UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported):
March 23, 2020

MILESTONE PHARMACEUTICALS INC.

(Exact name of registrant as specified in its charter)

Québec	**001-38899**	**Not applicable**
(state or other jurisdiction of incorporation)	(Commission File Number)	(I.R.S. Employer Identification No.)

1111 Dr. Frederik-Philips Boulevard, Suite 420 **Montréal, Québec CA**	**H4M 2X6**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(514) 336-0444**

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Shares	MIST	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b–2 of the Securities Exchange Act of 1934 (§ 240.12b–2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☒

Item 8.01. Other Events.

On March 23, 2020, Milestone Pharmaceuticals Inc. (the “Company”) issued a press release announcing topline results from its Phase 3 NODE-301 trial of etripamil for the treatment of paroxysmal supraventricular tachycardia. A copy of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The Company will host a conference call and webcast to discuss the results of the NODE-301 trial at 5:00 p.m. ET on March 23, 2020. The live call may be accessed by phone by dialing (800) 529-3311 (domestic) or (470) 495-9164 (international). The conference ID is 6152207. A live audio webcast of the event may also be accessed through the "Investors" section of the Company’s website at www.milestonepharma.com. A replay of the webcast will be available for 30 days following the event. The information contained in, or that can be accessed through, the Company’s website is not a part of this filing. A copy of the slide presentation to be used by the Company during the conference call is filed as Exhibit 99.2 to this Current Report on Form 8-K and is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Press release, dated March 23, 2020
99.2	Conference Call Presentation, dated March 23, 2020

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MILESTONE PHARMACEUTICALS INC.

By:/s/ Amit Hasija
Amit Hasija
Chief Financial Officer
Principal Financial Officer

Dated: March 23, 2020

Exhibit 99.1

Milestone Pharmaceuticals Announces Topline Results from First-of-its-kind Phase 3 NODE-301 Trial of Etripamil for At-home Acute PSVT Treatment

- *Study missed primary endpoint of mean time to conversion of SVT to SR over a five-hour period following dosing (p=0.12) –*
- *Etripamil showed rapid conversion of SVT to SR during the first 45 minutes (p=0.02), consistent with its known pharmacology –*
- *Study demonstrated a positive safety profile showing etripamil was well tolerated in the at-home setting –*
- *Small number of placebo patients and prolonged efficacy measurement period confounded results –*
- *Company plans to discuss next steps with regulators and continue its full PSVT clinical program, including NODE-301B, NODE-302 and NODE-303 –*
- *Company to host conference call today at 5:00 p.m. ET –*

Montreal and Charlotte, NC, March 23, 2020 – Milestone Pharmaceuticals Inc. (Nasdaq: MIST), a biopharmaceutical company focused on the development and commercialization of innovative cardiovascular medicines, today announced topline results from its Phase 3, multicenter, randomized, double-blind, placebo-controlled NODE-301 trial of its investigational new drug, etripamil nasal spray, the Company's novel short-acting calcium channel blocker, in patients with paroxysmal supraventricular tachycardia (PSVT).

The NODE-301 trial, which enrolled a total of 431 patients across 65 sites in the U.S. and Canada, is an event-driven Phase 3 efficacy trial of etripamil for terminating supraventricular tachycardia (SVT) episodes in the at-home setting. Etripamil (70mg) did not achieve its primary endpoint of time to conversion of SVT to sinus rhythm (SR) compared to placebo over the five hour period following study drug administration (median time to conversion of 25 minutes [95% CI: 16, 43] for etripamil vs. 50 minutes [95% CI: 31,101] for placebo, p=0.12). Despite early activity, including the conversion of 61% of etripamil patients vs. 45% of placebo patients by 45 minutes (p=0.02), a time period consistent with etripamil’s known pharmacological activity, results from the latter part of the analysis confounded the statistical analysis of the primary endpoint.

The study demonstrated statistically significant improvements in favor of etripamil over placebo in the important secondary endpoint of patient reported treatment satisfaction, as measured by a treatment satisfaction questionnaire for medication (TSQM-9), including global satisfaction (p=0.0069) and effectiveness scores (p=0.0015), with questions addressing the relief of symptoms commonly associated with an episode of SVT, such as rapid pulse, heart palpitations, anxiety, shortness of breath and dizziness. Additionally, there was a trend in improvement in the percentage of patients seeking rescue medical intervention, including in the emergency department, with etripamil and placebo patients reporting 15% and 27%, respectively (p=0.12).

The safety and tolerability data from the NODE-301 study are supportive of at-home use of etripamil, with adverse events (AE) consistent with those observed in prior trials. The most common AEs observed in patients receiving etripamil were local to the nose, including nasal irritation and congestion, and these events were typically transient in nature and most commonly characterized by the patient as mild in severity. There were no significant differences in incidences of severe adverse events or adverse events of interest, such as atrioventricular nodal blocks or blood pressure-related symptoms, across the etripamil and placebo groups.

NODE-301B, which was designed to collect double-blind data from randomized patients who had not yet experienced an event after the NODE-301 trial reached its target number of adjudicated SVT events, continues. These data will be analyzed separately as a second data set. In addition, open-label safety studies of etripamil in subjects with PSVT, NODE-302 and NODE-303, are ongoing with active recruitment underway. The Company is actively monitoring the potential impact of the COVID-19 pandemic on its ongoing trials and will provide updates on any delayed timelines or cost impacts in the future. The Company expects to request a meeting with regulators to discuss the NODE-301 results and its ongoing studies.

“Efficacy signals across the earlier time points in NODE-301, in both primary and secondary endpoints, correlate directly with our understanding of the drug’s known pharmacologic activity. We are also encouraged to see very good safety and tolerability across the broad population enrolled in this study. That said, outcomes after 100 minutes, which were affected by a very small number of placebo patients remaining in the study at that time, suggest that the design and analysis plan used in NODE-301 negatively impacted the study’s outcome,” said Joseph Oliveto, President and Chief Executive Officer of Milestone Pharmaceuticals. “The overall results of the study reinforce our understanding of the promising profile of etripamil and meaningfully inform us how best to prove its efficacy moving forward.”

Mr. Oliveto added: “We will continue to execute as prudently possible on the ongoing NODE studies, including NODE-301B, and look forward to reviewing these data with regulators. The ongoing pandemic highlights the need for, and strengthens our commitment to, home use therapies.”

“PSVT places a significant burden on patients and the healthcare system, and a fast-acting therapy to resolve its symptoms when and where episodes occur would have a material impact on both,” said Bruce Stambler, MD, FHRS, Piedmont Heart Institute, Atlanta, GA. “NODE-301 is a first-of-its-kind study, and as such encountered a number of challenges relative to studying SVT episodes outside of a controlled electrophysiology laboratory environment. The safety results support at-home use and the multiple efficacy signals show us that, with a confirmatory study, etripamil could fulfill the promise of delivering a fast-acting, patient administered therapy for PSVT.”

Conference Call and Webcast

Milestone will host a conference call and webcast to discuss the results of the NODE-301 trial today, March 23, 2020 at 5:00 p.m. ET. To access the live call by phone, dial:

(800) 529-3311 (domestic) or
(470) 495-9164 (international)

The conference ID is 6152207. A live audio webcast of the event may also be accessed through the "Investors" section of Milestone's website at www.milestonepharma.com. A replay of the webcast will be available for 30 days following the event.

About NODE-301

The NODE-301 trial is a Phase 3, multicenter, randomized, double-blind, placebo-controlled trial of etripamil, the Company’s lead investigational product. Etripamil is a novel calcium channel blocker in the form of a nasal spray, intended for the acute treatment of PSVT and other episodic cardiovascular conditions wherever they occur. The study is designed for a population of those PSVT patients who historically experience 20 minutes or longer SVT episodes or episodes requiring termination in the emergency department. Following an in-office test dose of etripamil, 97.5% of patients were randomized (2:1) to receive either 70 mg of etripamil or placebo. Upon onset of PSVT symptoms, patients applied a wireless cardiac monitor to their chest to record heart rhythm, performed a vagal maneuver, and, if symptoms persisted, administered study drug. Of the 198 patient-reported events for which study drug was administered, a total of 156 were confirmed to be SVT events by a central independent adjudication committee and used to assess the study’s efficacy endpoints.

The primary endpoint of the NODE-301 study is time to conversion of an SVT episode to sinus rhythm after the administration of study drug, as confirmed by a central independent adjudication committee. Secondary study endpoints include relief of symptoms commonly associated with an episode of SVT such as heart palpitations, chest pain, anxiety, shortness of breath, dizziness, or fainting, and rating of treatment satisfaction questionnaire for medication (TSQM).

About Paroxysmal Supraventricular Tachycardia

Paroxysmal supraventricular tachycardia (PSVT) is a rapid heart rate condition characterized by intermittent episodes of supraventricular tachycardia (SVT) that start and stop suddenly and without warning. Episodes of SVT are often associated with symptoms including palpitations, sweating, chest pressure or pain, shortness of breath, sudden onset of fatigue, lightheadedness or dizziness, fainting, and anxiety. Certain calcium channel blockers have long been approved for the treatment of PSVT as well as other cardiac conditions; however, when calcium channel blockers are used for the termination of SVT episodes, they must be administered intravenously under medical supervision, usually in an emergency department or other acute care setting.

About Etripamil

Etripamil, the Company's lead investigational product, is designed to be a rapid response therapy for episodic cardiovascular conditions. The novel calcium channel blocker is self-administered via a nasal spray which may shift the current treatment paradigm for many patients with PSVT from the emergency department to the at-home setting. Milestone is conducting a comprehensive development program for etripamil, with Phase 3 trials underway in PSVT, and plans to commence a Phase 2 proof-of-concept trial in atrial fibrillation patients with rapid ventricular rate, with subsequent studies expected in other conditions where calcium channel blockers are used.

About Milestone Pharmaceuticals

Milestone Pharmaceuticals is a biopharmaceutical company focused on the development and commercialization of innovative cardiovascular medicines. Milestone Pharmaceuticals operates in Canada and the United States. For more information, visit www.milestonepharma.com and follow the Company on Twitter at @MilestonePharma.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "plan," "anticipate," "estimate," "intend" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. These forward-looking statements are based on Milestone's expectations and assumptions as of the date of this press release. Each of these forward-looking statements involves risks and uncertainties. Actual results may differ materially from these forward-looking statements. Forward-looking statements contained in this press release include statements regarding (i) the design, progress, timing, scope and results of clinical trials, (ii) potential interactions with regulators, and (iii) the possibility that data will support future development. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, the risks inherent in biopharmaceutical product development and clinical trials, including the lengthy and uncertain regulatory approval process, uncertainties related to the timing of initiation, enrollment, completion and evaluation of clinical trials, and whether the clinical trials will validate the safety and efficacy of etripamil for PSVT or other indications, among others, as well as risks related to pandemics and public health emergencies, including those related to COVID-19, and risks related the sufficiency of our capital resources and our ability to raise additional capital. These and other risks are set forth in Milestone's filings with the U.S. Securities and Exchange Commission, including in its annual report on Form 10-K for the year ended December 31, 2019, under the caption "Risk Factors." Except as required by law, Milestone assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

Contact

David Pitts
Argot Partners
212-600-1902
david@argotpartners.com

Exhibit 99.2


Milestone
PHARMACEUTICALS
NODE-301 Topline Data Conference Call
March 23, 2020

Disclaimers

This Presentation contains forward-looking statements. Words such as "may," "will," "expect," "plan," "anticipate," "estimate," "intend" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify these forward-looking statements. These forward-looking statements are based on Milestone's expectations and assumptions as of the date of this Presentation. Each of these forward-looking statements involves risks and uncertainties. Actual results may differ materially from these forward-looking statements. Forward-looking statements contained in this presentation include statements regarding (i) the design, progress, timing, scope and results of clinical trials, (ii) potential interactions with regulators, and (iii) the possibility that data will support future development. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, the risks inherent in biopharmaceutical product development and clinical trials, including the lengthy and uncertain regulatory approval process, uncertainties related to the timing of initiation, enrollment, completion and evaluation of clinical trials, and whether the clinical trials will validate the safety and efficacy of etripamil for PSVT or other indications, among others, as well as risks related to pandemics and public health emergencies, including those related to COVID-19, and risks related the sufficiency of our capital resources and our ability to raise additional capital. These and other risks are set forth in Milestone's filings with the U.S. Securities and Exchange Commission, including in its annual report on Form 10-K for the year ended December 31, 2019, under the caption "Risk Factors." Except as required by law, Milestone assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, the occurrence of certain events or otherwise.

This Presentation contains trademarks, trade names and service marks of other companies, which are the property of their respective owners. Certain information contained in this Presentation and statements made orally during this Presentation relate to or is based on studies, publications, surveys and other data obtained from third-party sources and the Company's own internal estimates and research. While the Company believes these third-party studies, publications, surveys and other data to be reliable as of the date of the Presentation, it has not independently verified, and makes no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, no independent sources has evaluated the reasonableness or accuracy of the Company's internal estimates or research and no reliance should be made on any information or statements made in this Presentation relating to or based on such internal estimates and research.

Call Participants

Prepared Remarks

- Joseph Oliveto, Chief Executive Officer

Additional Q&A Participants

- Amit Hasija, Chief Financial Officer
- Lorenz Muller, Chief Commercial Officer
- Jeff Nelson, Chief Operating Officer
- Francis Plat, MD, Chief Medical Officer

Opportunity to Shift the Standard of Care out of the Acute-Care Setting for ~2 Million PSVT Patients

Current Acute Treatment Options for PSVT

A Paradigm-Changing Approach

Current acute treatment options are invasive, inconvenient, anxiety-provoking and/or costly

- IV adenosine or DC cardioversion in the ED
- >150K ED visits/hospital admissions per year
- >600k health care claims every year
- Many patients endure episodes when they occur

Opportunity to develop the first approved treatment to be used by patients wherever an episode occurs

- Avoidance of ED visits/ hospital admissions
- Less need for chronic medications
- Alternative or bridge to ablation procedure

PSVT = Paroxysmal Supraventricular Tachycardia DC = Direct Current ED = Emergency Department

Sources: Internal estimates based on market research and longitudinal analysis of Truven/Marketscan and Medicare claims data; Page RL et al, 2015 ACC/AHA/HRS guideline for the management of adult patients with supraventricular tachycardia: executive summary: a report of the ACC/AHA Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation. 2016;133:e471–e505

Overview

NODE-301 top-line:

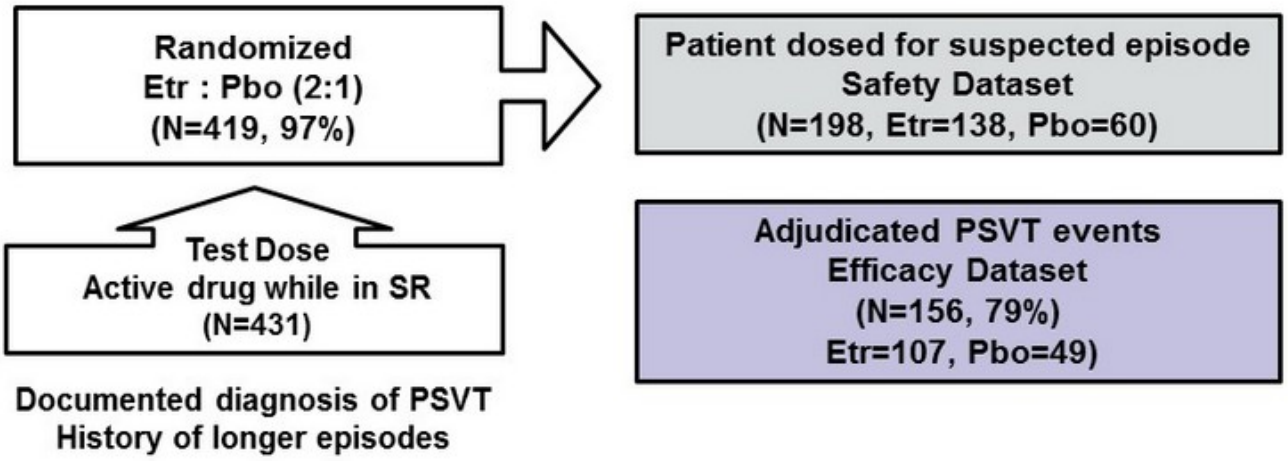
- Missed its primary endpoint over 5 hours
- Showed clinically meaningful efficacy during the first 45 minutes consistent with the known pharmacology of etripamil
- Human factors had little impact on study execution or results
- Demonstrated a positive safety profile showing etripamil was well tolerated in the at-home setting

Company continues to work with regulators to determine next steps

Pivotal Phase 3 Study Design

NODE-301
Etripamil Clinical Research in PSVT

Objective: Superiority of etripamil over placebo in terminating PSVT events in the outpatient setting

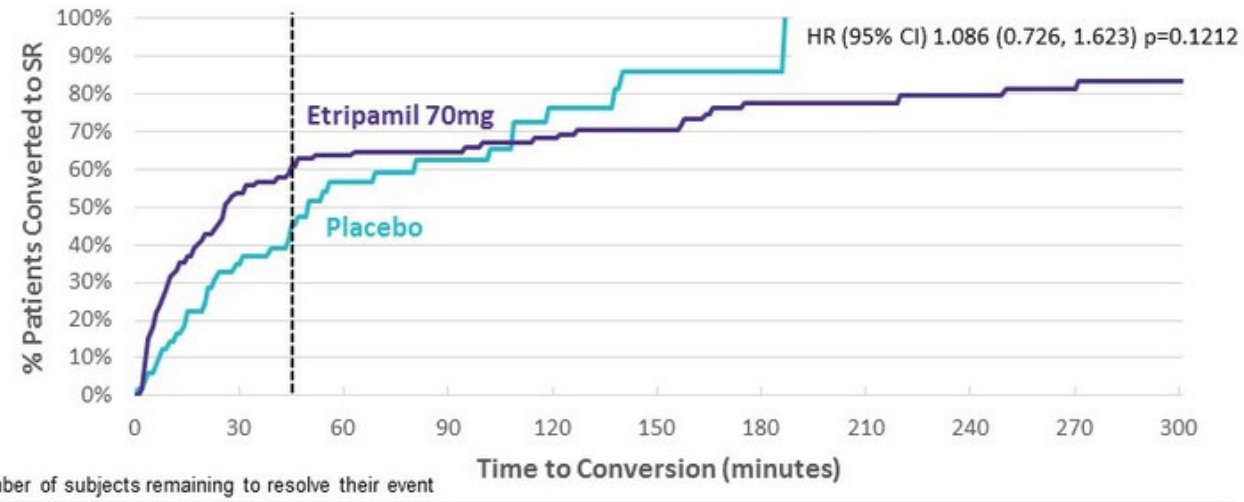


Documented diagnosis of PSVT
History of longer episodes

PSVT = Paroxysmal Supraventricular Tachycardia; SR = Sinus Rhythm; Etr = etripamil; Pbo = placebo

NODE-301 Primary Endpoint – Time to Conversion Analysis

NODE-301 study missed its primary endpoint over 5 hours, but showed early efficacy

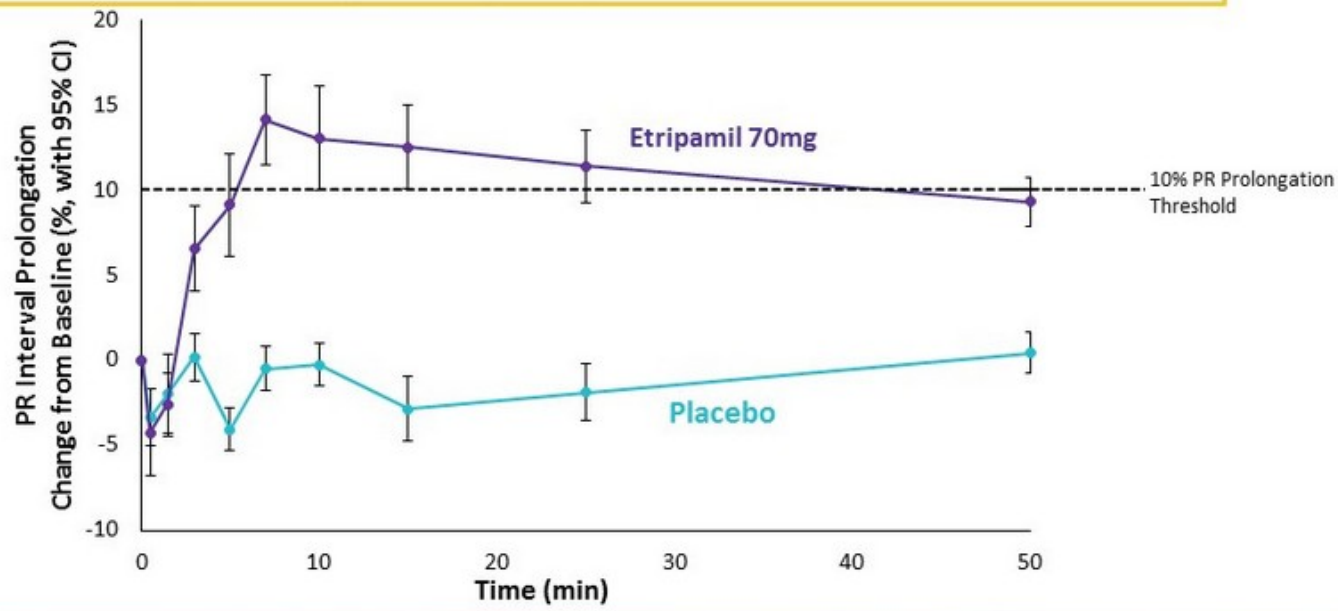


Number of subjects remaining to resolve their event

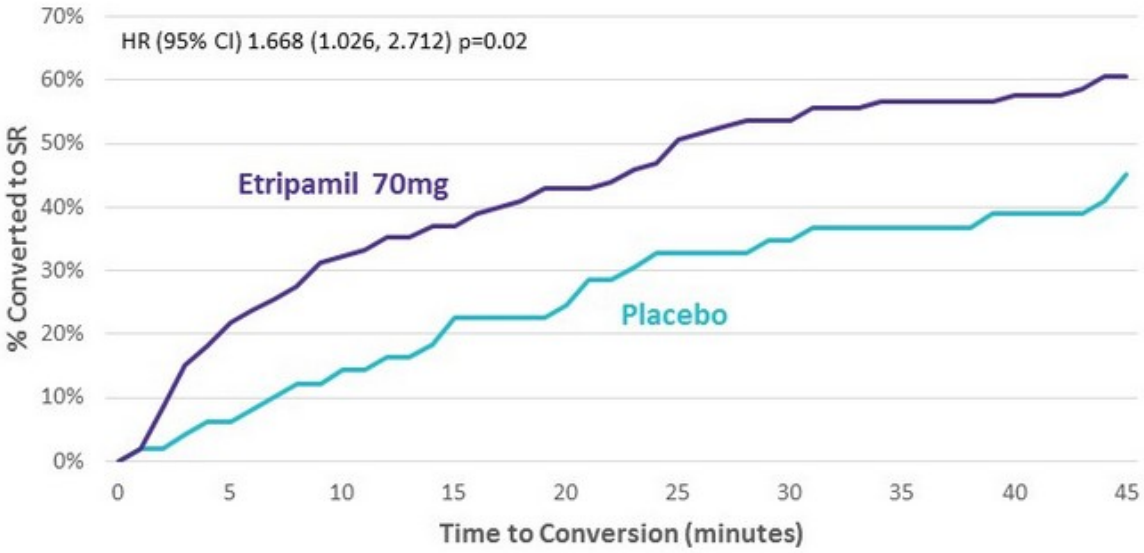
Pbo	49	32	18	12	5	1	1	0			
Etripamil	107	47	36	31	28	22	15	13	11	9	3

NODE-102 Pharmacological Study Results

Effective pharmacologic activity of etripamil occurs between 5 and 45 minutes

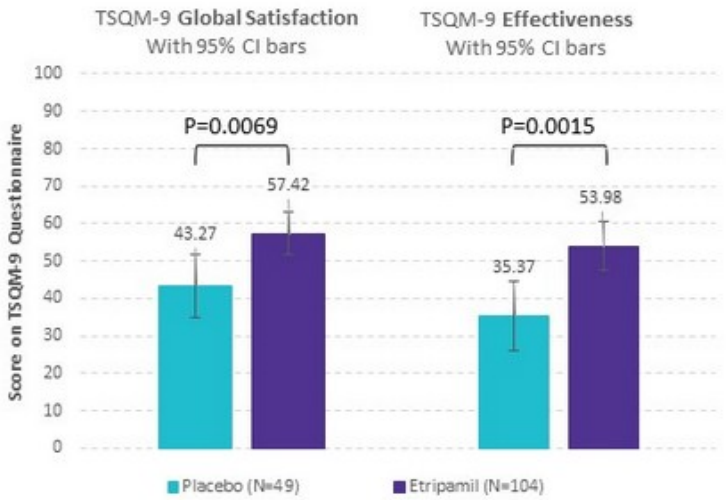


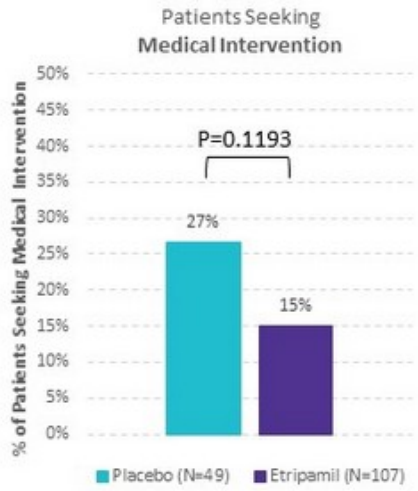
NODE-301 Efficacy– Time to Conversion over 45 Minutes



NODE-301 Key Secondary Endpoints

Key secondary endpoints from NODE-301 support benefit of etripamil to patients and payers





NODE-301 Safety Analysis

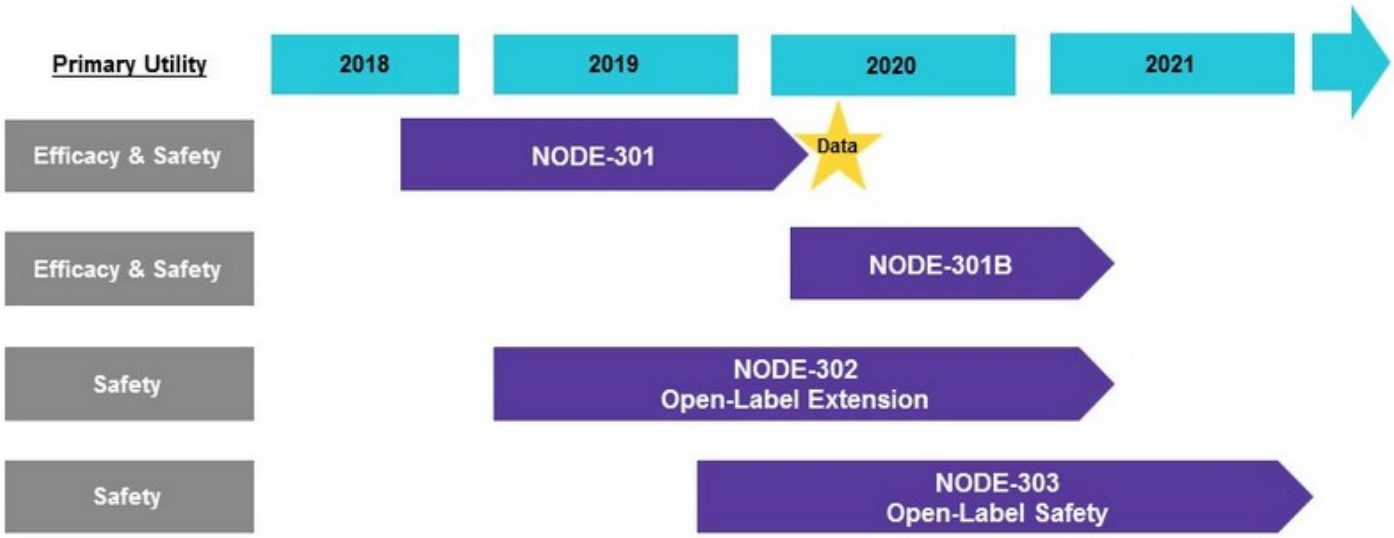
Randomized Treatment Emergent Adverse Events (RTEAE)	Etripamil N=138	Placebo N=60
Subjects with any RTEAE	53 (38.4)	12 (20.0)
Maximum severity of RTEAE		
Mild	45 (32.6)	10 (16.7)
Moderate	8 (5.8)	3 (3.3)
Severe	0 (0.0)	0 (0.0)
Subjects with any Serious Adverse Event (SAE)	0 (0.0)	1 (1.7)
Subjects with any SAE related to study drug	0 (0.0)	0 (0.0)
Subjects with any AE leading to death	0 (0.0)	0 (0.0)
Subjects with AE leading to study drug discontinued	0 (0.0)	0 (0.0)

RTEAE timing – up to 24 hours following double-blind study drug administration

NODE-301 Safety Analysis

Randomized Treatment Emergent Adverse Events	Etripamil (N=138)	Placebo (N=60)
Nasal discomfort	27 (19.6)	4 (6.7)
Nasal congestion	11 (8.0)	2 (3.3)
Epistaxis	9 (6.5)	0 (0.0)
Rhinorrhea	8 (5.8)	1 (1.7)
Throat irritation	7 (5.1)	1 (1.7)
Headache	4 (2.9)	0 (0.0)
Sneezing	3 (2.2)	0 (0.0)
Atrioventricular (AV) block first degree	2 (1.4)	0 (0.0)
Dysgeusia	2 (1.4)	1 (1.7)
Sinus congestion	1 (0.7)	2 (3.3)
Rhinalgia	1 (0.7)	1 (1.7)
Ventricular tachycardia	1 (0.7)	1 (1.7)
Lacrimation increased	1 (0.7)	1 (1.7)
Burning sensation	1 (0.7)	0 (0.0)
Presyncope	1 (0.7)	0 (0.0)
Migraine	1 (0.7)	0 (0.0)

Etripamil PSVT Phase 3 Development Plan



PSVT = Paroxysmal Supraventricular Tachycardia

Overview

NODE-301 top-line:

- Missed its primary endpoint over 5 hours
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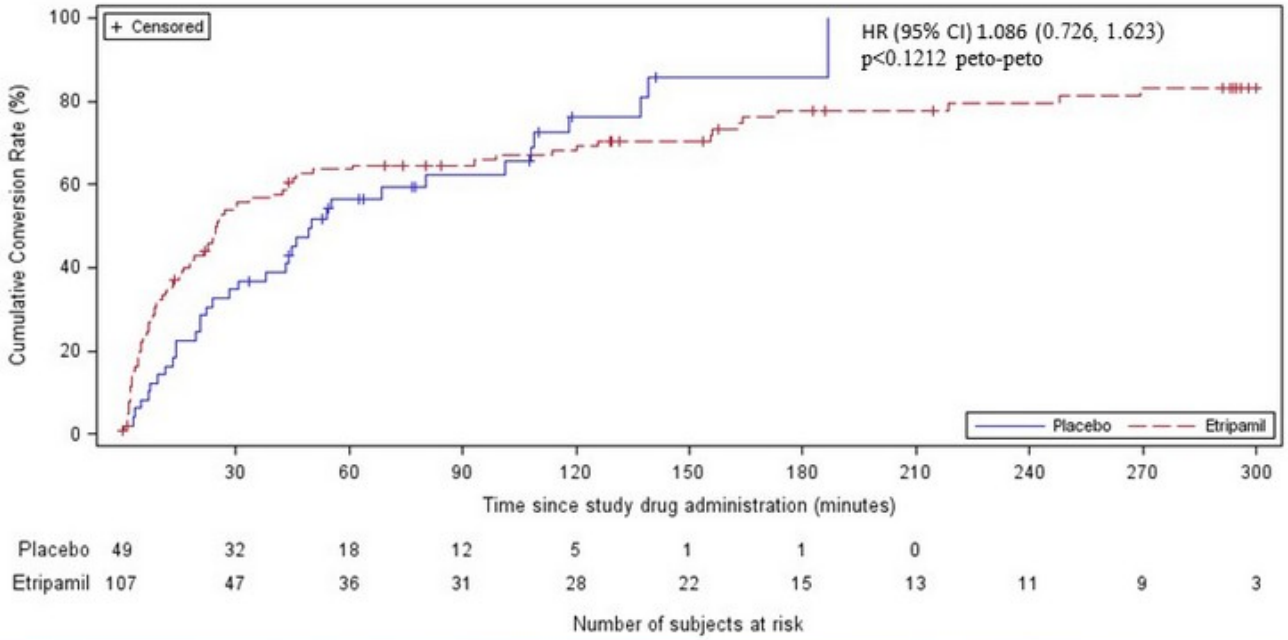
Company continues to work with regulators to determine next steps

Thank You

Kaplan-Meier Plot of Conversion up to Hour 5
Efficacy Population



Placebo	49	32	18	12	5	1	1	0			
Etripamil	107	47	36	31	28	22	15	13	11	9	3

Number of subjects at risk