Abstract

OBJECTIVES: A biological and genotypic evaluation of long cancer in non-small cell lung cancer (NSCLC) bearing activating mutations in the epidermal growth factor receptor (EGFR) m+. In this population the EGFR kinase inhibitor (TKI) erlotinib and gefitinib have shown significant increases in progression free survival when compared to chemotherapy. In addition to this, a randomized controlled trial has demonstrated that erlotinib alone can offer a survival benefit of 3.1 months when compared to standard chemotherapy in the second line setting. However, all trials used standard chemotherapy as the comparator, had PFS as the primary end point and compared the TKIs with standard single agent TKI trials, hence, a need for an indirect treatment comparison (ITC) assessment.

METHODOLOGY: Published phase II evidence was used as the basis for the ITCs. The Bucher et al. tools were applied to the FFS hazard ratios (HRs) obtained by comparing the TKIs vs. chemotherapy. Indirect comparisons were performed using orthogonal contrast (95% CI: 0.30–0.9, p=0.0309).

RESULTS: Compared the PFS HRs of erlotinib vs. gefitinib based on the OPTIMAL trial and the WJTOG trial, statistically significant PFS HRs in favor of gefitinib were obtained: PFS HR for gefitinib vs. WJTOG trial 0.33 (0.19–0.58) p=0.0001. This statistically significant PFS difference was also observed when comparing OPTIMAL vs. WJTOG (HR 0.33; 0.25–0.45, p=0.001) and OPTIMAL vs. NEJGSG trial: 0.30 (0.22–0.41, p=0.002). Besides comparing the erlotinib TKI with single agent single TKI trials, erlotinib was compared to a pooled gefitinib evidence.

CONCLUSIONS: According to the underlying indirect comparison of published phase II evidence, erlotinib is the most efficacious EGFR TKI in first line EGFR m+ NSCLC patients.

Introduction & objective

Long cancer is one of the most frequently diagnosed malignancies throughout the world, and lung cancer is the most lethal cause of cancer accounting for about 80% of all cancer deaths. 

• A biological and genetic evaluation of lung cancer in non-small cell lung cancer (NSCLC) bearing activating mutations in the epidermal growth factor receptor (EGFR) m+. In this population the EGFR kinase inhibitor (TKI) erlotinib and gefitinib have shown significant increases in progression free survival when compared to chemotherapy. In addition to this, a randomized controlled trial has demonstrated that erlotinib alone can offer a survival benefit of 3.1 months when compared to standard chemotherapy in the second line setting.

In conclusion: NSCLC patients the estimate of the frequency of EGFR mutation is around 10% to 15%. However, these studies are at a much higher risk in Asian NSCLC patients, in fact, the prevalence rates at 20% 40% have been shown in different studies; this is true in the Chinese population.

• Patients with stage IV NSCLC choose as a priority, a well controlled disease, at least 15% of patients if eligible associate with this long term disease and rapidly neurology high.

The treatment of lung cancer with standard chemotherapy has associated with various complications, furtherly survival improvements with conventional treatment has reached to approximately 10% and relatively low.

Research: into the molecular pathologies of NSCLC has revealed the role of the EGFR signaling pathway. Activating mutations in the epidermal growth factor receptor (EGFR) lead to structural changes, which result in the activation of the tyrosine kinase. This altered kinase results in a high affinity binding for EGFR kinase inhibitors (TKIs).

• This results in a high sensitivity of EGFR m+ NSCLC to EGFR TKIs, therefore, there is an increased interest both in EGFR TKIs for patients bearing mutations.

In the population, phase III trials has shown a significant increase in progression free survival (PFS) due to the EGFR TKIs erlotinib (OPTIMAL trial) and gefitinib (IPASS, NEJ 005, WJTOG 3405) compared to standard chemotherapy, as shown in Figure 1.