Efficacy of Afatinib in the treatment of patients with non-small cell lung cancer and head and neck squamous cell carcinoma: a systematic review and meta-analysis

ABSTRACT

Several randomized controlled trials (RCTs) evaluated the afatinib efficacy in patients with advanced non-small cell lung cancer (NSCLC) and recurrent/metastatic head and neck squamous cell carcinoma (R/M HNSCC). This review systemically outlined and meta-analyzed the afatinib efficacy in NSCLC and R/M HNSCC in terms of overall survival (OS) and progression-free survival (PFS) endpoints. Records were retrieved from PubMed, Web of Science, and ScienceDirect from 2011 to 2020. Eight afatinib RCTs were included and assessed for the risk of bias. In meta-analysis, overall pooled effect size (ES) of OS in afatinib group (AG) significantly improved in all RCTs and NSCLC-RCTs [hazard ratios (HRs): 0.89 (95% CI: 0.81–0.98, p = 0.02); I2 = 0%, p = 0.71/ 0.86 (95% CI: 0.76–0.97; p = 0.02); I2 = 0%, p = 0.50, respectively]. ES of PFS in AG significantly improved in all RCTs, NSCLC-RCTs, and HNSCC-RCTs [HRs: 0.75 (95% CI: 0.68–0.83; p < 0.00001); I2 = 26%, p = 0.24; 0.75 (95% CI: 0.66–0.84; p < 0.00001); I2 = 47%, p = 0.15/0.76 (95% CI: 0.65–88; p = 0.0004); I2 = 34%, p = 0.0004, respectively]. From a clinical viewpoint of severity, interstitial lung disease, dyspnea, pneumonia, acute renal failure, and renal injury were rarely incident adverse events in the afatinib group. In conclusion, first- and second-line afatinib monotherapy improved the survival of patients with NSCLC, while second-line afatinib monotherapy could be promising for R/M HNSCC. The prospective protocol is in PROSPERO (ID = CRD42020204547).

Keyword: Afatinib; Randomized clinical trials; Non-small cell lung cancer; Head and neck squamous cell carcinoma