

A Systematic Review of Pharmacoeconomic Evaluation of Erlotinib in The First-Line Treatment of Advanced Non-Small Cell Lung Cancer

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Objectives

Targeted therapy, erlotinib, nowadays plays an important role in the first-line treatment of advanced non-small cell lung cancer (NSCLC) thanks to its effectiveness. However, its cost-effectiveness is still controversial. The aim of the study is to review the available evidence on cost-effectiveness of erlotinib in the first-line treatment of advanced NSCLC.

Methods

A systematic review was conducted to identify full-text publications in 3 electronic databases (Scimedirect, Pubmed, Cochrane) from 2000 with key words through MeSH tool. The researches met inclusion criteria (an original economic evaluation of erlotinib in the first-line treatment of advanced NSCLC and written in English) were extracted data and summarized results into pre-specified information table. To compare the results of studies, all currency values were transferred into \$USD in 2016 based on Consumer Price Index. The report's quality of the studies was assessed via the Quality of Health Economic Studies (QHES) instrument by 3 blinded reviewers.

Results

From a total 94 detected papers, 9 studies were included in the review. 4 studies compared erlotinib with the best supportive care, 2 studies dealt with reverse strategy, the others compared with cisplatin plus pemetrexed, gefitinib and carboplatin plus gemcitabine. Cost-effectiveness analysis, modeling and sensitivity analysis were mostly used methods in these studies. All researches evaluated direct costs and used QALY as outcome with 3% discount rate. The ICUR/QALY of studies ranged from dominant to \$275,428/QALY. Based on WTP threshold, 7/9 studies concluded that erlotinib was cost-effectiveness, 2 studies comparing erlotinib with reverse strategy did not find the difference in cost-effectiveness. Using QHES tool, it has been shown the high quality of these studies with the mean score of 82.17 (6.85) on a scale of 100.

Conclusions

Most studies suggested that erlotinib was cost-effectiveness in the first-line treatment of advanced NSCLC and the report's quality of studies was high.