

## ECONOMIC BENEFIT ANALYSIS ON LUNG CANCER CLINICAL TRIALS: MEDICATION AND MEDICAL TESTS

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### BACKGROUND AND IMPORTANCE

**Clinical Trials (CTs)** are the main tool to obtain information about safety and efficacy of new treatments in an objective, reproducible and controlled manner.

CTs can entail economic benefit when sites do not assume the costs of medication which would be given in clinical practice. However, this economic benefit is often overlooked and rarely quantified.

### AIM AND OBJECTIVE

- Estimate the economic benefit derived from trial medication due to the inclusion of patients in Lung Cancer CTs between 2017 and 2021.
- Estimate the economic benefit derived from sponsor-financed medical imaging due to the inclusion of patients in Lung Cancer CTs between 2017 and 2021.

### MATERIALS AND METHODS

An **observational retrospective study** was conducted in all patients enrolled in **lung cancer clinical trials** from 2017 to 2021 at our hospital:

- The avoided costs in medication were calculated considering the medication which would have been given to the patient in the standard of care taking into account their specific medical history.
- The avoided costs in medical tests per patient were calculated from the prices published and the total number of each test performed on each patient from their first treatment visit until the end of the treatment visit.
- The homogeneity of the two groups was analyzed using a univariate analysis by applying the chi-square test for qualitative variables and the t test or Mann-Whitney test to compare quantitative variables. A p value of <0.05 was considered statistically significant.

### RESULTS

The economic benefits generated from trial drugs in the 35 clinical trials was 2.069.278€. The results are depicted in the table below:

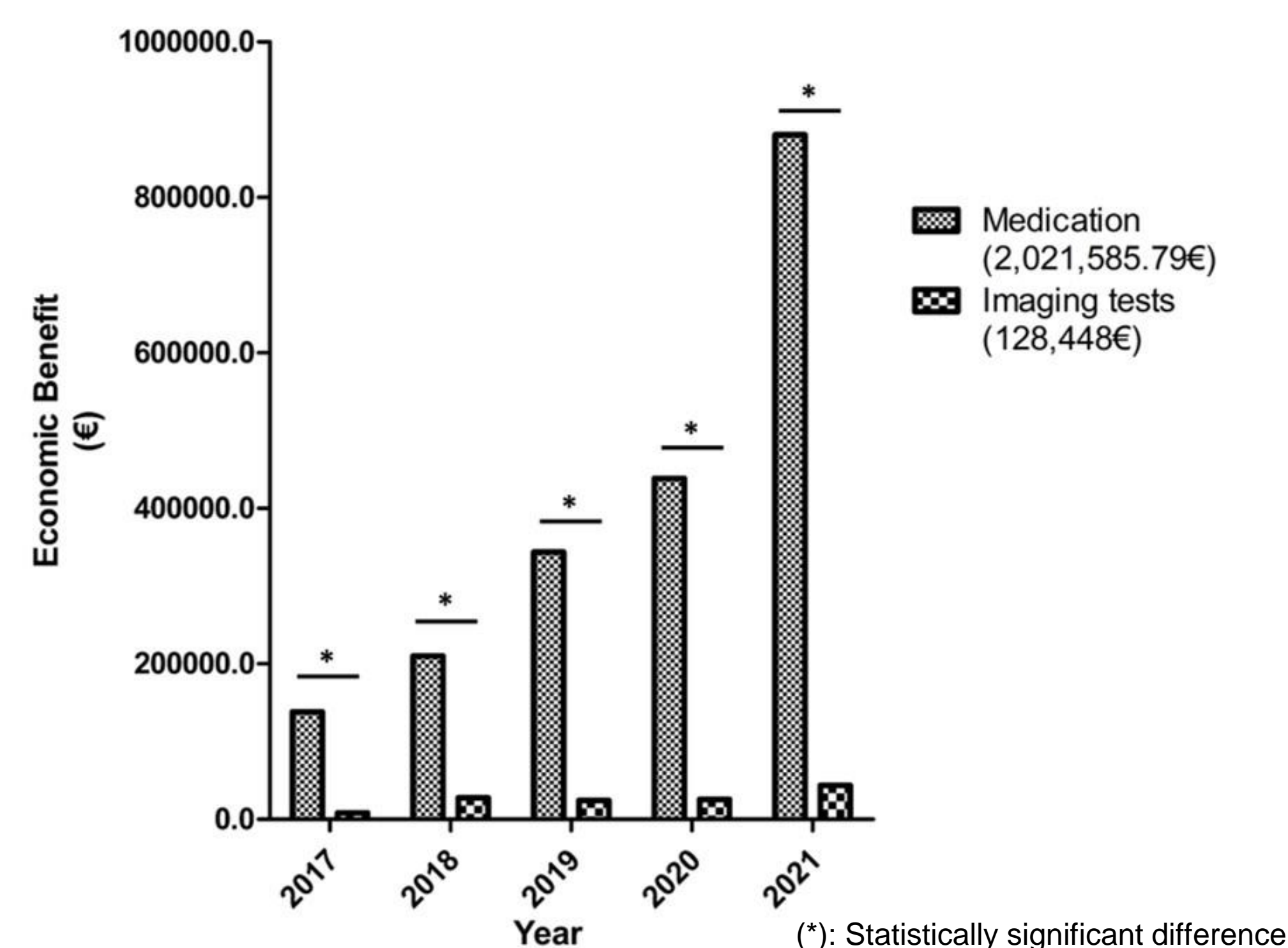
Year	Number of CTs	Number of patients	Economic benefit in medication
2017	16	18	138.463€
2018	14	29	210.267€
2019	18	35	343.695€
2020	21	37	502.697€
2021	23	46	874.156€

The total economic benefit due to imaging tests financed by the sponsor in five years was 128.750€. The results are depicted in the table below:

Year	CTs	NMRs	PETs	Gammagraphies	Economic benefit
2017	45	0	0	0	8.550€
2018	117	8	2	7	27.678€
2019	103	2	3	2	24.280€
2020	115	15	0	6	25.774€
2021	174	33	1	17	42.468€

The total **economic benefit was 2.198.028€** between 2017 and 2021. The statistical analysis revealed that the economic differences between sponsors providing the medication and financing the imaging tests were significantly different with  $p < 0.05$ .

The number of CTs increases each year. Thus, more patients were included, increasing the economic benefit for our hospital and, by extent, the Spanish National Health System.



### CONCLUSION AND RELEVANCE

This study demonstrates that lung cancer clinical trials were associated with substantial economic benefits reducing medication expenses and sponsor-financing medical tests. By participating in such trials, healthcare institutions can potentially alleviate the economic burden associated with lung cancer treatment and improve patient access to innovative therapies. With a total saving of 2.198.028€ over five years, our findings highlight the economic efficiency of clinical trials and underscore the value of measuring these savings.

