FDA Approves Ibtrozi for ROS1-Positive Lung Cancer

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On June 11, the Food and Drug Administration approved Ibtrozi (taletrectinib) for adults with locally advanced or metastatic ROS1-positive non-small cell lung cancer (NSCLC). In two clinical trials, about 90% of patients not previously treated with this type of medication experienced tumor shrinkage.

ROS1-positive lung cancer is rare, accounting for about 2% of new NSCLC cases, or about 3,000 new diagnoses of advanced disease annually in the United States. Patients tend to be relatively young (median age 50 years at diagnosis), and it is more likely to occur in people who never smoked. ROS1-positive lung cancer tends to be aggressive. Many people experience disease progression despite treatment, and metastasis to the brain is common.

“Patients living with advanced ROS1-positive non-small cell lung cancer and their healthcare providers are in need of new treatment options,” study investigator Nathan Pennell, MD, PhD, of the Cleveland Clinic, said in a news release. “Ibtrozi’s durability of response and ability to effectively penetrate the brain, coupled with a well-characterized and manageable safety profile, further addresses these critical needs for patients.”

Ibtrozi, from Nuvation Bio, is a highly selective, next-generation oral ROS1 tyrosine kinase inhibitor (TKI), a type of targeted therapy. Treatment involves once-daily pills taken on an empty stomach.

The approval is supported by findings from two single-arm, open-label Phase II clinical trials, TRUST-I (NCT04395677) and TRUST-II (NCT04919811). Together, the studies included 157 people with advanced ROS1-positive NSCLC who had not previously received a ROS1 TKI and 113 patients who had received one such drug; some had also undergone prior chemotherapy for advanced disease. They were treated with oral Ibtrozi once daily until disease progression or unacceptable side effects.

The confirmed overall response rate, indicating tumor regression, was 90% in TRUST-I and 85% in TRUST-II. The median duration of response has not yet been reached, but a majority of responders in both studies had a response duration of at least a year (72% and 63%, respectively). The

longest duration of response to date is 46.9 months and counting. Among patients with brain metastasis, 73% and 63% had an intracranial response. Looking only at patients previously treated with a ROS1 TKI, the overall response rates in the two trials were 52% and 62%, respectively.

Combined study results were recently published in the Journal of Clinical Oncology. Additional data presented at the 2025 American Society of Clinical Oncology Annual Meeting showed that Ibtrozi efficacy and safety were comparable across geographic regions and racial/ethnic groups.

Treatment was generally well tolerated, though side effects were common. The most common adverse reactions included diarrhea, nausea, vomiting, dizziness, rash, constipation and fatigue, mostly mild to moderate. Treatment discontinuation due to treatment-emergent adverse events was uncommon (7%). The Ibtrozi prescribing information includes warnings about liver toxicity, interstitial lung disease, heart rhythm abnormalities, muscle pain and bone fractures.

“For people living with advanced ROS1-positive lung cancer, who tend to be diagnosed at a younger age, having another treatment option can make a real difference for them and their loved ones,” said Janet Freeman-Daily, cofounder and president of the patient advocacy group ROS1ders. “The approval of this new targeted therapy is a meaningful step forward for the advanced ROS1-positive lung cancer community and offers hope for patients facing the added challenge of cancer spreading to the brain.”

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