



EFFECTIVENESS EVALUATION OF HIGH COST DRUGS FOR ADVANCED NON-SMALL-CELL LUNG CANCER: REAL WORLD EVIDENCE, COMPLIANCE WITH CLINICAL PRACTICE GUIDELINES AND ECONOMIC EVALUATION

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BACKGROUND AND IMPORTANCE

Lung cancer has a poor prognosis and is the most common cause of cancer death. In Italy, lung cancer is the third most common cancer. Treatment decisions are based on the histology and molecular characteristics of the tumour. Treatment options for non-small-cell lung cancer (NSCLC) are targeted therapies (tyrosine kinase inhibitors (TKIs)), immunotherapy or chemotherapy.

AIM AND OBJECTIVES

To analyse drug effectiveness for advanced NSCLC in our hospital, to assess compliance with clinical practice guidelines and to perform an economic evaluation.

MATERIAL AND METHODS

We identified all patients with advanced NSCLC treated with high cost drugs (pemetrexed, erlotinib, gefitinib, afatinib, osimertinib, crizotinib, pembrolizumab and nivolumab) from 1 May 2016 to 30 April 2018. Patients were stratified by age, gender, therapy, ECOG (Eastern Cooperative Oncology Group) performance status (PS) and type of cancer treatment (targeted therapy, immunotherapy or the historical standard of care, pemetrexed). We assessed progression free survival (PFS) and overall survival (OS) with the Kaplan–Meier method. We assessed compliance with Italian clinical practice guidelines and we analysed drug costs.

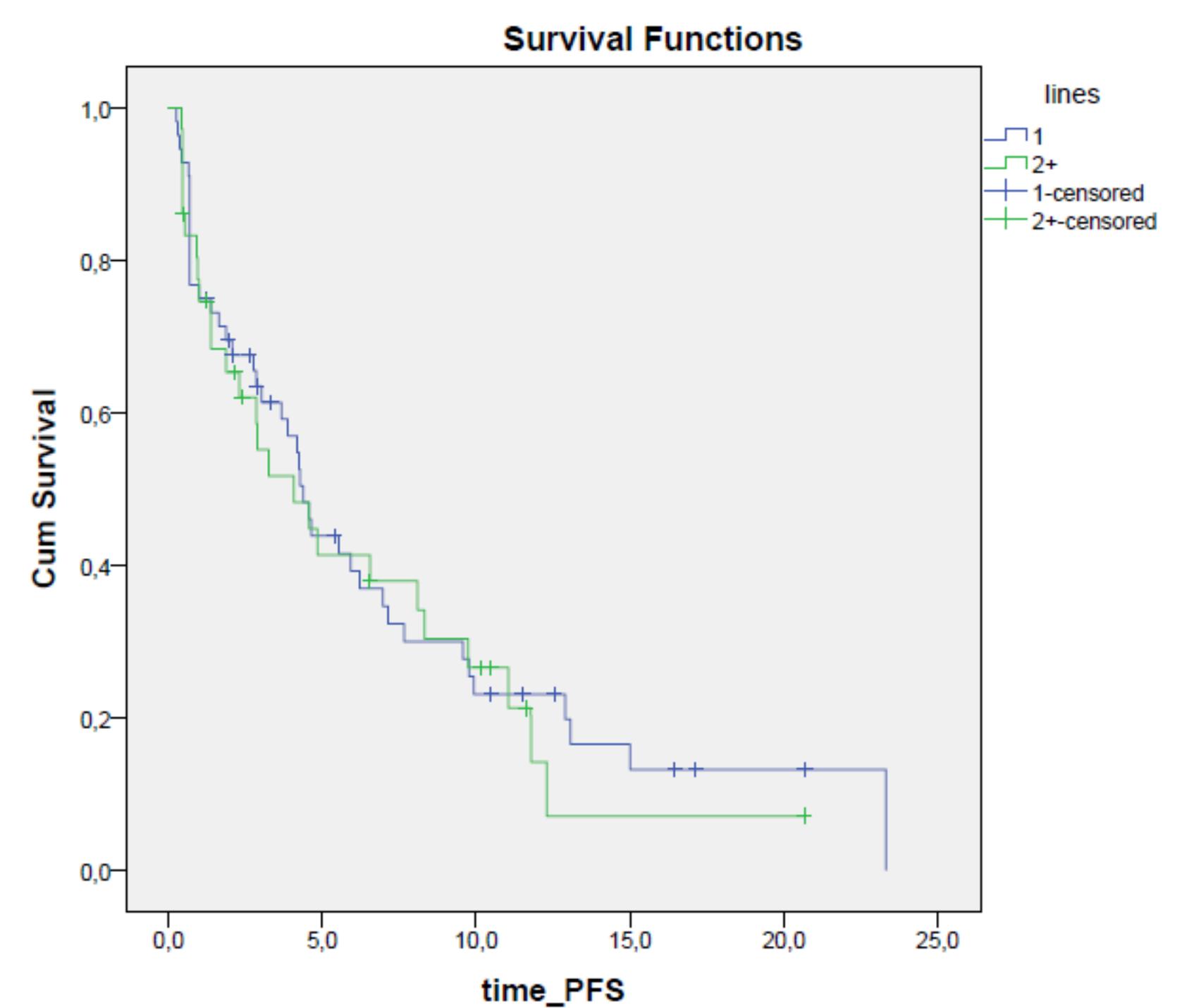
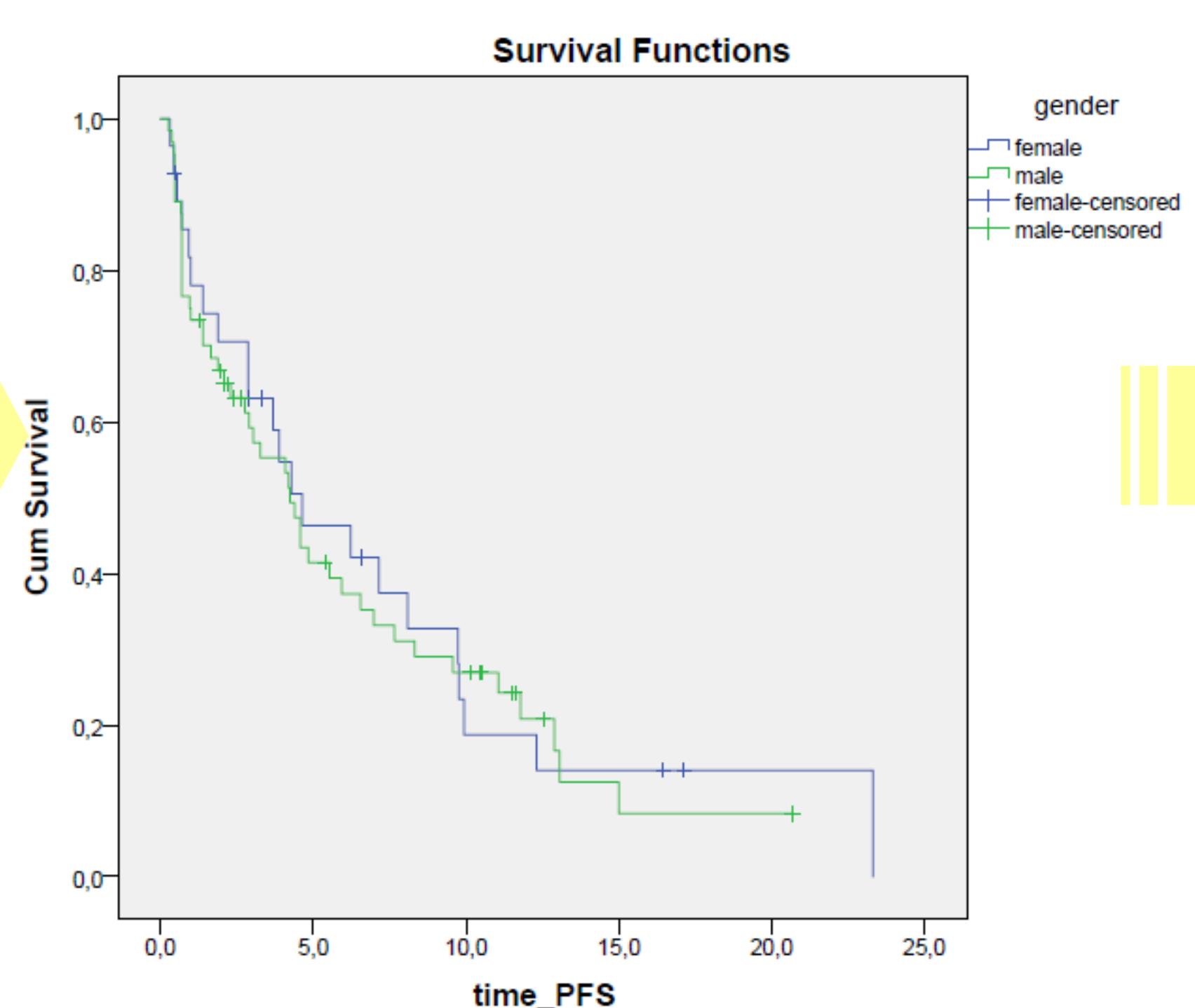
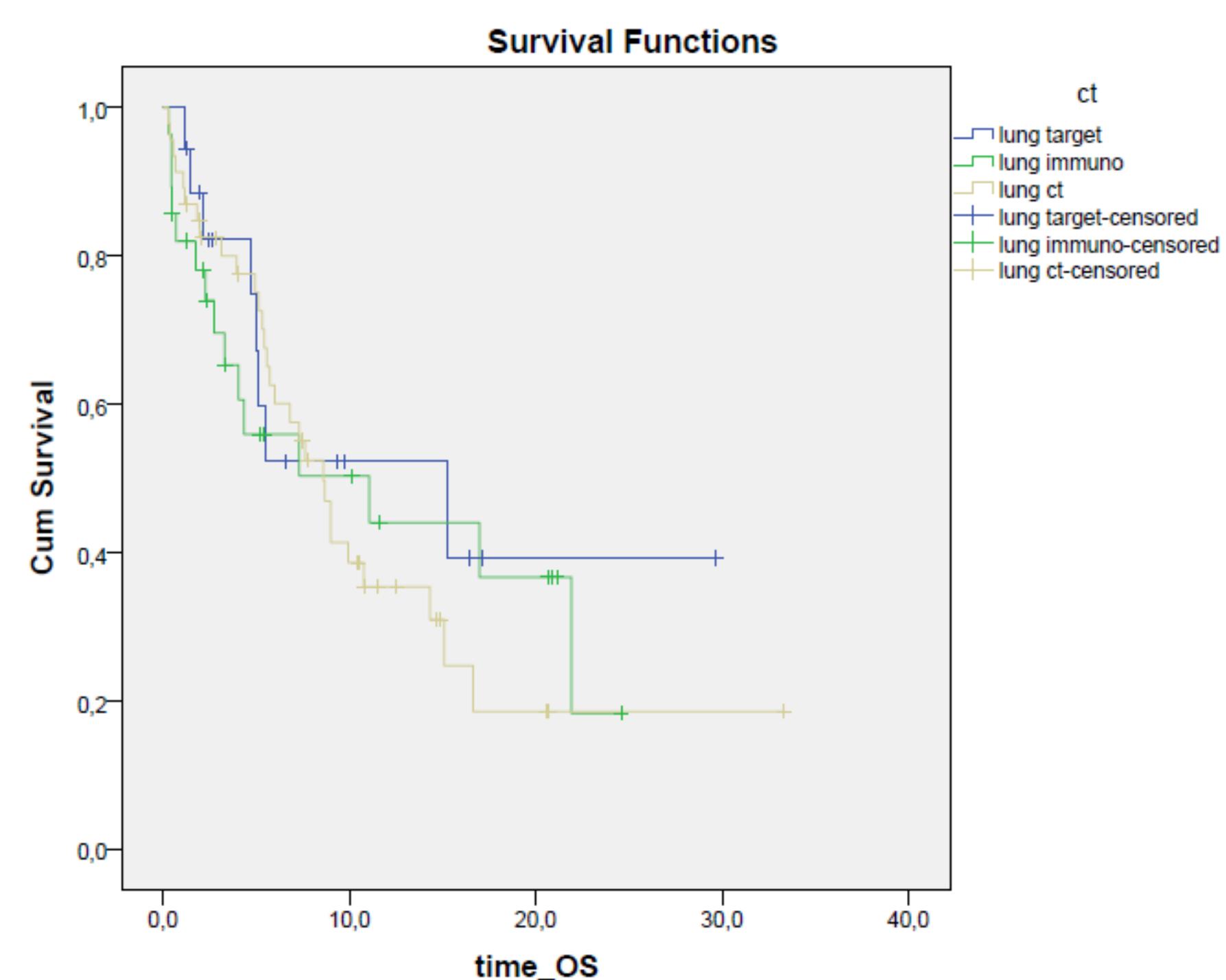
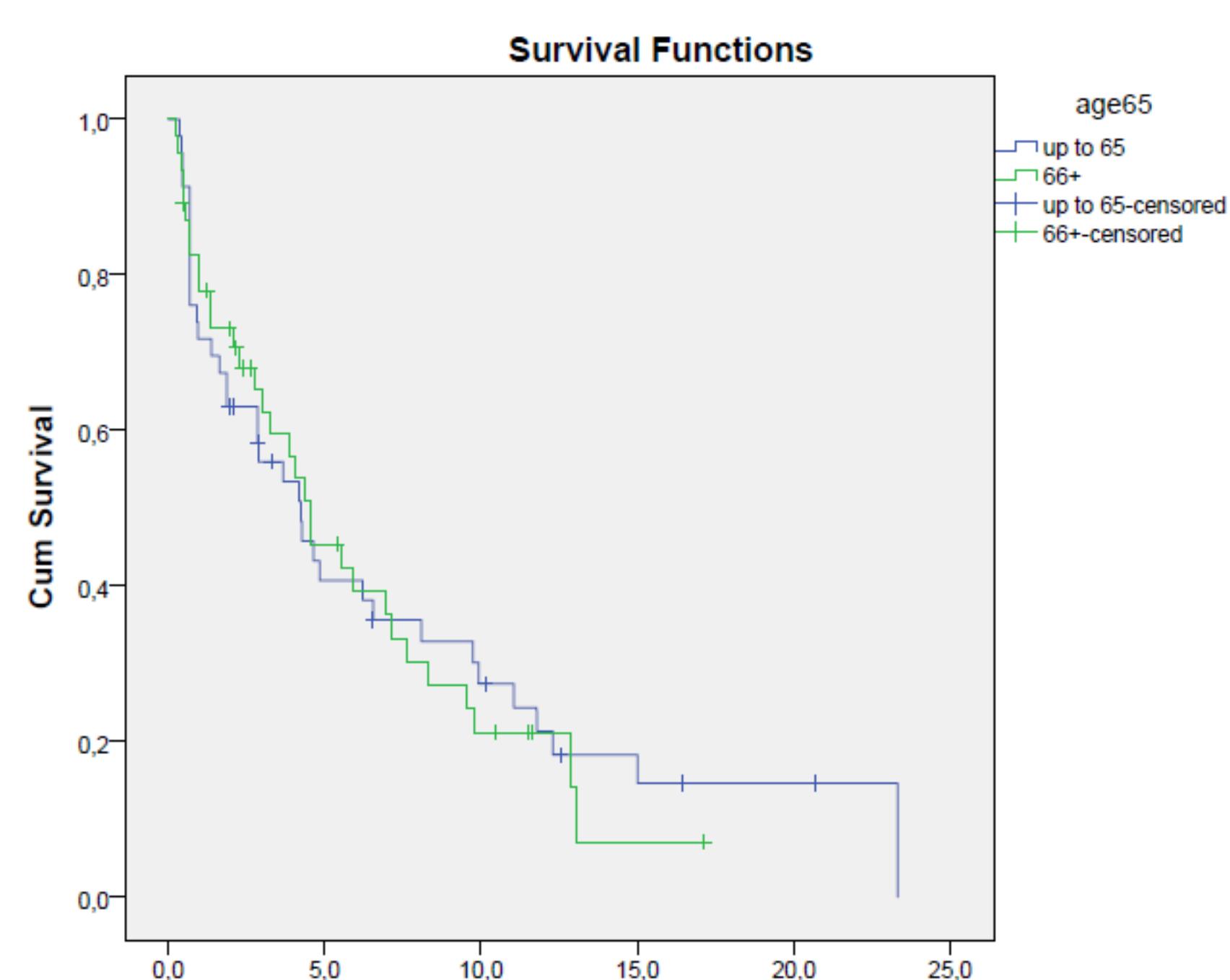
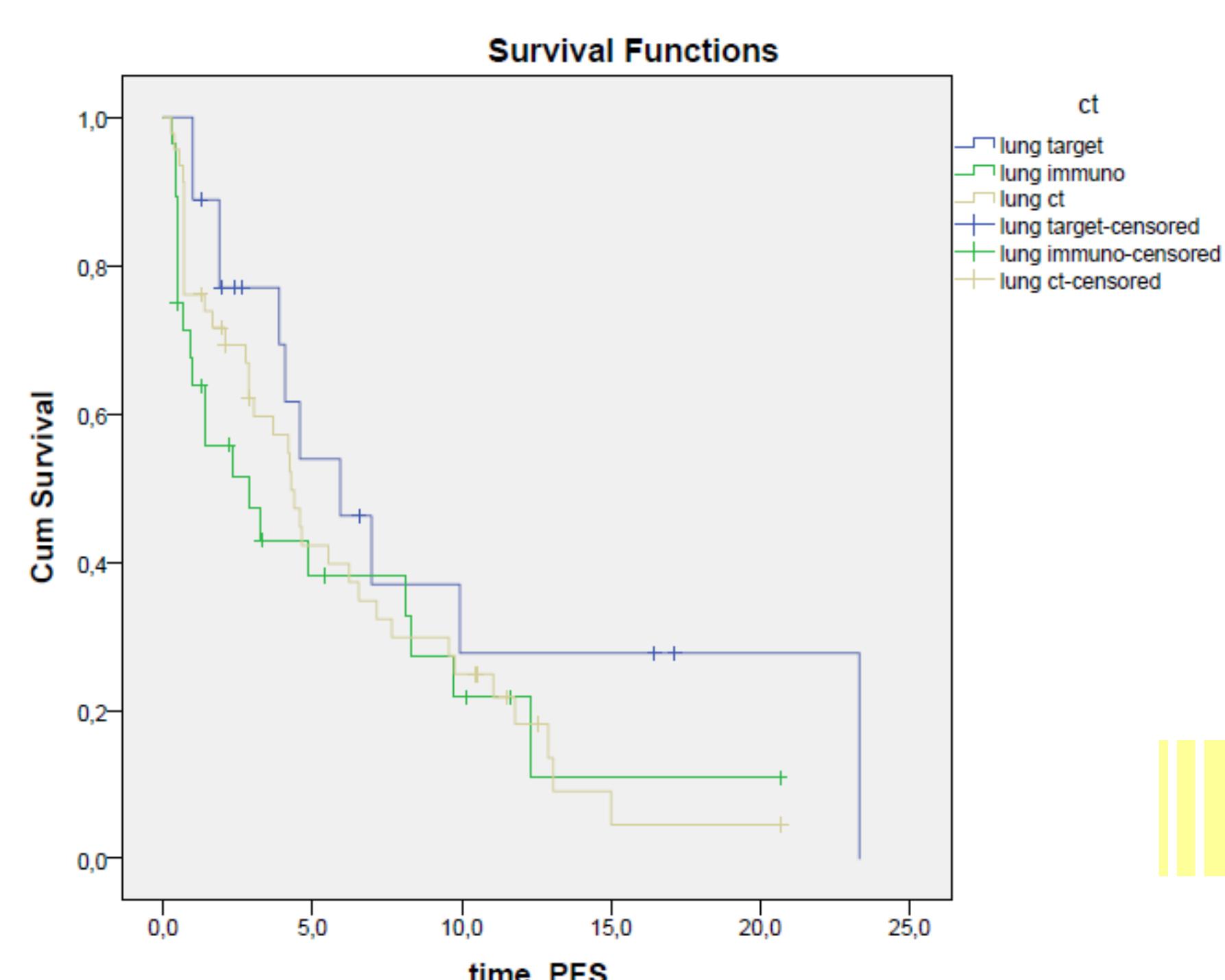
RESULTS

We found 92 cases of NSCLC; 70% were men and mean age was 65 years.

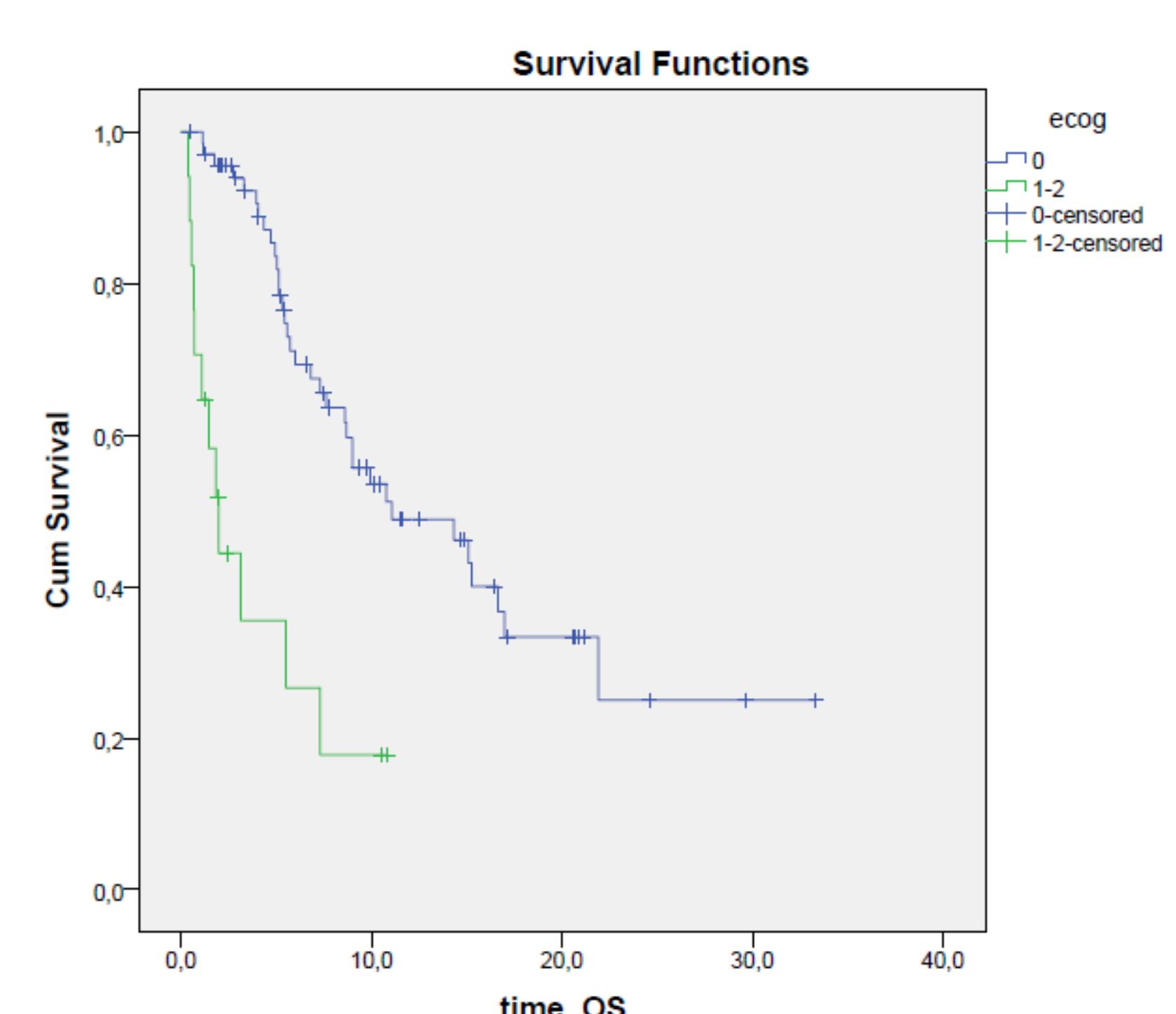
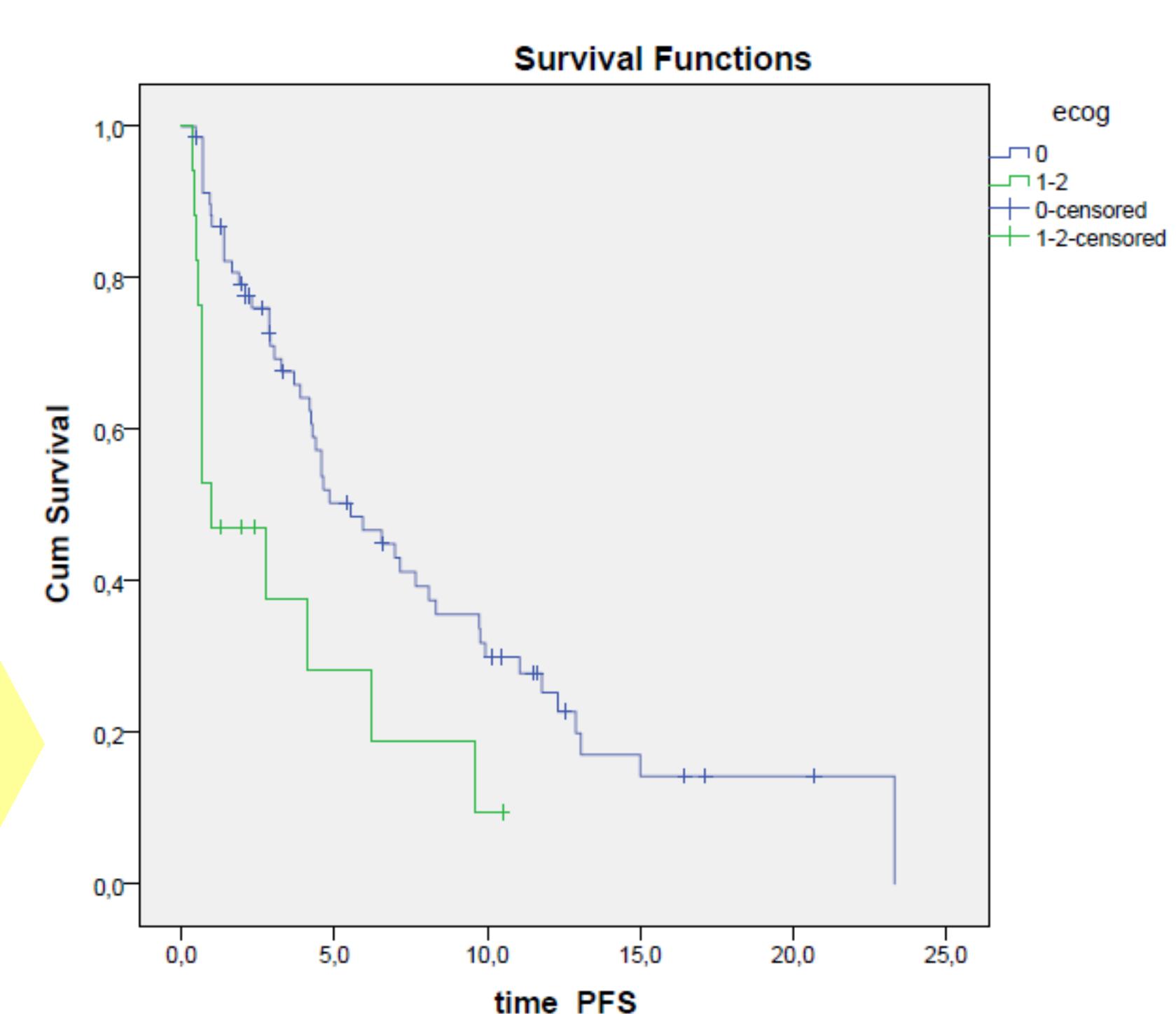
We found that 50% were treated with pemetrexed, 30% with immunotherapy and 20% with targeted therapy; 61% were firstline treatments.

Median PFS was 4.3 months and median OS was 8.6 months.

Targeted therapy was most likely to improve PFS (5.9 months), followed by pemetrexed (4.3 months) and immunotherapy (2.9 months). Targeted therapy was similarly best for OS outcome (15.3 months), followed by immunotherapy (11 months) and pemetrexed (8.6 months).



PS was an indicator of better prognosis: cases with a baseline PS score of 0 (75%) were associated with longer PFS (5.5 months) and OS (11 months).



After patient stratification, there was no statistically significant difference between age, gender or therapy groups.

Compliance with clinical practice guidelines was high.

Afatinib and gefitinib were the least expensive TKIs. Nivolumab was less expensive than pembrolizumab.

CONCLUSION AND RELEVANCE

TKIs for the management of NSCLC are cost effective. Afatinib is an important firstline option for EGFR mutation positive NSCLC. Gefitinib can be an effective secondline therapy. Pemetrexed can still be recommended for EGFR and ALK wild-type non-squamous advanced NSCLC. However, our analysis suggests a limited effectiveness of immunotherapy.

