The FGFR inhibitor dovitinib showed modest efficacy in a phase II trial of patients with pretreated, advanced squamous cell lung cancer with FGFR1 amplification.

The majority of new cytotoxic chemotherapies for the treatment of non–small-cell lung cancer (NSCLC) such as pemetrexed or targeted agents such as gefitinib or erlotinib are not indicated for the SCC subtype because of a lack of efficacy or because activity is limited to tumors with specific genetic alterations that are rarely found in patients with squamous cell NSCLC,” wrote study authors led by Myung-Ju Ahn, MD, PhD, of Samsung Medical Center in Seoul, South Korea. SCC accounts for about 30% of all NSCLC cases.

Earlier work has suggested that FGFR signaling is associated with SCC, among other cancers. Dovitinib is a novel multi-targeted tyrosine kinase inhibitor with activity against FGFR, VEGFR, and other targets.

In the new phase II study, a total of 26 patients, all men, with SCC and FGFR1 amplification were treated with dovitinib 500 mg once daily for days 1 to 5 of every week, followed by two days off. The results of the study were published online ahead of print in Cancer.

The study had a median follow-up period of 15.7 months. The objective response rate in the study was 11.5%, with a disease control rate of 50%. There were no complete responses, and three patients achieved a partial response. Ten patients had stable disease, and nine had progressive disease.

The median progression-free survival in the cohort was 2.9 months, and the median overall survival was 5 months. The authors noted an “unfavorable trend” for overall survival in dovitinib-treated patients who had FGFR1 amplification with a copy number at the median value or higher compared with those with lower copy numbers.

All patients experienced at least some adverse event, and 17 patients (65.4%) had at least one grade 3 or higher adverse event. The most common grade 3 or higher adverse events included fatigue in 19.2% of patients, anorexia in 11.5%, and hyponatremia in 11.5%. Twelve patients (46.2%) required a dose reduction of dovitinib, caused mainly by fatigue, anorexia, and diarrhea.

“Dovitinib demonstrated modest antitumor activity against previously treated patients with advanced squamous cell NSCLC with FGFR1 amplification,” the authors concluded, noting that amplification alone does not appear to be a sensitive predictor of response. “Further studies to evaluate other biomarkers correlated with the efficacy of dovitinib in patients with SCC are warranted.”

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