

Results from Astellas' Pivotal Phase 3 SKYLIGHT 1™ Study of Fezolinetant for Vasomotor Symptoms Due to Menopause Published in The Lancet

Treatment with fezolinetant resulted in statistically significant reductions in the frequency and severity of VMS and improvements in quality of life

TOKYO, March 13, 2023 – Astellas Pharma Inc. (TSE: 4503, President and CEO: Kenji Yasukawa, Ph.D., “Astellas”) today announced The Lancet published detailed results from the pivotal Phase 3 SKYLIGHT 1™ study of fezolinetant, an investigational oral, nonhormonal compound being studied for the treatment of moderate to severe vasomotor symptoms (VMS) due to menopause. The study data was first published online March 13 in The Lancet.¹ VMS, characterized by hot flashes and/or night sweats, are common symptoms of menopause.^{2,3}

The study met the four coprimary efficacy endpoints. Fezolinetant 30 and 45 mg once daily demonstrated statistically significant improvements from baseline in VMS frequency and severity at 4 and 12 weeks compared to placebo. These improvements were observed as early as week 1, and the effects were maintained throughout the remainder of the 52-week study period. During the double-blind period, treatment-emergent adverse events (TEAEs) occurred in 37% of fezolinetant 30 mg, 43% of 45 mg and 45% of placebo participants. The safety profile of fezolinetant observed during the 40-week extension period was consistent with that of the 12-week placebo-controlled period. Over the 52 weeks of the study, the most commonly reported TEAEs were headache and COVID-19. SKYLIGHT 1 12-week topline efficacy and safety results were first presented at the [American College of Obstetricians and Gynecologists 2022 Annual Meeting](#).

“The SKYLIGHT 1 study showed that women receiving fezolinetant experienced a reduction in the frequency and severity of VMS and improvements in quality of life over the one-year treatment period,” said Genevieve Neal-Perry, M.D., Ph.D., Chair, UNC School of Medicine Department of Obstetrics and Gynecology. “As a healthcare provider, I truly understand the burden of VMS due to menopause on my own patients, and I’m really excited about this potential new nonhormonal treatment option to help women experiencing moderate to severe VMS.”

The key secondary endpoint was mean change in the Patient-Reported Outcomes Measurement Information System Sleep Disturbance – Short Form 8b (PROMIS SD SF 8b) Total Score from baseline to 12 weeks. While improvements in sleep disturbance were observed, statistical significance was not met for either fezolinetant dose at 12 weeks. Additional sleep analyses using the Patient Global Impression of Change in Sleep Disturbance (PGI-C SD) and Patient Global Impression of Severity in Sleep Disturbance (PGI-S SD) scales showed a higher proportion of patients in the fezolinetant 30 and 45 mg groups reported improvements at 4 and 12 weeks compared with placebo. Further evidence of the efficacy of fezolinetant was shown in the analyses of the Menopause-Specific Quality of Life (MENQOL) questionnaire, which demonstrated a significant and clinically meaningful^{4,5} improvement at 4 and 12 weeks that was maintained through 52 weeks.

“This publication of the SKYLIGHT 1 study is another important report of a Phase 3 randomized trial assessing the utility of an investigational nonhormonal agent, fezolinetant, that targets the neurokinin 3 receptor to reduce the frequency and severity of moderate to severe VMS due to menopause, and we are honored to see it published in *The Lancet*,” said Ahsan Arozullah, M.D., M.P.H., Senior Vice President and Head of Development Therapeutic Areas, Astellas. “This manuscript, which provides further insights into the safety and effectiveness of fezolinetant, reinforces Astellas’ commitment to turning innovative science into value for patients.”

In addition to this publication, results from SKYLIGHT 2 and SKYLIGHT 4 have recently been published in [The Journal of Clinical Endocrinology & Metabolism](#) and [Obstetrics & Gynecology](#), respectively.^{6,7}

Fezolinetant is an investigational selective neurokinin 3 (NK3) receptor antagonist and is not approved for use anywhere in the world. Regulatory applications for fezolinetant are under review in the U.S., EU, Switzerland and Australia. If approved, fezolinetant would be a first-in-class, nonhormonal treatment option to reduce the frequency and severity of moderate to severe VMS due to menopause.

About the BRIGHT SKY™ Phase 3 Program

The BRIGHT SKY pivotal trials, SKYLIGHT 1™ (NCT04003155) and SKYLIGHT 2™ (NCT04003142), enrolled over 1,000 women with moderate to severe VMS. The trials are double-blinded, placebo-controlled for the first 12 weeks followed by a 40-week treatment extension period. Women were enrolled at over 180 sites within the U.S., Canada and Europe. SKYLIGHT 4™ (NCT04003389) is a 52-week double-blinded, placebo-controlled study designed to investigate the long-term safety of fezolinetant. For SKYLIGHT 4, over 1,800 women with VMS were enrolled at over 180 sites within the U.S., Canada and Europe.

About VMS Due to Menopause

VMS, characterized by hot flashes (also called hot flushes) and/or night sweats, are common symptoms of menopause.^{2,3} In the U.S., about 60% to 80% of women experience these symptoms during or after the menopausal transition and, worldwide, more than half of women will experience VMS at some time between the ages of 40 to 64 years.^{8,9,10,11} VMS can have a disruptive impact on women’s daily activities and overall quality of life.¹

About Fezolinetant

Fezolinetant is an investigational oral, nonhormonal therapy in clinical development for the treatment of moderate to severe VMS due to menopause. Fezolinetant works by blocking neurokinin B (NKB) binding on the kisspeptin/neurokinin/dynorphin (KNDy) neuron to modulate neuronal activity in the thermoregulatory center of the brain (the hypothalamus) to reduce the frequency and severity of moderate to severe VMS due to menopause.^{12,13,14} The safety and efficacy of fezolinetant are under investigation and have not been established. There is no guarantee the agent will receive regulatory approval or become commercially available for the uses being investigated.

About Astellas

Astellas Pharma Inc. is a pharmaceutical company conducting business in more than 70 countries around the world. We are promoting the Focus Area Approach that is designed to identify opportunities for the continuous creation of new drugs to address diseases with high unmet medical needs by focusing on Biology and Modality. Furthermore, we are also looking beyond our foundational Rx focus to create Rx+® healthcare solutions that combine our expertise and knowledge with cutting-edge technology in different fields of external partners. Through these efforts, Astellas stands on the forefront of healthcare change to turn innovative science into VALUE for patients. For more information, please visit our website at <https://www.astellas.com/en>.

Cautionary Notes

In this press release, statements made with respect to current plans, estimates, strategies and beliefs and other statements that are not historical facts are forward-looking statements about the future performance of Astellas. These statements are based on management’s current assumptions and beliefs in light of the information currently available to it and involve known and unknown risks and uncertainties. A number of factors could cause actual results to differ materially from those discussed in the forward-looking statements. Such factors include, but are not limited to: (i) changes in general economic conditions and in laws and regulations, relating to pharmaceutical markets, (ii) currency exchange rate fluctuations, (iii) delays in new product launches, (iv) the inability of Astellas to market existing and new products effectively, (v) the inability of Astellas to continue to

effectively research and develop products accepted by customers in highly competitive markets, and (vi) infringements of Astellas' intellectual property rights by third parties. Information about pharmaceutical products (including products currently in development) which is included in this press release is not intended to constitute an advertisement or medical advice.

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References

- ¹ Lederman S, Ottery F, Cano A et al. Fezolinetant for treatment of moderate-to-severe vasomotor symptoms associated with menopause (SKYLIGHT 1): a phase 3 randomised controlled study. *The Lancet*. March 13, 2023. doi:10.1016/S0140-6736(23)00085-5.
- ² Utian WH. Psychosocial and socioeconomic burden of vasomotor symptoms in menopause: a comprehensive review. *Health Qual Life Outcomes*. 2005;3:47.
- ³ Jones RE, Lopez KH, eds. *Human Reproductive Biology*. 4th ed. Waltham, MA: Elsevier, 2014:120.
- ⁴ Lewis JE, Hilditch JR, Wong CJ. Further psychometric property development of the Menopause-Specific Quality of Life questionnaire and development of a modified version, MENQOL-Intervention questionnaire. *Maturitas*. 2005;50:209-221.
- ⁵ Hilditch JR, Lewis J, Peter A, et al. Reprint of a menopause-specific quality of life questionnaire: development and psychometric properties. *Maturitas*. 2008;61:107-121.
- ⁶ Johnson K, Martin N, Nappi R et al. Efficacy and safety of fezolinetant in moderate-to-severe vasomotor symptoms associated with menopause: A Phase 3 RCT. *The Journal of Clinical Endocrinology & Metabolism*. 2023;00:1-17.
- ⁷ Neal-Perry G, Cano A, Lederman S, et al. Safety of fezolinetant for vasomotor symptoms associated with menopause: a randomized controlled trial. *Obstetrics & Gynecology*. March 9, 2023. doi:10.1097/AOG.0000000000005114.
- ⁸ Makara-Studzinska MT, Krysz-Noszczyk KM, Jakiel G. Epidemiology of the symptoms of menopause - an intercontinental review. *Przegl Menopauzalny [Menopause Rev]*. 2014;13:203-211.
- ⁹ Gold EB, Colvin A, Avis N, et al. Longitudinal analysis of the association between vasomotor symptoms and race/ethnicity across the menopausal transition: study of women's health across the nation. *Am J Public Health*. 2006;96:1226-1235.
- ¹⁰ Freeman EW, Sammel MD, Sanders RJ. Risk of long-term hot flashes after natural menopause: evidence from the Penn Ovarian Aging Study cohort. *Menopause*. 2014;21:924-932.
- ¹¹ Williams RE, Kalilani L, DiBenedetti DB, et al. Frequency and severity of vasomotor symptoms among peri- and postmenopausal women in the United States. *Climacteric*. 2008;11:32-43.
- ¹² Depypere H, Timmerman D, Donders G, et al. Treatment of menopausal vasomotor symptoms with fezolinetant, a neurokinin 3 receptor antagonist: a phase 2a trial. *J Clin Endocrinol Metab*. 2019;104:5893-5905.
- ¹³ Fraser GL, Lederman S, Waldbaum A, et al. A phase 2b, randomized, placebo-controlled, double-blind, dose-ranging study of the neurokinin 3 receptor antagonist fezolinetant for vasomotor symptoms associated with menopause. *Menopause*. 2020;27:382-392.
- ¹⁴ Fraser GL, Hoveyda HR, Clarke IJ, et al. The NK3 receptor antagonist ESN364 interrupts pulsatile LH secretion and moderate levels of ovarian hormones throughout the menstrual cycle. *Endocrinology*. 2015;156:4214-4225.