

# What is the optimal radiotherapy regimen for thoracic palliative radiotherapy in lung cancer ?



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## INTRODUCTION

Patients with lung cancer are often diagnosed with metastatic or locally advanced disease. Chemotherapy is the main treatment in this stage. Palliative thoracic radiotherapy (PTR) is effective for improving symptoms. Optimal schedules of PTR are not well defined. The aim of our study was to evaluate the impact of different PTR regimen on oncological outcomes.

## METHODS

We retrospectively review a cohort of 50 patients with pathologically confirmed lung cancer treated in our center between 2018 and 2020. All patients were men. Mean age was 62.4 years (43-86). Fourteen patients (28%) had cardiac or pulmonary history. Performance status was 1 in 42% of cases (n=21), 2 in 48% (n=24) and 3 in 10% (n=5). The histological type was small cell lung cancer (n=6, 12%), adenocarcinoma (n=16, 32%), squamous cell carcinoma (n=19, 38%) and other non-small lung cancer (n=9, 18%). According to TNM 8 staging, tumors were classified stage IIIA (n=8, 16%), IIIB (n=11, 22%), IIIC (n=12, 24%) and IV (n=19, 38%). Forty-two patients had previous chemotherapy. Progressive and stable diseases were observed respectively in 16 and 14 patients. All patients had 3D conformal radiation therapy. PTR was indicated for dyspnea, chest pain, superior vena cava syndrome, and hemoptysis in respectively 56%, 50%, 22% and 4% respectively. Overall survival (OS) was calculated from the end of radiotherapy (RT) to date of latter news and estimated using the Kaplan–Meier method. Differences in outcomes were tested using the Log Rank method.

## RESULTS

The most commonly prescribed regimen was short course RT (84 %), either 20 Gy in 5 fractions (n=25), or 30 Gy in 10 fractions (n=17). Single fraction (8-6 Gy in one fraction) was delivered in 8 patients (16%) (Table 1).

Table 1: Radiotherapy regimen

fraction	20 Gy in 5	30 Gy in 10	8-6 Gy single
n	25	17	8

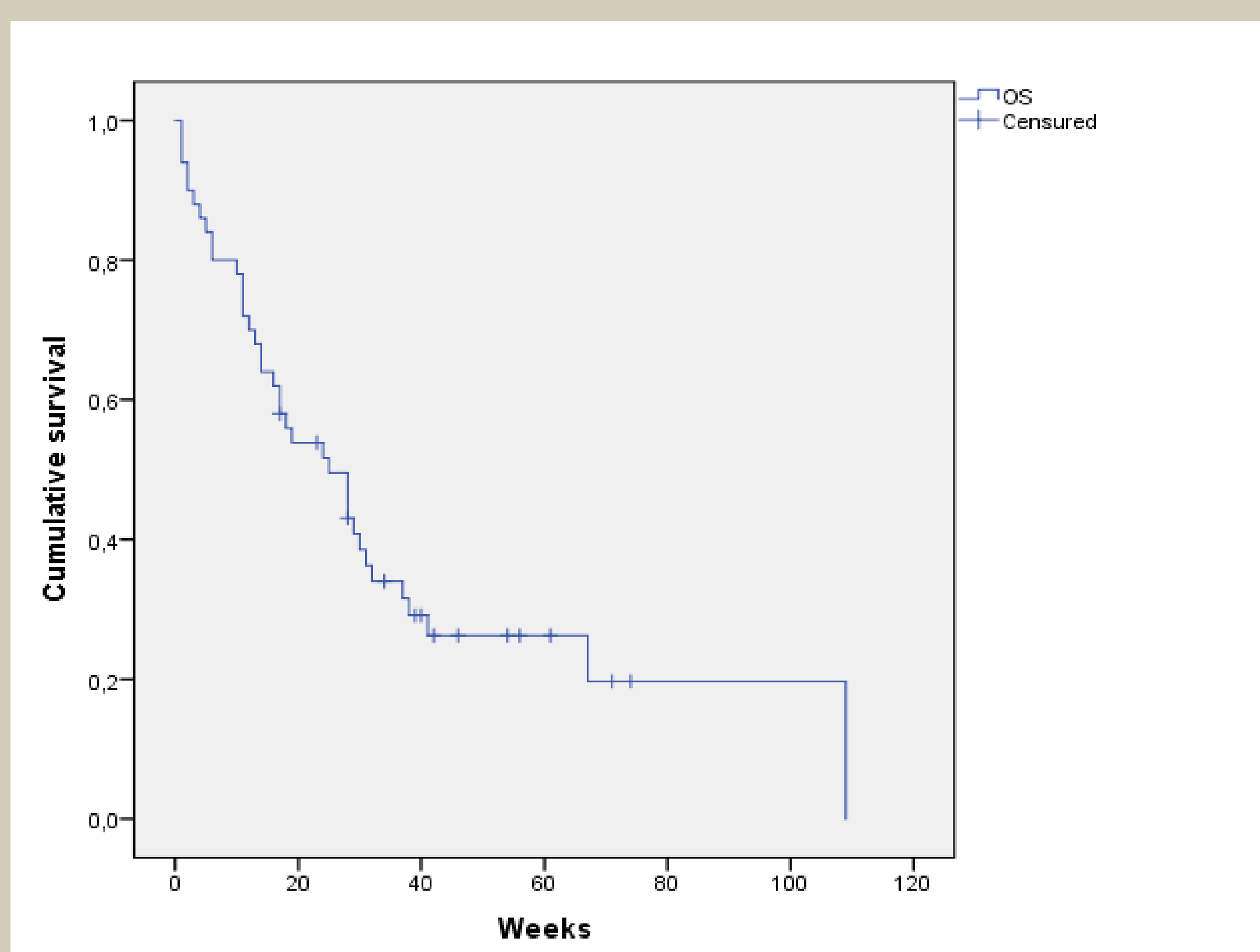


Figure 1: Overall survival

Clinical benefit was reported in 16 cases (34%). Median survival was 5 months. The 6 months and 12 months OS were 49% and 26%, respectively (Figure 1). Median survival was significantly correlated with tumor stage (56 weeks in stage III versus 39 in stage IV) (p=0.028) and fraction regimen (29 weeks in short course RT versus 3 in single fraction) (p<10<sup>-3</sup>) (Figure 2). There was no difference between 20Gy in 5 fractions and 30Gy in 10 fractions, median survival was respectively 42 weeks and 54 weeks, p=0.9

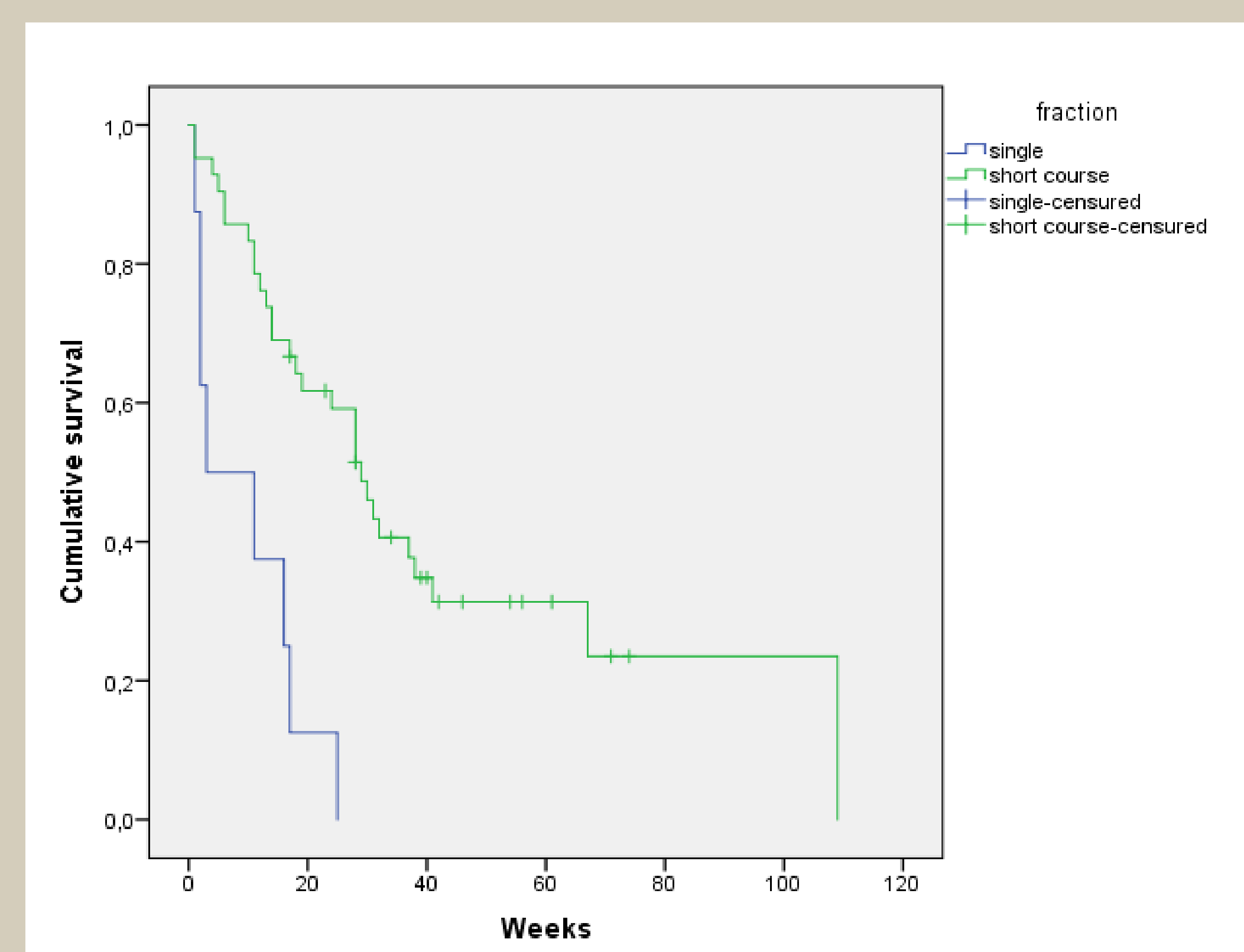


Figure 2: Overall survival according to RT regimen

## CONCLUSION

We recommend 20Gy in 5 fractions in palliative thoracic radiotherapy since it is more convenient for this frail population without compromising their oncologic outcome and also to create capacity to treat additional patients in a context of shortage of RT facilities.