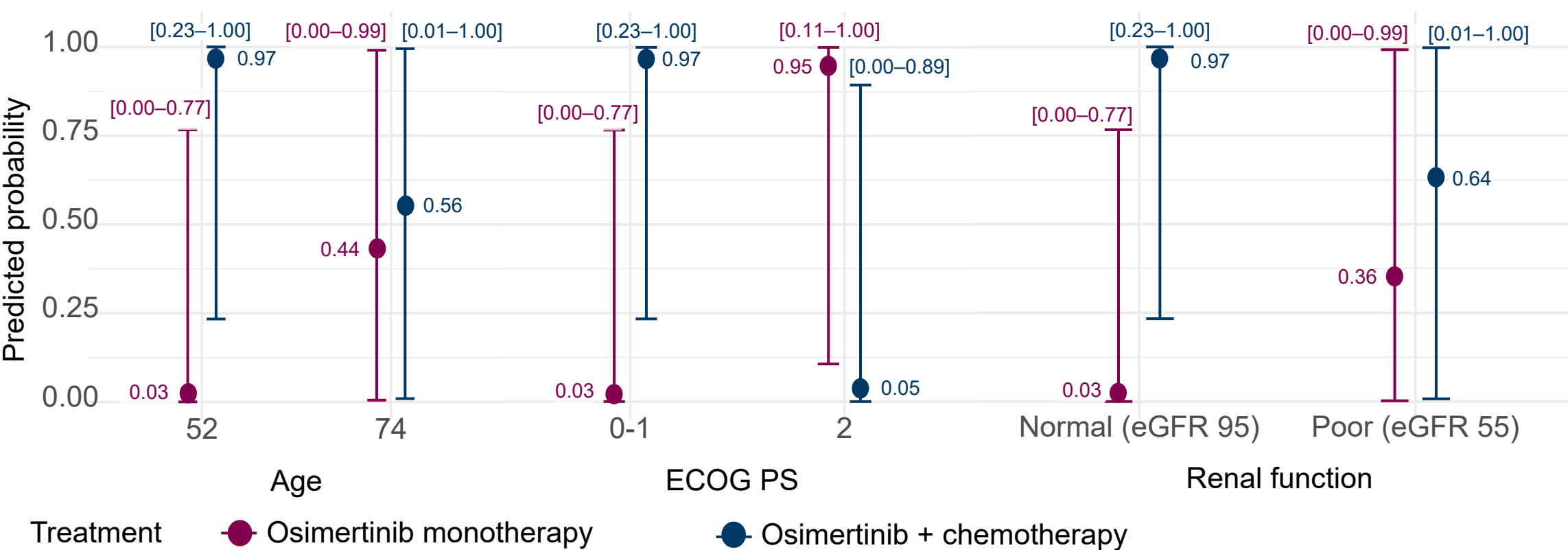
Figure 2. Location of MDTs



GROUP 1 – Drivers for treatment selection in metastatic EGFRm patients

- 44 fictive patient cases were created and reviewed by MDT, investigating 7 potential drivers including age (52 vs 74 years old), ECOG PS (0-1 vs 2), tumour burden (≤ 3 vs >3 organs), brain metastasis (0 vs 1-3 vs ≥ 4 metastases), EGFR co-mutations (TP53 vs G719x), EGFR sub-types (exon 19 deletion vs exon 21 L858R substitution), and renal function (normal [eGFR 95] vs poor [eGFR 55]).
- Treatment options assigned to patients were osimertinib monotherapy (43.9%), osimertinib + chemotherapy (52.0%), and other treatment (4.1%).

Figure 3. Multivariate model – predicted probability per age (52 vs 74 years old), ECOG PS (0-1 vs 2), and renal function (normal [eGFR 95] vs poor [eGFR 55])



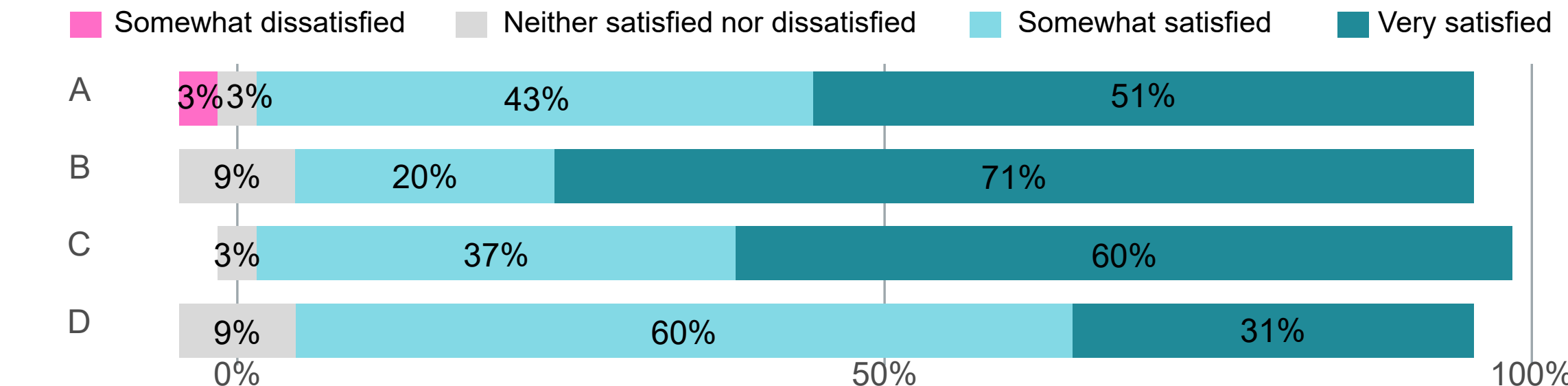
- Consistent with these quantitative findings, qualitative interviews highlighted **ECOG PS** as the most influential factor guiding oncologists' treatment decisions.
- In addition, oncologists most frequently refer to **patient fitness**, **presence of brain metastases**, **mutation status**, and **patient preference** as key considerations.

» Combination therapy (osimertinib + CT) was generally preferred in fitter patients (PS 0-1, age 52, eGFR 95) whereas poor PS (PS 2) was the strongest driver opting for monotherapy.

Survey: User experience and satisfaction with the Axana MDT platform

- Overall satisfaction with the Axana MDT platform was high with 57% of respondents reporting being very satisfied, 37% somewhat satisfied and 6% neither satisfied nor dissatisfied on a 5-point Likert scale.
- Satisfaction with the platform was high with 94% of physicians somewhat to very satisfied with the interface and 88% reporting that they were somewhat to very satisfied with the platform's ability to make MDT meetings more efficient.

Figure 4. Clinical satisfaction across four aspects of the MDT platform (n=35)



Scale A: Completeness of patient data to support decision-making
Scale B: Time to review patient and report treatment decision on the MDT-platform
Scale C: Communication and collaboration with MDT members through the MDT-platform
Scale D: The overall experience of using the MDT platform to support treatment decision-making

GROUP 2 - Drivers for perioperative treatment selection in Stage III NSCLC patients

- 27 fictive patient cases were created and reviewed by MDT, investigating 5 potential drivers including age (52 vs 74 years old), ECOG PS (0-1 vs 2), EGFR mutations (positive vs negative), PD-L1 expression (<1% vs 1-49% vs >49%), and pathological response (MPR vs pCR vs no MPR/pCR)
- Analyses were stratified based on treatment options: pre-operative options (CT + IO as neoadjuvant, no neoadjuvant), post-operative options (adjuvant such as CT + IO, TKI + CT, CT only, IO only, TKI only, no adjuvant), or perioperative setting (neoadjuvant only, adjuvant only, perioperative (neoadjuvant and adjuvant), no neoadjuvant or adjuvant, no surgery).

Figure 5. Multivariate model – predicted probability per ECOG PS (0-1 vs 2) and EGFR mutation (negative vs positive) for pre-operative setting

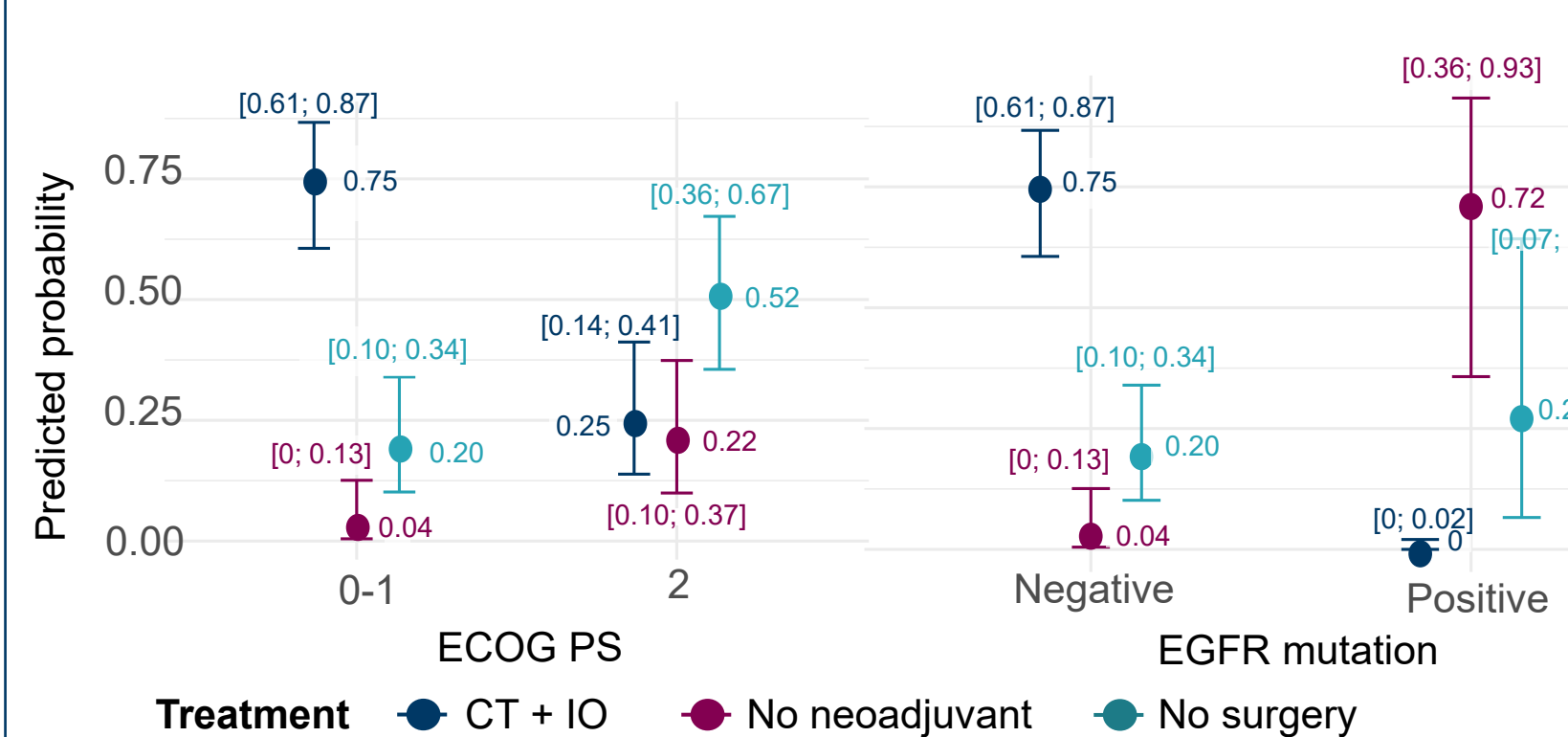
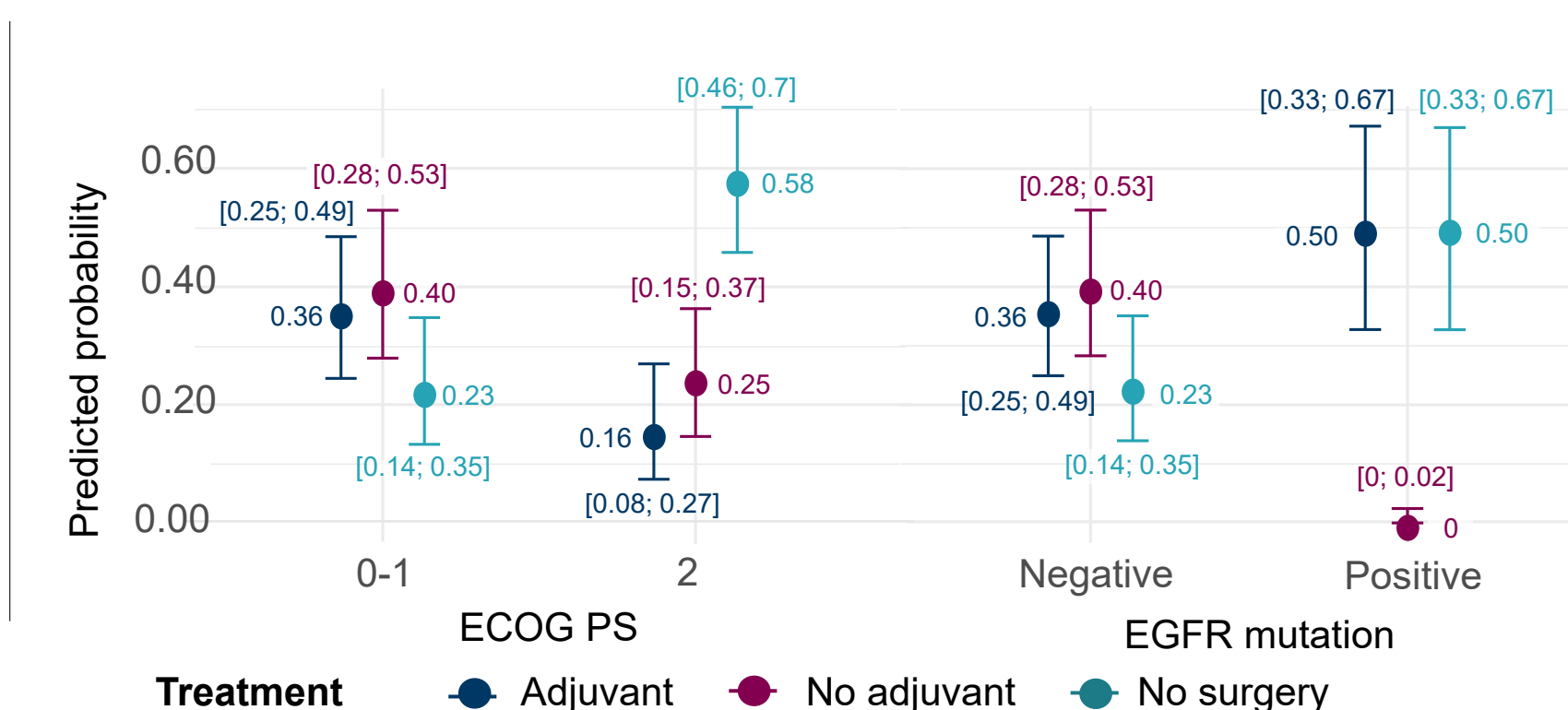


Figure 6. Multivariate model – predicted probability per ECOG PS (0-1 vs 2) and EGFR mutation (negative vs positive) for post-operative setting



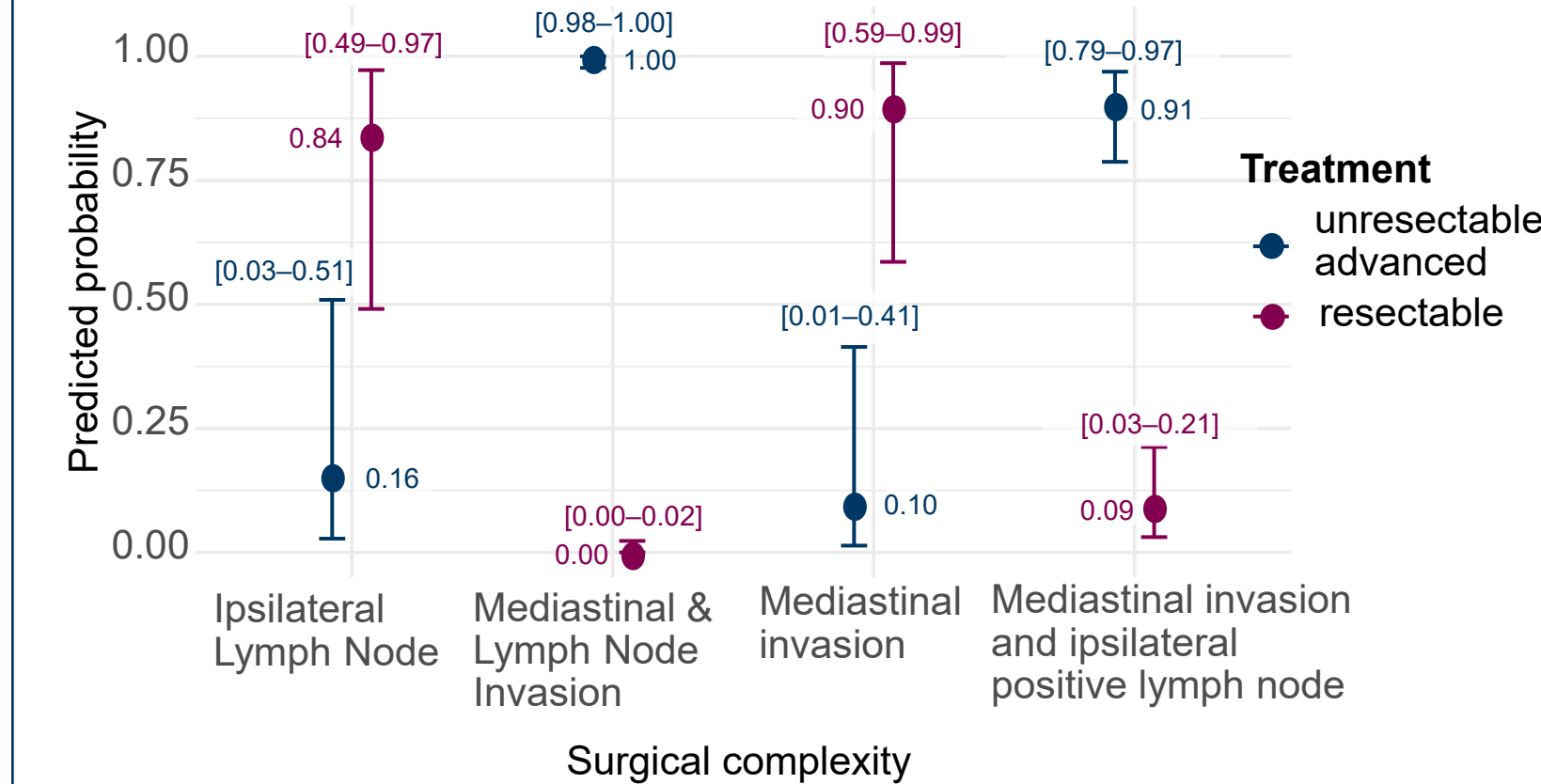
- For treatment choice, oncologists most frequently emphasized **resectability**, **PS**, **fitness**, **TNM stage** and **PD-L1 status** in qualitative interviews. Similarly, treatment sequence was primarily influenced by **molecular profile (PD-L1 status)**, **PS**, **comorbidities**, **resectability**. Across both treatment choice and sequence, age was not described as a primary driver but was consistently considered as an important contextual factor, often in conjunction with fitness and PS.

» Decisions on resectability varied between sites, with some MDTs ruling out surgery in cases that others deemed suitable for surgery.

GROUP 3 - Factors that determine resectability in Stage III NSCLC patients

- 24 fictive patient cases were created and reviewed by MDT, investigating 4 potential drivers including age (52 vs 74 years old), ECOG PS (0-1 vs 2), degree of lymph node involvement (mediastinal invasion, mediastinal invasion and lymph node invasion, ipsilateral lymph node, mediastinal invasion and ipsilateral positive lymph node), and PD-L1 expression (<1%, 1-49%, >49%).
- Four resectability categories were assigned: advanced (10.0%), resectable (30.8%), unresectable (55.8%), and undetermined/borderline (3.4%). Most patients were determined to be unresectable, with patients having both mediastinal and lymph node involvement the most likely not to receive surgery.

Figure 7. Multivariate model – predicted probability per degree of lymph node involvement



- Oncologists consistently identified **resectability**, **predominantly informed by the surgeon's opinion**, as the most influential factor in determining treatment decisions. Resectability assessments were primarily driven by surgeon-led review of CT and PET imaging, including **tumour location**, **size**, **nodal involvement**, and **anatomical feasibility**, as well as **comprehensive staging** using multiple diagnostic modalities within the MDT meeting.

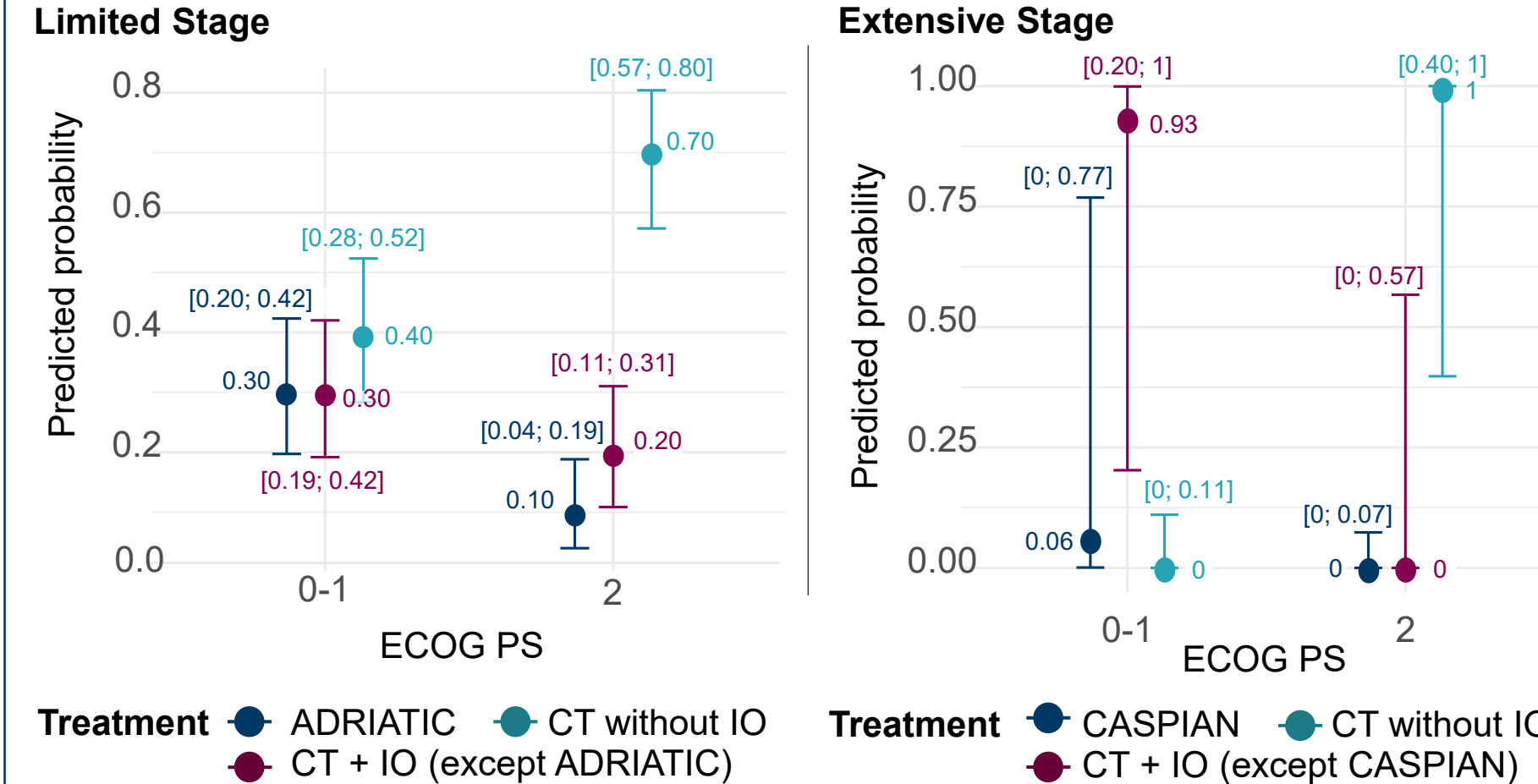
- In addition, oncologists frequently cited **PS**, **fitness**, **disease stage**, **comorbidities**, and **tumour location** as key considerations, reflecting the broader concept of surgical complexity encountered in clinical practice.

» Resectability in stage III NSCLC is determined by anatomical criteria, surgical experience, patient fitness, and multidisciplinary consensus, with guidelines serving as a contextual reference.

GROUP 4 - Drivers for treatment selection in limited and extensive stage SCLC patients

- 24 fictive patient cases were created and reviewed by MDT, investigating 5 potential drivers including age (52 vs 74 years old), ECOG PS (0-1 vs 2), tumour burden (≤ 3 vs >3 organs), brain metastasis (0 vs 1-4 vs >4 metastases), stage (limited vs extensive), and PD-L1 expression (<1%, 1-49%, >49%)
- Treatment choices differed by limited stage and extensive stage with PS the largest driver of choice.

Figure 8. Multivariate model – predicted probability per ECOG PS (0-1 vs 2) in limited (left) and extensive stage (right) SCLC patients



- Treatment options included CASPIAN (durvalumab + platinum-etoposide), ASTRUM 005 (serplulimab + platinum-etoposide), Impower 133 (atezolizumab + platinum-etoposide), ADRIATIC (durvalumab monotherapy), and carboplatin + etoposide based on ESMO guidelines. Analyses were stratified by stage.

- Consistent with the quantitative analyses, qualitative analyses highlighted **PS** as a key driver for treatment decision-making in SCLC patients, both, in limited and extensive stage.
- A few MDTs up-staged limited SCLC patients to extensive stage, contributing to discordance in treatment decisions.

» MDT staging, guidelines and reimbursement frameworks define the boundaries of care, for highly individualized MDT decision-making in SCLC patients

Abbreviations

CART, Classification and Regression Tree; CT, Chemotherapy; ECOG, Eastern Cooperative Oncology Group; EGF, Epidermal Growth Factor Receptor; ESMO, European Society for Medical Oncology; IO, Immunotherapy; MDT, Multidisciplinary team; NSCLC, Non-small cell lung cancer; PD-L1, Programmed Cell Death Ligand 1; PS, Performance status; SCLC, Small cell lung cancer; TKI, Tyrosine kinase inhibitor

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Acknowledgments

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