

# NOE-PMM-201, Results Of Phase 2a Study Of NOE-115 For The Treatment of Vasomotor Symptoms In Menopause

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## SUMMARY

**1** Recent advances in managing VMS pharmacologically have focused on antagonism of the NK1/3 receptor leaving unaddressed many co-occurring symptoms: depression, weight gain/food craving, and fatigue.

**2** Cendifensine (NOE-115) modulates serotonin, norepinephrine, and dopamine simultaneously; in this open-label trial, such modulation was expected to improve VMS and well as other associated symptoms of menopause.

**3** Large, clinically meaningful reductions from baseline were reported in moderate-to-severe hot flash frequency (82% at Week4; 92% at Week 12) and severity (42% at Week4; 59% at Week 12) with cendifensine 30 mg daily; similar improvement was seen with the 60 mg cohort.

**4** Cendifensine improved symptoms of depression, food cravings, fatigue, and weight gain, consistent with its mechanism of action and nonclinical model.

**5** Cendifensine 30 mg was well tolerated, with no serious events and no clinically significant changes in laboratories or ECGs; transient BP elevation during the first 28 days that attenuated with continued treatment.

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## INTRODUCTION & OBJECTIVE

- Vasomotor symptoms (VMS), including hot flashes and night sweats, affect over 80% of peri- and postmenopausal women.<sup>1</sup> Up to 40% experience moderate-to-severe VMS requiring treatment, yet many of these remain undertreated due to contraindications or reluctance to use hormonal therapy.<sup>2</sup> Approved / off-label non-hormonal options, such as low dose paroxetine (Selective Serotonin Reuptake Inhibitor - SSRI), venlafaxine and desvenlafaxine (Serotonin–Norepinephrine Reuptake Inhibitor - SNRIs) provide limited reduction of VMS and some improvement of the menopause-associated symptoms. NK1/3 receptor antagonists, primarily targeting thermoregulatory pathways, do not fully address the broader constellation of menopause-associated symptoms, including low mood, fatigue, food craving/body weight gain, and cognitive complaints.<sup>3-5</sup>
- Declining estrogen levels during menopause disrupt serotonergic (SE), noradrenergic (NE), and dopaminergic (DA) neurotransmission, narrowing the thermoregulatory zone and simultaneously impairing cortical and hypothalamic domains

## METHODS

### DESIGN

- NOE-PMM-201 was a Phase 2a, single-arm, open-label, multicenter study conducted at 5 sites in the United States (April 2024–August 2025) (FIGURE 1).
- The study comprised 3 sequential cohorts: 15 mg 4-week treatment cohort (n=5), 60 mg 12-week treatment cohort (n=17), 30 mg 12-week treatment cohort (n=18)

### ENDPOINTS

- Primary (safety):** Proportion of participants discontinuing study intervention due to treatment-emergent adverse events (TEAEs), with 95% CI (Clopper-Pearson)
- Secondary (safety):** Adverse events (AEs) including serious adverse events (SAEs);
- Secondary (efficacy):** Mean change from baseline at Weeks 4 and 12 in:
  - Daily frequency and daily severity of moderate-to-severe VMS (Hot Flash Diary)
  - Clinical Global Impression–Severity (CGI-S)
  - Proportion of responders (≥ 30% frequency or severity reduction from baseline)
- Exploratory:** MENO-D (Depression in Menopause scale), FCQ-T-R (Food Craving Questionnaire-Trait-Revised), BFI (Brief Fatigue Inventory), pharmacokinetics

## RESULTS

### Population Characteristics & Disposition

- Of 121 women screened, 40 were enrolled across 5 sites (81 screen failures). The study population was racially diverse (TABLE 1). Baseline VMS burden was substantial, with a mean of 12.7 (SD 5.6) moderate-to-severe hot flashes per day.

**TABLE 1. Baseline Demographics and Disease Characteristics (Safety Analysis Set)**

Characteristic	Cohort 30 mg 12-week (n=18)	Cohort 60 mg 12-week (n=17)	Overall (n=40) <sup>a</sup>
Age, years - mean (SD)	54.2 (2.6)	54.2 (4.6)	54.1 (3.7)
BMI, kg/m <sup>2</sup> - mean (SD)	28.2 (5.2)	29.2 (4.4)	29.3 (5.2)
Weight, kg - mean (SD)	75.0 (16.3)	79.6 (13.8)	78.7 (15.5)
Race			
Black or African American	5 (27.8)	10 (58.8)	18 (45.0)
White	9 (50.0)	4 (23.5)	15 (37.5)
Asian	2 (11.1)	2 (11.8)	4 (10.0)
Other <sup>b</sup>	2 (11.1)	1 (5.9)	3 (7.5)
Baseline moderate-to-severe VMS/day - mean (SD)	12.4 (3.7)	12.3 (6.0)	12.7 (5.6)
Baseline VMS severity score - mean (SD)	2.4 (0.4)	2.6 (0.4)	2.5 (0.4)

<sup>a</sup> Overall includes 15 mg 4-week Cohort (n=5). <sup>b</sup> Includes American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, and Other.

BMI = body mass index; SD = standard deviation; VMS = vasomotor symptoms.

### Disposition & Exposure

- Overall, 57.5% of participants (23/40) completed the study. In the 17 patients who discontinued, 9 discontinued for adverse events, 6 withdrawals of consent, 1 lost of follow-up and 1 protocol deviation.
- Cendifensine treatment exposure is presented in TABLE 2

**TABLE 2. Cendifensine Treatment Exposure (Safety Analysis Set)**

Characteristic	Cohort 30 mg 12-week (n=18)	Cohort 60 mg 12-week (n=17)	Overall (N=40) <sup>a</sup>
Median treatment exposure, days (range)	83 (7–89)	61 (1–87)	61 (1–89)
Highest dose received — n (%)			
15 mg	4 (22.2)	2 (11.8)	11 (27.5)
30 mg	14 (77.8)	3 (17.6)	17 (42.5)
45 mg	-	1 (5.9)	1 (2.5)
60 mg	-	11 (64.7)	11 (27.5)

<sup>a</sup> Overall includes Cohort 15 mg 4-week (n=5).

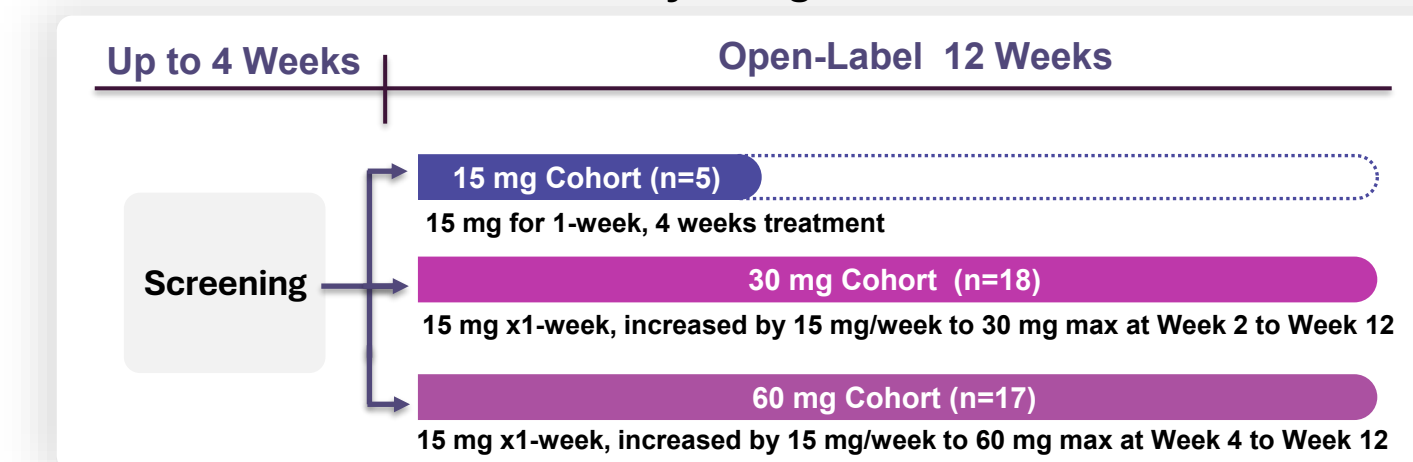
controlling mood, appetite, sleep, and cognition.<sup>6</sup>

- Cendifensine (NOE-115) is a novel, investigational broad-spectrum monoamine regulator modulating the serotonin transporter (SERT), norepinephrine transporter (NET), and dopamine transporter (DAT). Cendifensine is designed to restore thermoregulatory balance while also addressing associated menopausal symptoms.

## OBJECTIVE

To evaluate the safety, tolerability, and preliminary efficacy of cendifensine (NOE-115) 15–60 mg QD for 12 weeks in postmenopausal women with moderate-to-severe VMS.

**FIGURE 1. NOE-PMM-201 study design**



adverse events of special interest (AESIs: euphoria, hypertension, tachycardia); suicidal ideation/behavior (Columbia–Suicide Severity Rating Scale C-SSRS); withdrawal symptoms (Penn Physician Withdrawal Checklist - Penn PWC); nature, frequency, and temporality of TEAEs; weight (kg)

- Secondary (efficacy):** Mean change from baseline at Weeks 4 and 12 in:

- Daily frequency and daily severity of moderate-to-severe VMS (Hot Flash Diary)
- Clinical Global Impression–Severity (CGI-S)
- Proportion of responders (≥ 30% frequency or severity reduction from baseline)
- Exploratory:** MENO-D (Depression in Menopause scale), FCQ-T-R (Food Craving Questionnaire-Trait-Revised), BFI (Brief Fatigue Inventory), pharmacokinetics

### Efficacy – Changes in Moderate-to-Severe daily VMS

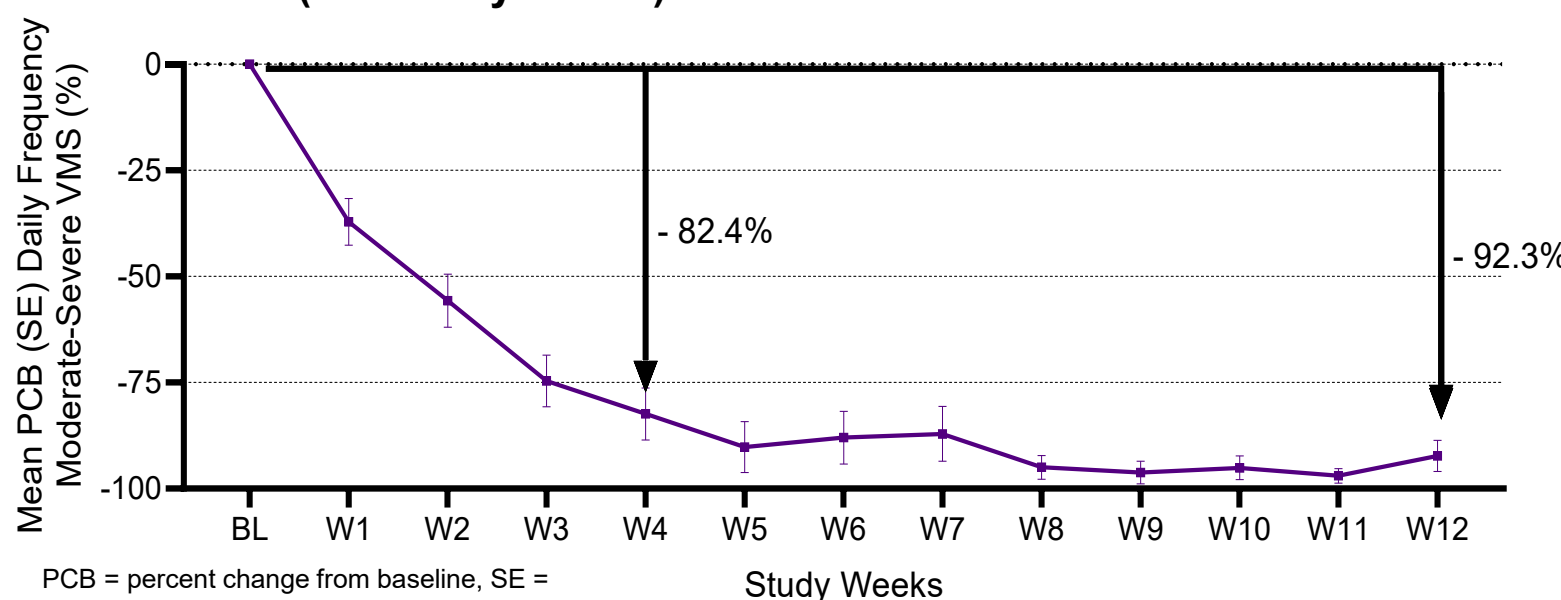
- Large, clinically meaningful and statistically significant within-group reductions from baseline in both daily VMS frequency and severity were observed at all post-baseline timepoints for participants in the 12-Week 30 mg and 60 mg cohorts (TABLE 3, FIGURE 2).
- The 30 mg cohort showed numerically greater improvements than the 60 mg cohort across all key efficacy parameters, with:
  - Moderate-to-Severe daily VMS Frequency: 92.3% reduction at Week 12 vs Baseline
  - VMS Severity: 59.2% reduction at Week 12 vs Baseline

**TABLE 3. VMS Frequency and Severity Changes (Full Analysis Set)**

Percent Change From Baseline (p within group change)	Cohort 30 mg 12-week (n=18)	Cohort 60 mg 12-week (n=17)
VMS Moderate-to-Severe Frequency		
Week 4	- 82.4% (p<0.001)	- 67.5% (p<0.001)
Week 12	- 92.3% (p<0.001)	- 78.1% (p=0.016)
VMS Severity		
Week 4	- 41.8% (p<0.001)	- 41.6% (p<0.001)
Week 12	- 59.2% (p<0.001)	- 45.6% (p=0.031)

VMS = vasomotor symptoms.

**FIGURE 2. Percent change From Baseline, VMS frequency, 30 mg 12-week cohort (Full Analysis Set)**



PCB = percent change from baseline, SE = standard error, VMS = vasomotor symptoms

- Sensitivity analyses (LOCF imputation, per protocol analyses) show consistent improvement in Moderate-to-Severe daily frequency and VMS severity.
- Responder analyses showed that most of participants improved by 75% or more (Daily Moderate-to-Severe VMS Frequency).

### Efficacy – VMS Co-occurring symptoms

- Depression: Among the subgroup of patients with baseline MENO-D above the median, the MENO-D total score mean (SD) was 19.6 (4.5), consistent with mild depression. Patients reported a mean 12.9-point reduction at Week 12.
- Food craving and weight: Among the subgroup of patients with baseline Food Craving Questionnaire (FCQ-T-R) score ≥ 50 (n=11), a baseline mean score (SD) of 63.5 (11.6) was reported, consistent with clinically significant food craving abnormalities. Patients reported a mean 22.8-point reduction at Week 12 (n=6, p<0.001). The 30mg cohort reported a median reduction in weight of 2.5 kg.
- Fatigue: Among the subgroup of patients with baseline BFI score above the median (n=11), the baseline BFI total score mean (SD) was 5.9 (0.6), consistent with moderate fatigue. Patients reported an improvement at week 12 vs baseline of -4.32 (n=5, p<0.05).

### Safety

- No deaths, no SAEs were reported.
- No suicidal ideation or behavior was reported at any timepoint (C-SSRS).
- No clinically meaningful findings in chemistry, hematology, coagulation, urinalysis, liver function tests, or ECG parameters.
- No clinically significant withdrawal symptoms were observed during treatment or follow-up (Penn PWC).
- AESIs comprised hypertension (n=3) and tachycardia (n=1); all were mild or moderate, mostly resolved, all considered possibly treatment related.
- Most frequently reported AEs: dry mouth, headache, insomnia, constipation, dizziness.
- Vital signs: nominal blood pressure elevation during Weeks 1–4 with accommodation; negligible change at steady state (Week 12). Modest pulse rate increase consistent with cendifensine's pharmacology. No clinically significant blood pressure or heart rate AEs at steady state.

## CONCLUSIONS

- Cendifensine 30 mg daily demonstrated robust reductions in both the frequency (92%) and severity (59%) of moderate-to-severe VMS over 12 weeks in postmenopausal women with substantial baseline symptom burden.
- Improvements measured in mood, food craving, fatigue, and body weight consistent with cendifensine mechanism of action.
- These Phase 2a open-label results support advancement to a randomized, placebo-controlled Phase 2b trial to confirm the efficacy and safety of cendifensine for VMS and other menopause-associated symptoms.