

February 14, 2024



Tonix Pharmaceuticals Hosted KOL Webinar on Positive Phase 3 Fibromyalgia Trial for Tonmya™, Plans to File NDA for FDA Approval in Second Half of 2024

Clinical results show that Tonmya™ has broad-spectrum activity, addressing the three core fibromyalgia symptoms: pain, fatigue, and sleep disturbance

Tonmya™ has a favorable tolerability profile well-suited for chronic treatment

CHATHAM, N.J., Feb. 14, 2024 (GLOBE NEWSWIRE) -- Tonix Pharmaceuticals Holding Corp. (Nasdaq: TNXP) (Tonix or the Company), a biopharmaceutical company with marketed products and a pipeline of development candidates, held a key opinion leader (KOL) webinar to discuss the positive Phase 3 data of Tonmya™ (also known as TNX-102 SL, cyclobenzaprine HCl sublingual tablets) for the management of fibromyalgia, and the path to file for FDA approval in the second half of 2024. The webinar was held on January 31, 2024 and hosted by Alliance Global Partners (A.G.P.).

The webinar featured two thought leaders in the field of fibromyalgia: Daniel Clauw, M.D., Professor of Anesthesiology, Medicine and Psychiatry, Director Chronic Pain & Fatigue Research Center, University of Michigan, and Lesley Arnold, M.D., Professor of Psychiatry and Behavioral Neuroscience, University of Cincinnati College of Medicine.

A replay of the webinar is available [here](#).

Tonmya™ is a centrally acting, non-opioid, non-addictive, bedtime medication. As previously announced, Tonix's second positive Phase 3 study, RESILIENT, met its pre-specified primary endpoint, significantly reducing daily pain compared to placebo ($p=0.00005$) in participants with fibromyalgia. Statistically significant and clinically meaningful results ($p=0.001$ or better) were also seen in all key secondary endpoints related to improving sleep quality, reducing fatigue, and improving overall fibromyalgia symptoms and function.

Tonix plans to submit a New Drug Application (NDA) to the U.S. Food and Drug Administration (FDA) in the second half of 2024 for Tonmya™ for the management of fibromyalgia.

"These data offer new hope for patients with fibromyalgia," said Dr. Arnold. "Many of my patients have required combination treatments to combat their multiple fibromyalgia-related symptoms. We haven't seen a medication that can treat fatigue, sleep, and pain all together. Having a compound like Tonmya™ that may address all three is very exciting."

“The fact that cyclobenzaprine was beneficial in many other key symptom domains, including sleep quality, is important to fibromyalgia patients,” said Dr. Clauw. “We’re really beginning to understand how crucial sleep is in alleviating and potentially preventing fibromyalgia symptoms.”

Dr. Arnold stated that most patients are open to new treatment options, citing lack of efficacy in some cases, tolerability issues and unwanted side effects associated with the currently approved fibromyalgia treatments. “Since patients typically need to be treated for prolonged periods of time, it is important to develop a therapeutic which is well-tolerated.”

“We believe that these positive results show that fibromyalgia can be successfully treated by Tonmya™ and may provide the opportunity for Tonix to have the first FDA-approved drug for fibromyalgia in more than a decade,” said Seth Lederman, M.D., President and Chief Executive Officer of Tonix Pharmaceuticals. “We are now an important step closer to bringing a new, first-line treatment to fibromyalgia patients that offers broad symptom relief and favorable tolerability for chronic use and adherence.”

About the Phase 3 RESILIENT Study

The RESILIENT study was a double-blind, randomized, placebo-controlled trial designed to evaluate the efficacy and safety of Tonmya™ (TNX-102 SL: cyclobenzaprine HCl sublingual tablets) for the management of fibromyalgia. The two-arm trial randomized 457 participants in the U.S. across 33 sites. The first two weeks of treatment consisted of a run-in period in which participants started on TNX-102 SL 2.8 mg (1 tablet) or placebo. Thereafter, all participants increased their dose to TNX-102 SL 5.6 mg (2 x 2.8 mg tablets) or two placebo tablets for the remaining 12 weeks. The study met the pre-specified primary endpoint of daily diary pain severity score change (TNX-102 SL 5.6 mg vs. placebo) from baseline to Week 14 (using the weekly averages of the daily numerical rating scale scores), analyzed by mixed model repeated measures with multiple imputation (p=0.00005).

For more information, see ClinicalTrials.gov Identifier: [NCT05273749](https://clinicaltrials.gov/ct2/show/study/NCT05273749).

About Fibromyalgia

Fibromyalgia is a chronic pain disorder that is understood to result from amplified sensory and pain signaling within the central nervous system. Fibromyalgia afflicts an estimated 6 million to 12 million adults in the U.S., the majority of whom are women. Symptoms of fibromyalgia include chronic widespread pain, nonrestorative sleep, fatigue, and morning stiffness. Other associated symptoms include cognitive dysfunction and mood disturbances, including anxiety and depression. Individuals suffering from fibromyalgia struggle with their daily activities, have impaired quality of life, and frequently are disabled. Physicians and patients report common dissatisfaction with currently marketed products.

About Tonmya™ (also known as TNX-102 SL)

Tonmya is a patented sublingual tablet formulation of cyclobenzaprine hydrochloride which is designed for daily administration at bedtime with a proposed mechanism of improving sleep quality in fibromyalgia. Tonmya provides rapid transmucosal absorption and reduced production of a long half-life active metabolite, norcyclobenzaprine, due to bypass of first-pass hepatic metabolism. As a multifunctional agent with potent binding and antagonist activities at the 5-HT_{2A}-serotonergic, α₁-adrenergic, H₁-histaminergic, and M₁-muscarinic cholinergic receptors, Tonmya is in development as a daily bedtime treatment for fibromyalgia. TNX-102 SL is also in development for fibromyalgia-type Long COVID (formally

known as post-acute sequelae of COVID-19 [PASC]), alcohol use disorder, and agitation in Alzheimer's disease. The United States Patent and Trademark Office (USPTO) issued United States Patent No. 9636408 in May 2017, Patent No. 9956188 in May 2018, Patent No. 10117936 in November 2018, Patent No. 10,357,465 in July 2019, and Patent No. 10736859 in August 2020. The Protectic™ protective eutectic and Angstro-Technology™ formulation claimed in the patent are important elements of Tonix's proprietary Tonmya composition. These patents are expected to provide Tonmya, upon NDA approval, with U.S. market exclusivity until 2034/2035. In addition, Tonix has pending but not issued U.S. patent applications directed to the transmucosal absorption of CBP-HCl, with U.S. market exclusivity expected until 2033, for treating depressive symptoms in fibromyalgia, with U.S. market exclusivity expected until 2032, and for treating pain in fibromyalgia with U.S. market exclusivity expected until 2041.

Tonix Pharmaceuticals Holding Corp.*

Tonix is a biopharmaceutical company focused on commercializing, developing, discovering and licensing therapeutics to treat and prevent human disease and alleviate suffering. Tonix's development portfolio is focused on central nervous system disorders. Tonix's priority is to submit a New Drug Application (NDA) to the FDA for Tonmya, which has completed two positive Phase 3 studies for the management of fibromyalgia. Tonix intends to meet with the FDA in the first half of 2024 and submit an NDA for the approval of Tonmya for the management of fibromyalgia in the second half of 2024. TNX-102 SL is being developed to reduce the severity of acute stress reaction and the frequency of acute stress disorder and posttraumatic stress disorder. This trial is being sponsored by the University of North Carolina and received funding support from the U.S. Department of Defense. TNX-102 SL is also being developed to treat fibromyalgia-type Long COVID, a chronic post-acute COVID-19 condition, and topline results from a proof-of-concept study were reported in the third quarter of 2023. TNX-1300 (cocaine esterase) is a biologic designed to treat cocaine intoxication and has been granted Breakthrough Therapy designation by the FDA and received funding from the National Institute on Drug Abuse (NIDA). A Phase 2 study of TNX-1300 is expected to be initiated in the first quarter of 2024. Tonix's rare disease development portfolio includes TNX-2900 (intranasal potentiated oxytocin) for the treatment of Prader-Willi syndrome (PWS). TNX-2900 has been granted Orphan Drug designation by the FDA and an investigational new drug (IND) application has been cleared to support a Phase 2 study in PWS patients. Tonix's immunology development portfolio includes biologics to address organ transplant rejection, autoimmunity and cancer, including TNX-1500, which is a humanized monoclonal antibody targeting CD40-ligand (CD40L or CD154) being developed for the prevention of allograft rejection and for the treatment of autoimmune diseases. A Phase 1 study of TNX-1500 was initiated in the third quarter of 2023. Tonix's infectious disease pipeline includes TNX-801, a vaccine in development to prevent smallpox and mpox. TNX-801 also serves as the live virus vaccine platform or recombinant pox vaccine platform for other infectious diseases, including TNX-1800, in development as a vaccine to protect against COVID-19. During the fourth quarter of 2023, TNX-1800 was selected by the U.S. National Institutes of Health (NIH), National Institute of Allergy and Infectious Diseases (NIAID) Project NextGen for inclusion in Phase 1 clinical trials. The infectious disease development portfolio also includes TNX-3900 and TNX-4000, which are classes of broad-spectrum small molecule oral antivirals. Tonix Medicines, our commercial subsidiary, markets Zembrace® SymTouch® (sumatriptan injection) 3 mg and Tosymra® (sumatriptan nasal spray) 10 mg under a transition services agreement with Upsher-Smith Laboratories, LLC from whom the products were acquired on June 30, 2023. Zembrace SymTouch and

Tosymra are each indicated for the treatment of acute migraine with or without aura in adults.

*Tonix's product development candidates are investigational new drugs or biologics and have not been approved for any indication.

Zembrace SymTouch and Tosymra are registered trademarks of Tonix Medicines. All other marks are property of their respective owners.

This press release and further information about Tonix can be found at www.tonixpharma.com.

Forward Looking Statements

Certain statements in this press release are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. These statements may be identified by the use of forward-looking words such as "anticipate," "believe," "forecast," "estimate," "expect," and "intend," among others. These forward-looking statements are based on Tonix's current expectations and actual results could differ materially. There are a number of factors that could cause actual events to differ materially from those indicated by such forward-looking statements. These factors include, but are not limited to, risks related to the failure to obtain FDA clearances or approvals and noncompliance with FDA regulations; risks related to the failure to successfully market any of our products; risks related to the timing and progress of clinical development of our product candidates; our need for additional financing; uncertainties of patent protection and litigation; uncertainties of government or third party payor reimbursement; limited research and development efforts and dependence upon third parties; and substantial competition. As with any pharmaceutical under development, there are significant risks in the development, regulatory approval and commercialization of new products. Tonix does not undertake an obligation to update or revise any forward-looking statement. Investors should read the risk factors set forth in the Annual Report on Form 10-K for the year ended December 31, 2022, as filed with the Securities and Exchange Commission (the "SEC") on March 13, 2023, and periodic reports filed with the SEC on or after the date thereof. All of Tonix's forward-looking statements are expressly qualified by all such risk factors and other cautionary statements. The information set forth herein speaks only as of the date thereof.

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Source: Tonix Pharmaceuticals Holding Corp.