Necitumumab: a new therapeutic option for squamous cell lung cancer?

Rathi Pillai, Emory University
Suresh Ramalingam, Emory University

Journal Title: Translational Lung Cancer Research
Volume: Volume 3, Number 6
Publisher: AME Publications | 2014-12, Pages 382-383
Type of Work: Article | Final Publisher PDF
Publisher DOI: 10.3978/j.issn.2218-6751.2014.11.01
Permanent URL: https://pid.emory.edu/ark:/25593/pmhbv

Final published version: http://dx.doi.org/10.3978/j.issn.2218-6751.2014.11.01

Copyright information:
2014 Translational lung cancer research. OpenAccessThis journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

Accessed December 5, 2018 7:39 PM EST
Squamous cell carcinoma (SqCC) accounts for 25% to 30% of all non-small lung carcinoma (NSCLC) diagnosed worldwide. Therapeutic advances for squamous cell lung carcinoma have remained stagnant. This is in stark comparison to adenocarcinoma of the lung, which has benefited from the development of therapies such as bevacizumab and pemetrexed, as well as targeted therapies for specific molecular subsets with epidermal growth factor receptor (EGFR) mutations and anaplastic lymphoma kinase (ALK) rearrangements. Recent genomic characterization of SqCC by The Cancer Genome Atlas has identified mutations/amplifications in receptor tyrosine kinase pathways PI3K, AKT, and FGFR, which may yield potentially druggable targets for therapy in the future (1).

At the present time, patients with SqCC desperately need better treatment options.

Cetuximab, a monoclonal antibody against EGFR, has limited activity as monotherapy in NSCLC, but has been demonstrated to improve survival when combined with platinum-based chemotherapy (2). The relatively modest survival benefit [hazard ratio (HR) =0.87], combined with the absence of predictive biomarkers has essentially limited the clinical utilization of cetuximab. It remains as the only drug in NSCLC that improved survival, but did not gain approval by the US Food and Drug Administration. Overall there was good treatment exposure, with a median of six cycles of gemcitabine/cisplatin administered in the necitumumab arm compared to five in the chemotherapy alone arm; 51% patients received continuation maintenance therapy with necitumumab, for a median of 4 (range, 1-41) cycles. The study achieved its primary endpoint and demonstrated a statistically significant improvement in overall survival with the addition of necitumumab to chemotherapy (11.5 vs. 9.9 months; HR =0.84; 95% CI, 0.74-0.96; P=0.012). The PFS differences reached statistical significance despite a relatively small numerical difference at the median (5.7 vs. 5.5 m; HR =0.85; 95% CI, 0.74-0.98; P=0.020). However, the addition of necitumumab did not improve the response rate (28.8% gemcitabine/cisplatin vs. 31.2% necitumumab; P=0.4). Combination therapy with necitumumab was generally well tolerated, with an increase in the incidence of grade 3/4 rash (7.1% vs. 0.4%), hypomagnesemia...
and quality of life, and biomarker discovery will provide more clarity about the role of this agent in the routine care of patients with squamous cell histology. We can also put an end to further evaluation of EGFR expression as a predictive marker for EGFR monoclonal antibodies in NSCLC.

Acknowledgements

Disclosure: Dr. Ramalingam has served as a consultant for advisory board meetings for Astra Zeneca, Ariad, Amgen, Aveo, Biodesix, Boehringer Ingelheim, Celgene, Eli Lilly, Genentech and Novartis pharmaceuticals and has received compensation. Dr. Pillai has no disclosures.

References
