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FDA Clears IND to Test Intranasal Foralumab in Alzheimer Disease

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Foralumab, a therapy designed to bind to T cell receptor, is about to be assessed in phase 2 trials of patients with non-active secondary progressive multiple sclerosis in the third quarter of 2023.

Gabriele Cerrone

In recent news, the FDA has cleared the investigational new drug (IND) application to evaluate Tiziana Life Sciences' intranasal agent foralumab, a fully human intranasal anti-CD3 monoclonal antibody, as a treatment for Alzheimer disease (AD).[1] Foralumab might be a promising therapy for AD since it targets the underlying disease pathology through attacking the neuroinflammation caused because by the collection of toxic proteins in the brain.

"The IND clearance is a significant milestone for Tiziana that highlights the strength and the therapeutic potential of foralumab. We are deeply committed to advancing the field of neurodegenerative diseases and bringing much-needed relief to patients suffering from Alzheimer's with a novel therapeutic approach," Gabriele Cerrone, Chairman, acting CEO and founder of Tiziana Life Sciences said in a statement.[1] "We are thrilled to have reached this critical juncture and are eager to move forward with the necessary trials to evaluate the effectiveness of foralumab in Alzheimer's disease in combination with an FDA approved therapy or as a single agent."

In October 2022, the company announced plans to file the IND to the FDA for a phase 1 study assessing intranasal foralumab in AD following an affirmative response from the FDA on its pre-investigational new drug application. Foralumab, formerly known as NI-0401, has been shown to reduce release of key cytokines in healthy volunteers and in patients with Crohn disease. A patient IND application for foralumab to improve the success of chimeric antigen receptor T-cells therapy for cancer and other human diseases has also been submitted.

Foralumab has been investigated in several other different conditions, including patients with mild to moderate COVID-19. Published in August 2021, the study featured 39 outpatients who were randomized to either control (n = 16), intranasal foralumab 100 µg/day given for 10 consecutive days with 6 mg dexamethasone given on days 1-3 (n = 11), and intranasal foralumab 100 µg/day along given for 10 consecutive days (n = 12). All told, investigators observed a reduction of serum interleukin-6 and C-reactive protein (CRP) in patients treated solely with foralumab vs controls or those on a combination approach. Specifically, foralumab alone resulted in a 69% reduction in IL-6 levels at day 10 (P = .031) and 85% reduction in CRP at day 10 (P = .032).[3]

"The IND clearance is a significant step forward in the fight against Alzheimer disease. Foralumab shows great promise in targeting the pathological hallmarks of the disease, and I am optimistic about its potential to offer a breakthrough treatment option for patients suffering from this devastating condition. I look forward to witnessing the progress of this important therapy," Howard L. Weiner, MD, the Robert L. Kroc professor of neurology at the Harvard Medical School, director and founder of the Partners Multiple Sclerosis Center and codirector of the Center for

Neurologic Diseases at Brigham and Women's Hospital, a founding member of Mass General Brigham Healthcare System, said in a statement.[1]

Foralumab is also currently being evaluated in a small group of patients with non-active secondary progressive multiple sclerosis (na-SPMS). In the recent data, the therapy showed a reduction in microglial activation after 3 months on the medication. Among the 6 individuals included in the program, 5 patients demonstrated a reduction in microglial activation on positron emission tomography scans.[4]

"There are currently no FDA-approved treatments for na-SPMS," principal investigator Tanuja Chitnis, MD, a professor of neurology at Harvard Medical School, and senior neurologist at Brigham and Women's Hospital, said in a statement at the time.[4] "The reduction in microglial activation in the 3-month PET scans in 5 out of 6 patients is truly encouraging and I look forward to getting the 3-month PET scans results of the next 4 Expanded Access patients later in 2023 and to starting the phase 2a trial this year."

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