

COST-EFFECTIVENESS OF ERLOTINIB AS FIRST-LINE MAINTENANCE THERAPY FOR ADVANCED NON-SMALL-CELL LUNG CARCINOMA IN PATIENTS EGFR WT AND STABLE DISEASE AFTER FOUR CYCLES OF CHEMOTHERAPY

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Introduction and Objectives:

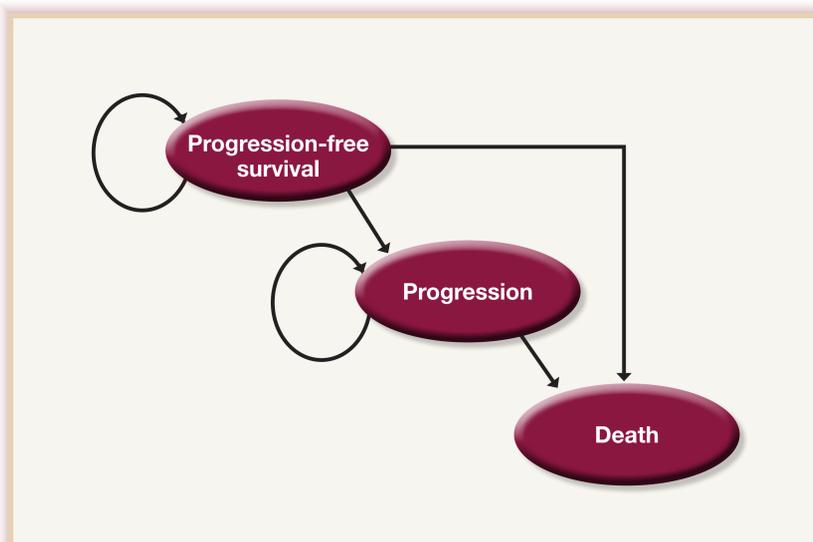
Lung cancer is one of the most frequently diagnosed malignancies throughout the world, and non-small cell lung cancer (NSCLC) is the most common type of lung cancer, accounting for about 80% of all lung cancers.

Maintenance therapy is defined as the prolongation of treatment duration or administration of additional treatment at the end of a defined number of initial chemotherapy cycles, after maximum tumor response has been achieved, with the aim of prolonging the survival of patients.

Methods:

A Markov model including three health states (progression free survival, progression and death) was developed to evaluate the cost per life year gained (LYG) of maintenance treatment with erlotinib vs BSC from the Spanish National Healthcare System perspective (figure 1).

Figure 1.- Model structure.



Erlotinib (Tarceva®) is an epidermal growth factor receptor tyrosine kinase inhibitor (EGFR TKI) used as monotherapy for maintenance treatment in patients with locally advanced or metastatic NSCLC with stable disease after 4 cycles of standard platinum-based first-line chemotherapy.

To estimate the cost-effectiveness of maintenance therapy with oral erlotinib (150mg/day) and BSC compared with BSC, in patients with advanced non-small-cell lung cancer (NSCLC) EGFR WT and stable disease after completing four cycles of first-line platinum-based chemotherapy.

Survival data from the SATURN trial were used to follow patients from the progression-free survival to the progression and death states, and allowed for extrapolation of the data beyond the trial period.

Resource utilization related to each health state was estimated by a Spanish Expert Panel. Drug and unitary costs were obtained from a Spanish database (€, 2012). The annual discount rate applied was 3.0% for cost and outcomes. The simulation was carried out over a 5 year time horizon and one-way deterministic and probabilistic sensitivity analyses were conducted to assess the uncertainty around key input values.

Table 1.- Monthly costs for PFS and progression health states.

	PFS	Progression	
		BSC	Erlotinib
Pharmacologic monthly cost for disease symptoms management (€)	32.3	314.2	157.1
Disease management monthly cost (€)	295.4	1,005.1	912.3
TOTAL	327.7	1,319.3	1,069.4

Results:

In the pre-specified subset of patients with EGFR WT and stable disease, the annual cost per patient of erlotinib and placebo, including supportive care and adverse events costs, was 23,912€ and 13,969€, respectively. Erlotinib also achieved a mean gain of 1.40 life-years compared with

the 1.12 LYG with placebo. The incremental cost-effectiveness ratio of erlotinib relative to placebo was calculated to be 35,265 € per LYG (table 2). Sensitivity analyses confirmed the robustness of the results (table 3).

Table 2.- Model results (deterministic analysis).

	Erlotinib	BSC	Incremental
LYG	1.398	1.116	0.282
Total cost (€)	23,912	13,969	9,943
ICER (€)	-	-	35,265

Table 3.- Deterministic sensitivity analysis.

Parameter	Base case	Values tested	ICER (€/LYG)
Time horizon (years)	5	3	41,606
		4	37,253
Discount rate (%)	3	5	35,923
		0	34,263
Cost of rash (€), ± 20%	37.5	45.0 - 30.0	35,267 - 35,264
Cost of diarrhoea (€), ± 20%	90.3	108.4 - 72.2	35,266 - 35,264
PFS cost (€), ± 20%	327.7	393.2 - 262.2	35,682 - 34,846
Cost of progression (€), ± 20% in BSC and Erlotinib arms	BSC: 1,319.3 Erlotinib: 1,069.4	BSC: 1,583.2 - 1,055.4 Erlotinib: 1,283.3 - 855.5	34,752 - 35,776
PFS and Progression Cost, ± 20%	-	-	35,170 - 35,358

Conclusions:

In patients with advanced NSCLC EGFR WT and stable disease after 4 cycles of chemotherapy, maintenance treatment with erlotinib is a therapeutic option that increases survival of patients and may be cost-effective vs BSC.