

# EFFECTIVENESS OF IMMUNOTHERAPY ACCORDING TO TIME-OF-DAY INFUSION

S. Manso Anda<sup>1</sup>, M. Nígorra Caro<sup>2</sup>, R. Romero del Barco<sup>3</sup>, C. Juez Santamaría<sup>4</sup>, P.J. Siquier Homar<sup>5</sup>, L. Rodríguez Cajaraville<sup>6</sup>, F. do Pazo Oubiña<sup>1</sup>, C. Martorell Puigserver<sup>1</sup>, A. Azkarate Martínez<sup>7</sup>.

<sup>1</sup>Son Espases University Hospital, Hospital Pharmacy, Palma, Spain; <sup>2</sup>Son Llàtzer University Hospital, Hospital Pharmacy, Palma, Spain; <sup>3</sup>Mateu Orfila General Hospital, Hospital Pharmacy, Maó, Spain; <sup>4</sup>Can Misses Hospital, Hospital Pharmacy, Ibiza, Spain; <sup>5</sup>Inca District Hospital, Hospital Pharmacy, Inca, Spain; <sup>6</sup>Manacor Hospital, Hospital Pharmacy, Manacor, Spain; <sup>7</sup>Son Espases University Hospital, Medical Oncology, Palma, Spain.

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## BACKGROUND AND IMPORTANCE

Immunotherapy has become a cornerstone in the treatment of several cancers, particularly solid tumours. Recent evidence suggests that the timing of administration may impact treatment effectiveness, with improved outcomes observed when immunotherapy is administered in the morning.

## MATERIAL AND METHODS



Six hospitals

### 1L metastatic

- ◆ pembrolizumab
- ◆ nivolumab
- ◆ atezolizumab

Administrations between  
**01/01/2021**  
and  
**30/06/2025**



### Morning group

<50% afternoon infusions

### Afternoon group

≥50% afternoon infusions.

Cutoff time: 3 pm

## AIM AND OBJECTIVES

To evaluate the effectiveness of immunotherapy according to time-of-day of administration using real-world data.

Variables collected: sex, age, diagnosis, treatment indication, date of diagnosis, date and time of infusion, and date of death.

Outcome: overall survival (OS), defined as the time from immunotherapy first administration in metastatic setting to death from any cause. The cut-off date for the analysis was 01/10/2025. Survival was estimated using Kaplan–Meier curves, compared by log-rank test, and hazard ratios calculated with Cox regression (R software).

## RESULTS



8.896 administrations



1.175 patients | 66.4% male, n=780  
mean age 66 years, range 25–92



Most frequent diagnoses

- non-small-cell lung cancer (54%, n=635)
- small-cell lung cancer (12.7%, n=149)



5.539 administrations (62.3%) were given in the morning.

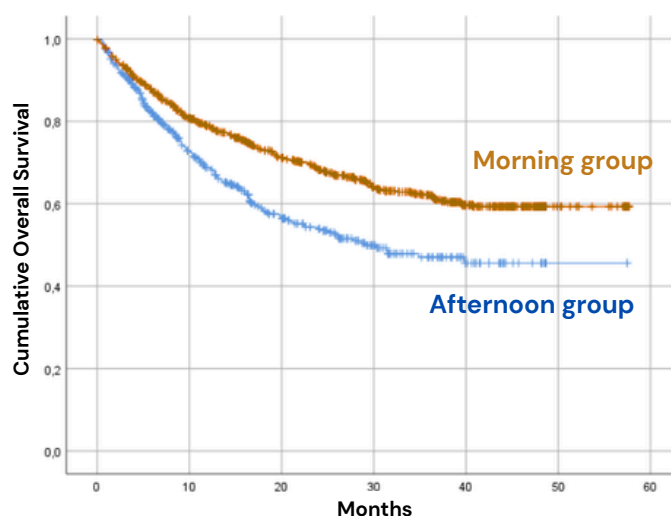


541 patients (46%) received ≥50% of doses in the afternoon.

428 deaths (36.4%) during follow-up

OS not reached in the morning group vs 28.6 months in the afternoon group

HR 0.64, 95% CI 0.53 to 0.78; log-rank p<0.0001



## CONCLUSION AND RELEVANCE

Consistent with previous reports, this review found improved overall survival in patients with predominantly morning administration of immunotherapy. Whenever feasible, scheduling immunotherapy in the morning should be considered to optimise treatment outcomes.

