
Phathom
PHARMACEUTICALS
CHANGING THE LANDSCAPE IN GI
Going beyond to advance treatments for patients with acid-related disorders
CORPORATE OVERVIEW
November 2022

Safe harbor statement

This presentation contains forward-looking statements. All statements other than statements of historical facts contained in this presentation, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing and likelihood of success, plans and objectives of management for future operations, and future results of current and anticipated products, are forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. These risks, uncertainties and other factors include, without limitation: the inherent risks of clinical development of vonoprazan; our dependence on third parties in connection with product manufacturing, research and preclinical and clinical testing; regulatory developments in the United States and foreign countries; our ability to obtain regulatory approvals for and successfully launch and commercialize products containing vonoprazan; our ability to successfully address the formation of nitrosamine impurities in commercial batches of vonoprazan drug product and gain FDA approval of any such resolution; unexpected adverse side effects or inadequate efficacy of vonoprazan that may limit its development, regulatory approval and/or commercialization, or may result in recalls or product liability claims; our ability to obtain and maintain intellectual property protection for vonoprazan; our ability to comply with our license agreement with Takeda; our ability to maintain undisrupted business operations due to the ongoing COVID-19 pandemic, including delaying or otherwise disrupting clinical trials, manufacturing and supply chain, and launch and commercialization efforts; our ability to achieve and maintain adequate levels of coverage and reimbursement for vonoprazan; the availability of additional funds under our revenue interest financing agreement and term loan agreement, the sufficiency of our capital to fund our operations, and other risks described in our filings with the Securities and Exchange Commission (SEC), including our Annual Report on Form 10-K and any subsequent filings with the SEC. You are cautioned to place undue reliance on these forward-looking statements, which speak only as of the date hereof, and we undertake no obligation to revise or update this presentation to reflect events or circumstances after the date hereof. All forward-looking statements are qualified in their entirety by this cautionary statement, which is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions, and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

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Going beyond

to advance treatments for patients with acid related disorders

Locations
HQ: Florham Park, NJ
Buffalo Grove, IL

Formed In 2019
Listed on NASDAQ: PHAT

FDA APPROVED PRODUCTS
Vonoprazan-based *H. pylori* regimens

VOQUEZNA TriplePak
vonoprazan tablets 20 mg | amoxicillin capsules 500 mg | clarithromycin tablets 500 mg

VOQUEZNA DualPak
vonoprazan tablets 20 mg | amoxicillin capsules 500 mg

Vonoprazan:

First innovative acid-suppressant from a new drug class in the US in over 30 years

Belongs to a novel class of therapies called PCABs (Potassium Competitive Acid Blockers)

Erosive esophagitis (EE) and *H. pylori* US launch targeted for 1Q 2023

- Potential to displace PPIs
- Large market opportunity
- NCE exclusivity until 2032 under GAIN Act Extension

US / Europe / Canada rights licensed from **Takeda**

Approved in **16 COUNTRIES** across Asia & Latin America

~$850M
Annual net sales in Japan. Achieving market leadership of 43% revenue-based market share[1]

[1] US dollars based on conversion rate of 0.0090 dollars to one yen. Sales for the twelve-months ended Dec. 31, 2021

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Commercial success of acid suppression treatments

ANTACIDS
Introduced in 1930s
TUMS, Alka-Seltzer, Rolaids
Marketed OTC

H2 ANTAGONISTS
Introduced in 1970s
Tagamet, Pepcid, Zantac
~$3.5b peak US sales

PPIs
First Introduced in 1989
PREVACID LANSOPRAZOLE, Prilosec, PROTONIX (pantoprazole sodium), Nexium esomeprazole, AcipHex
~$12.5B peak US sales

25 YEARS
No Innovation

PCAB
Introduced in Japan 2015
Takecab (vonoprazan)

>$850M annual net sales in Japan[1]

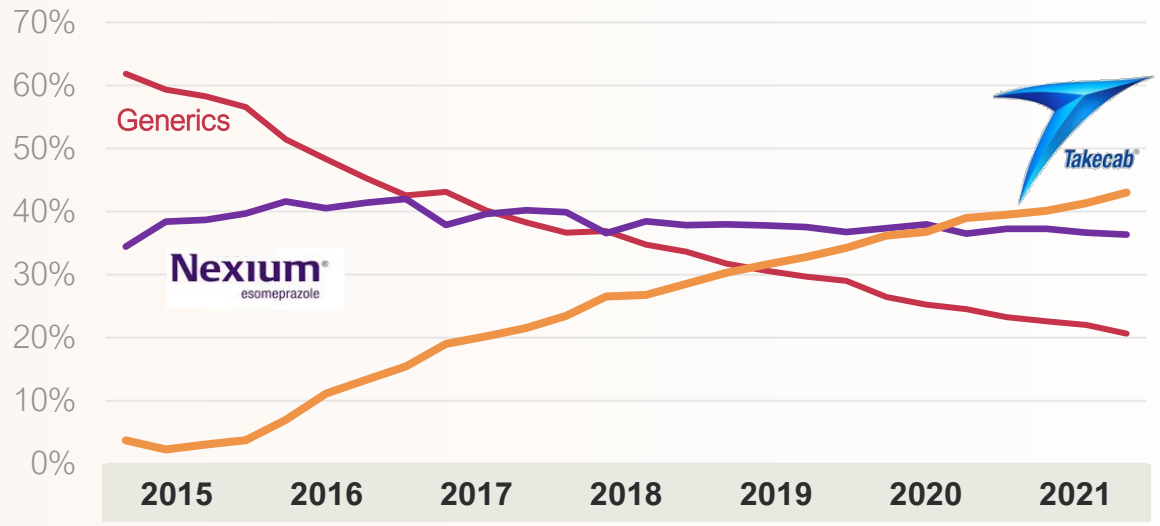
Vonoprazan has been highly successful in Japan

Driven predominantly by volumetric gains from generic competitors

Branded premium price

Majority of vonoprazan sales are in GERD

Japan Revenue-Based Market Share



[1] US dollars based on conversion rate of 0.0090 dollars to one yen. Sales for the twelve-months ended Dec. 31, 2021

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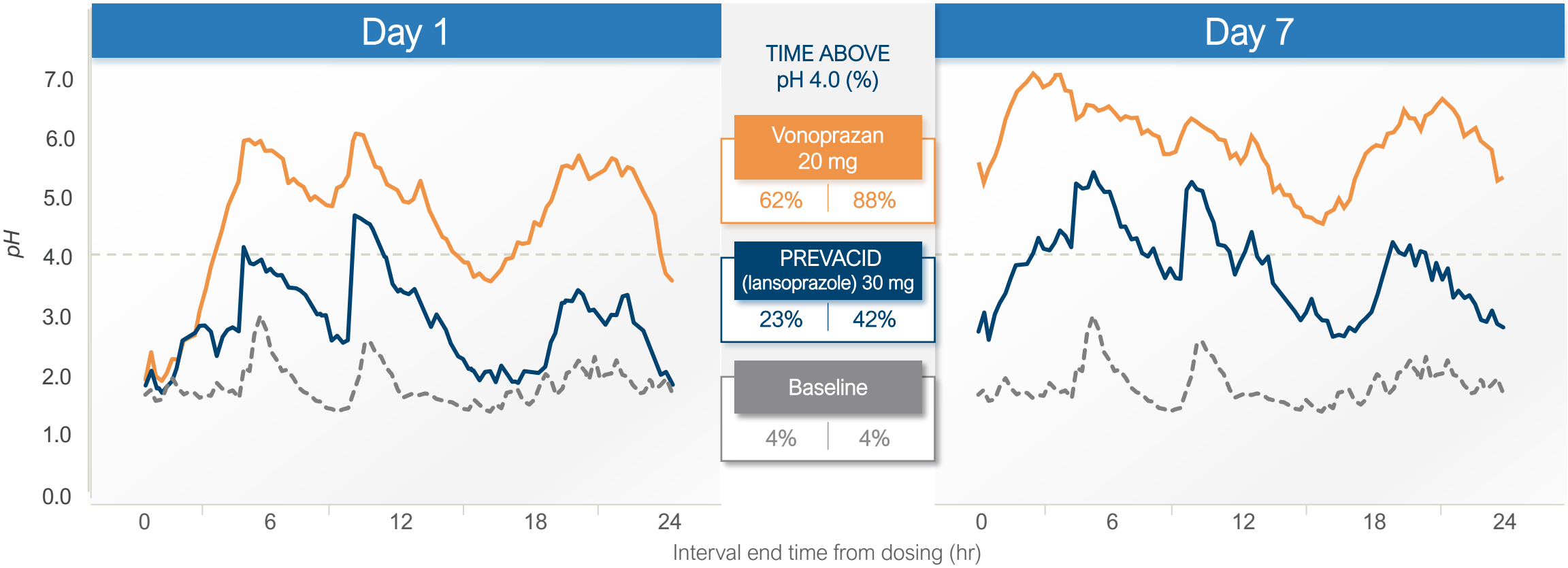
Vonoprazan demonstrated improved acid control versus PREVACID (lansoprazole)

RAPID, POTENT, DURABLE ACID SUPPRESSION*



Mean gastric pH profiles for vonoprazan were higher than PREVACID (lansoprazole) on both Days 1 and 7

*VONO-103: Mean 0-24 hour gastric pH profiles; study evaluating the PK, PD, safety and tolerability of vonoprazan in comparison to PREVACID (lansoprazole) in 41 healthy adult subjects

[1] Shah SC et al. Gastroenterology. 2021;160:1831–1841

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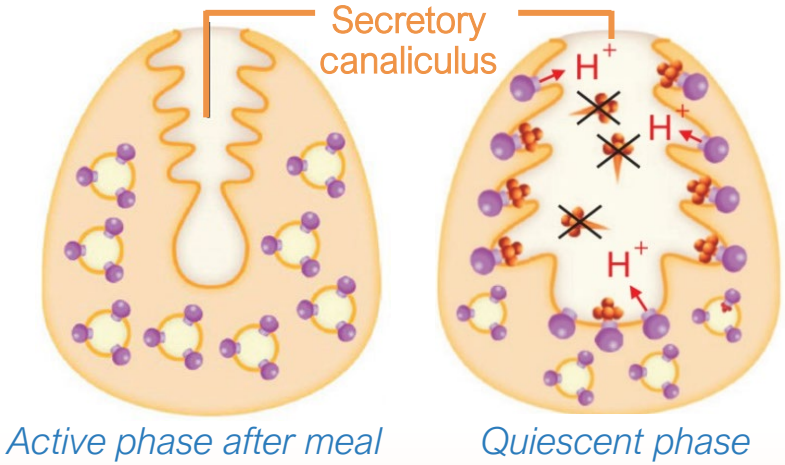
Mechanistic differences between PPIs and PCABs

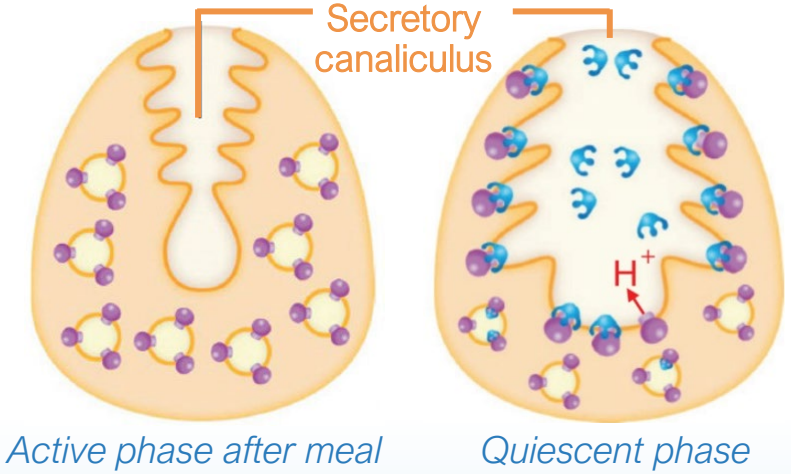
PPI:
COVALENTLY BINDING PRODRUG



- **Short** plasma half-life
- Acid needed for activation but **unstable** in presence of acid
- **Meal required** to stimulate pumps

- **Slow** onset of action
- **Limited** potency
- **Limited** duration of activity

Vonoprazan:
COMPETITIVE ENZYME INHIBITOR



- **Long** plasma half-life
- **Stable** in acid
- **High** accumulation in canaliculus
- **Very slow** dissociation rate

- **Rapid** onset of action
- **Potent** acid control
- **Durable** 24-hr activity

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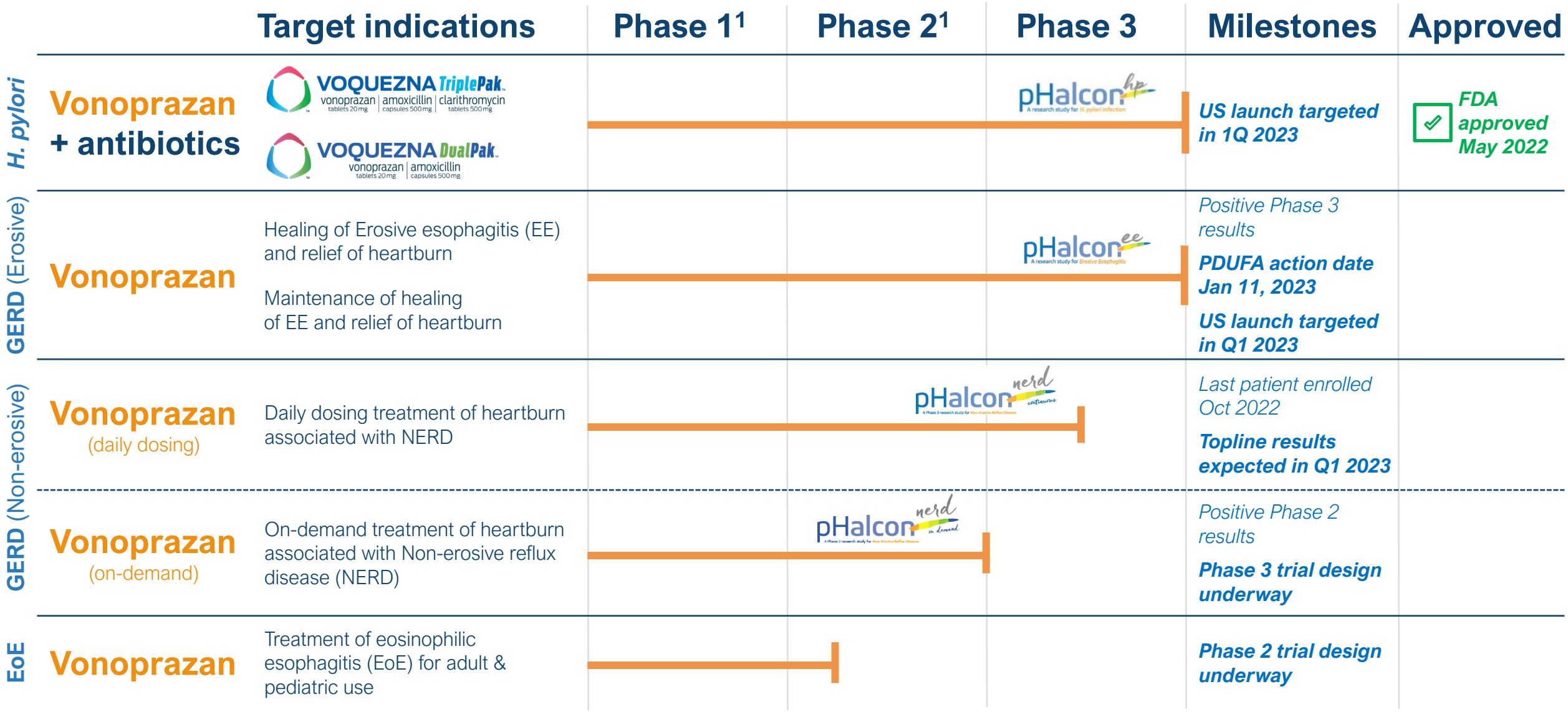
Phathom pipeline: promising late-stage opportunities for unmet GI needs



Phathom has development and commercialization rights to vonoprazan in the United States, Europe, and Canada

[1]Phase 1 and 2 studies supporting application for healing of Erosive Esophagitis, maintenance of healing of Erosive Esophagitis, and *H. pylori* treatment conducted by Takeda

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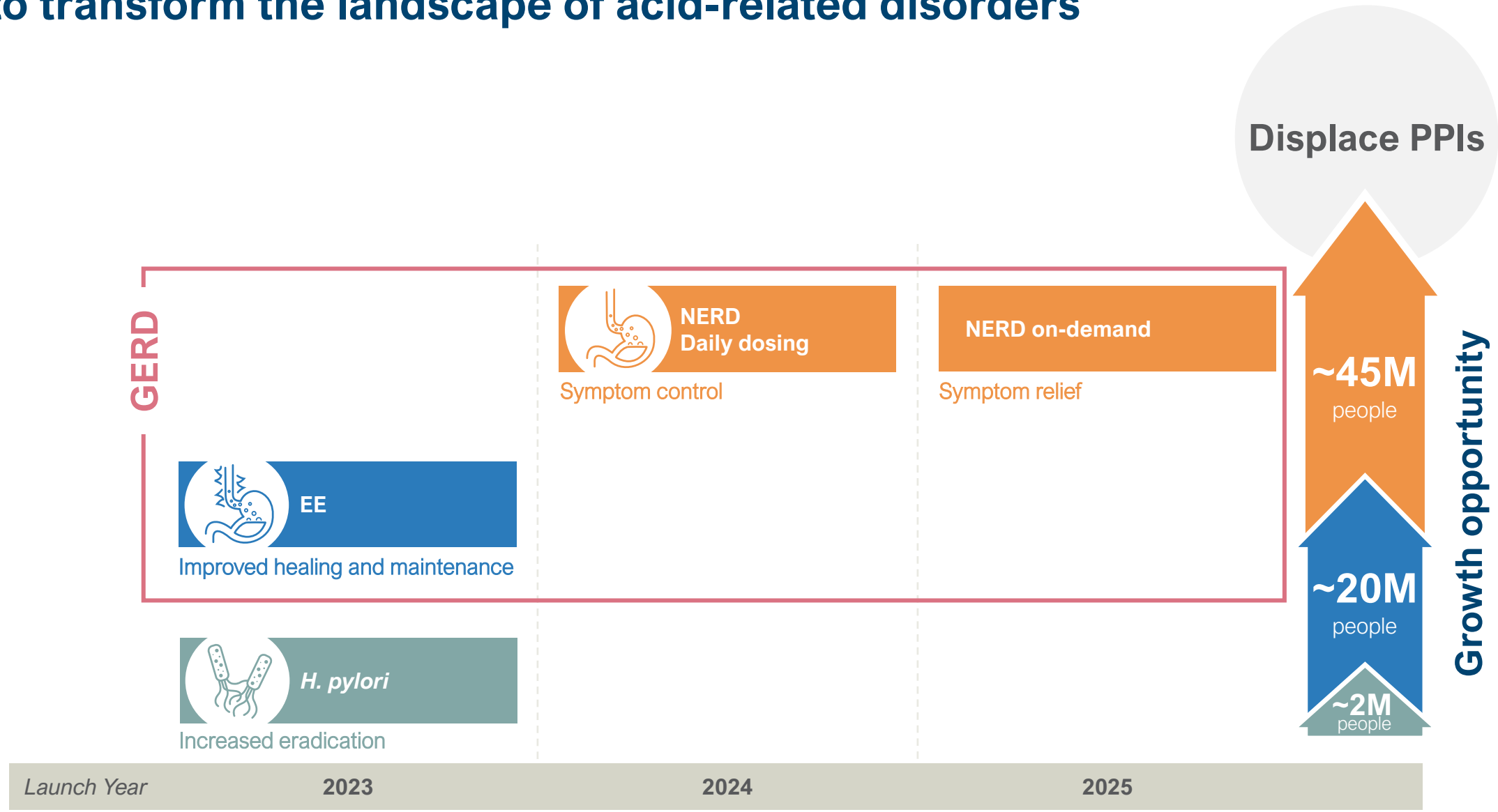
Vonoprazan vision builds on each indication with the potential to transform the landscape of acid-related disorders



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Superior efficacy results from PHALCON-EE phase 3 study

If approved, vonoprazan would be the first product with superiority data in maintenance of EE healing over a PPI, further differentiating the product from PPIs

PHALCON-EE outcomes support NDA submission with potential for <u>two</u> distinct indications

1. **Healing** of EE and relief of heartburn
2. **Maintenance** of EE healing and relief of heartburn

Superiority **data provides potential clinical differentiation from a commonly prescribed proton pump inhibitor (PPI)**

- ***Superior*** healing at 2 weeks in patients with moderate-to-severe disease[1,2]
- ***Superior*** maintenance of healing in all patients
- ***Superior*** maintenance of healing in patients with moderate-to-severe disease[2]

[1]Healing rate in all patients was also numerically greater at week 2 but could not be formally tested based on pre-specified testing hierarchy
[2]Moderate-to-severe EE classified as LA Class Grade C/D

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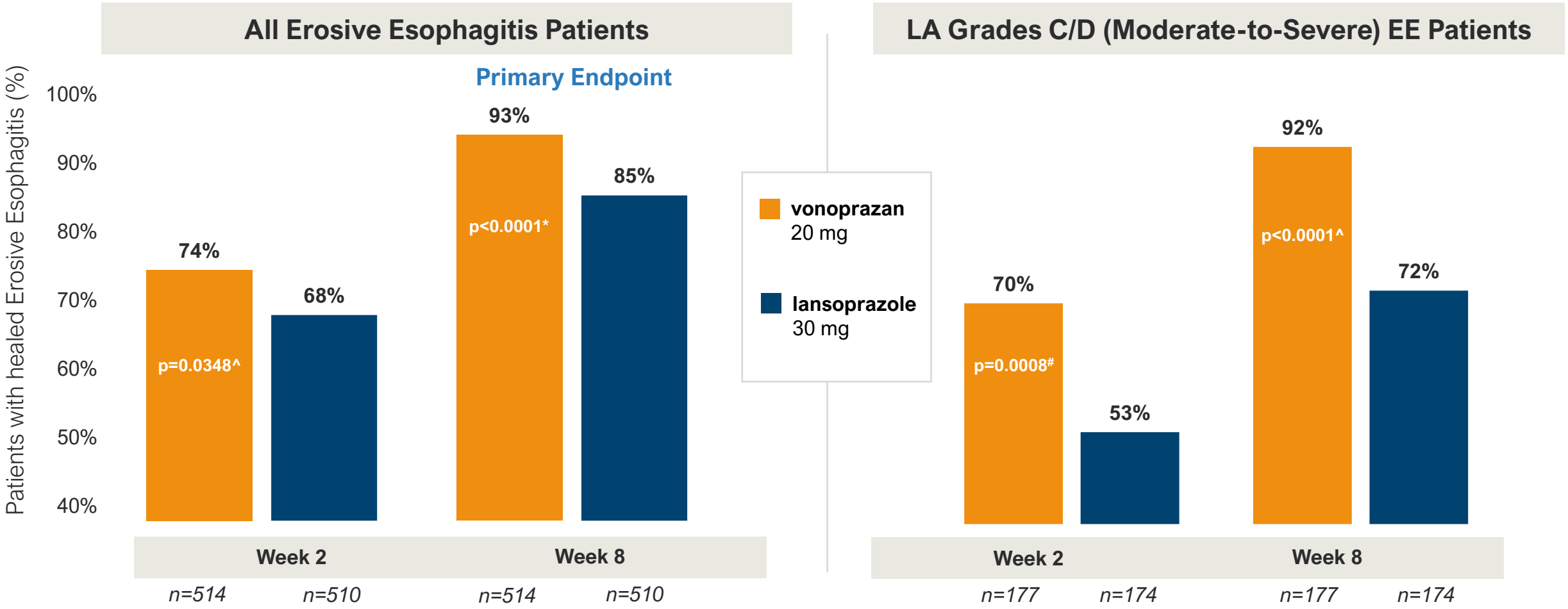
PHALCON-EE phase 3 met primary and key secondary healing endpoints



^nominal p-value presented, superiority comparison, not formally tested based on pre-specified testing hierarchy
*p-value for both primary non-inferiority endpoint and unadjusted p-value for exploratory superiority comparison
#p-value for pre-specified secondary endpoint superiority comparison

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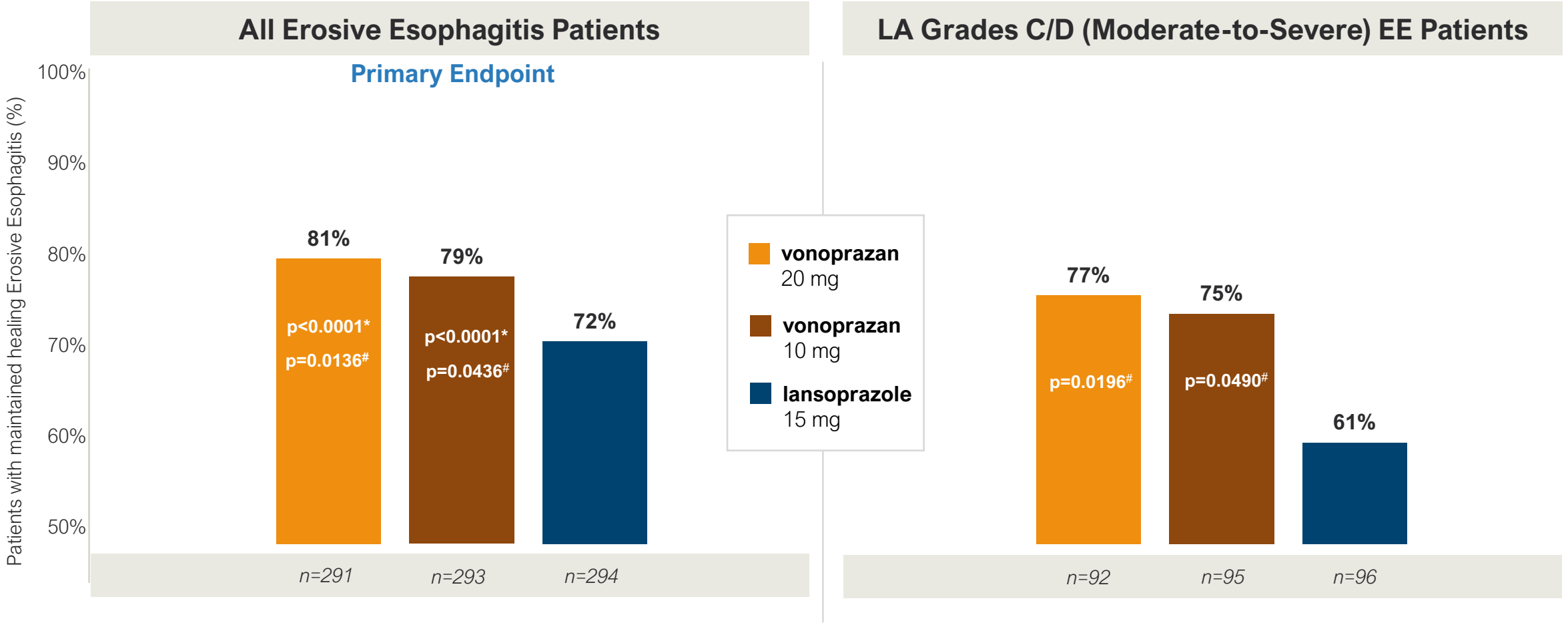
PHALCON-EE phase 3 met all maintenance of healing endpoints



*p-value for primary endpoint non-inferiority comparison
#p-value for pre-specified secondary endpoint superiority comparison

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Summary of PHALCON-EE phase 3 safety data

Overall, the safety results observed in PHALCON-EE were consistent with those observed in prior clinical studies of vonoprazan

Healing Phase

Most Common Adverse Events

% (n)	Vonoprazan 20 mg	Lansoprazole 30 mg
Diarrhea	2.1% (11)	2.5% (13)

Maintenance Phase

Most Common Adverse Events (≥ 5%)

% (n)	Vonoprazan 20 mg	Vonoprazan 10 mg	Lansoprazole 15 mg
Abdominal Pain	5.4% (16)	4.1% (12)	2.4% (7)
Gastritis	2.7% (8)	6.4% (19)	2.7% (8)
COVID-19	10.1% (30)	6.1% (18)	6.7% (20)

Both Phases

Serious Adverse Events (>1 patient)

	Vonoprazan 20 mg	Vonoprazan 10 mg	Lansoprazole 15 mg
COVID-19* (n)	5	2	0

*No COVID-19 SAEs were deemed related to the study drug by the investigator | Safety Set: All subjects who received at least one dose of study medication

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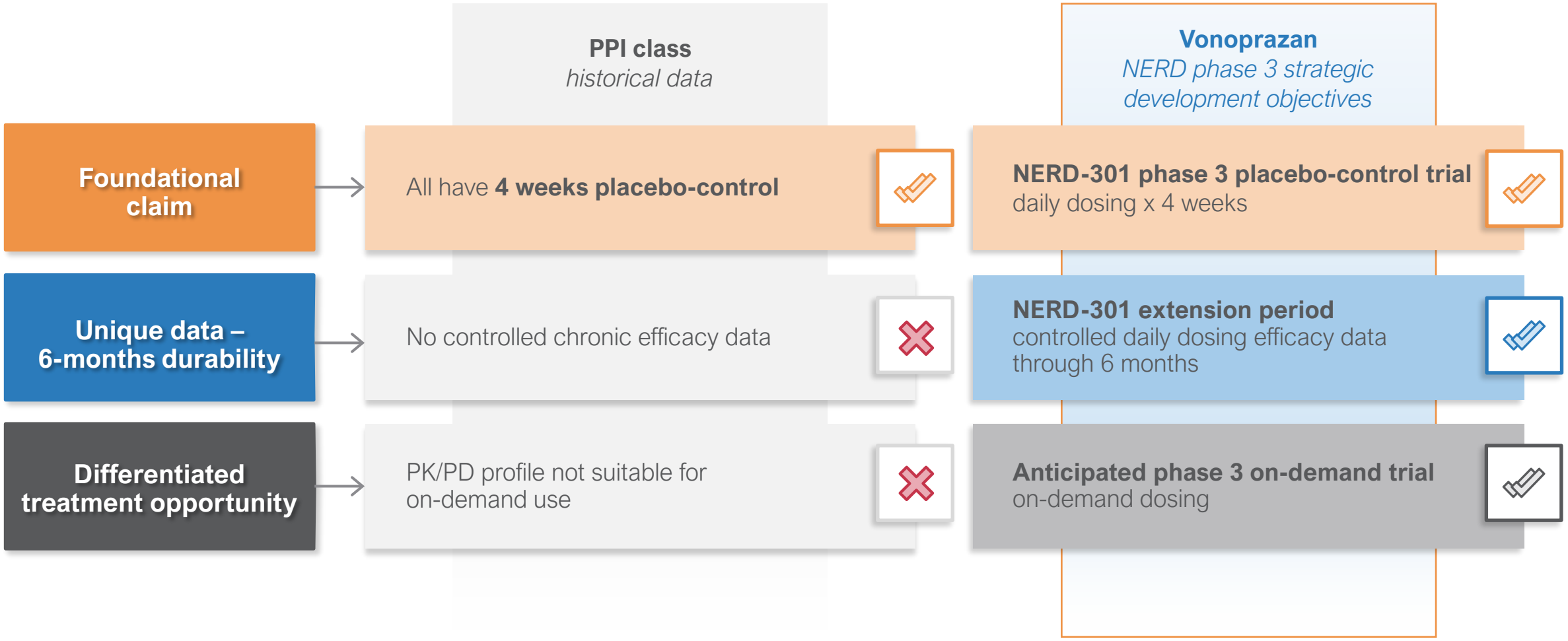
Unique development strategy for treatment of NERD



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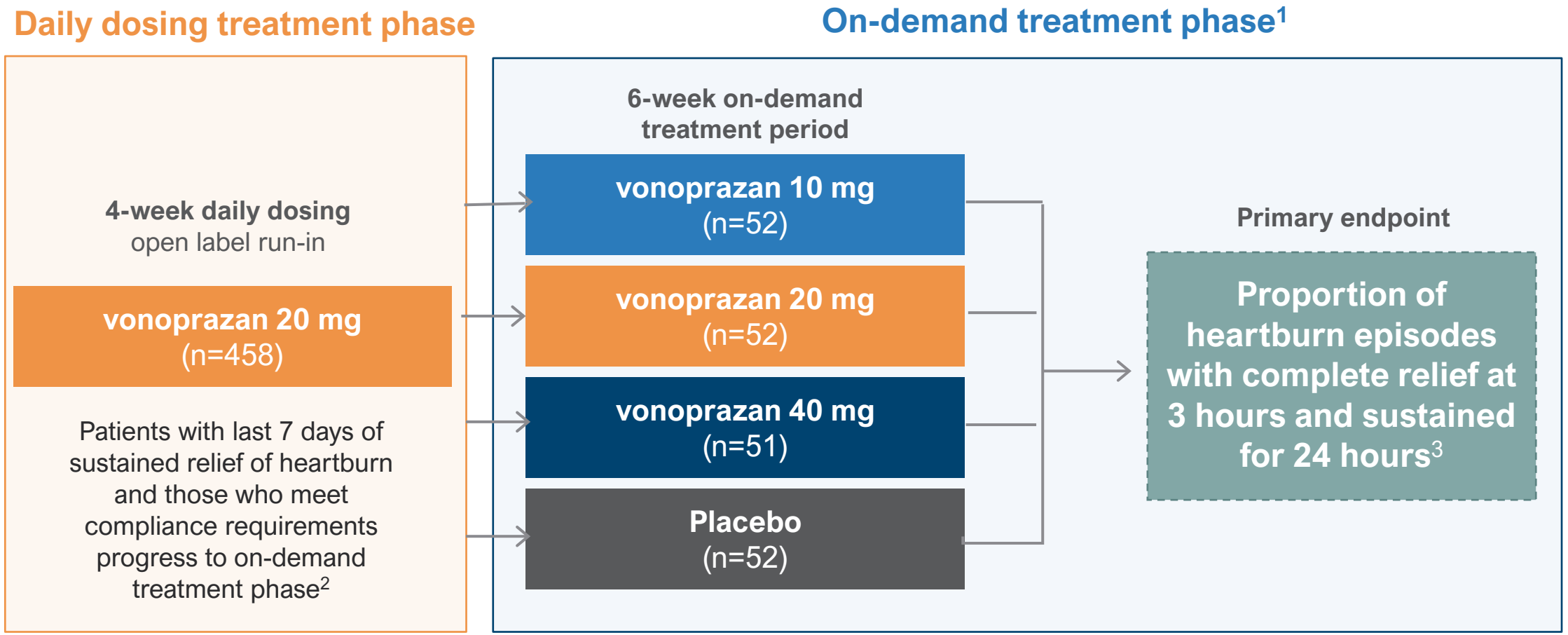
PHALCON-NERD-201 phase 2 trial design *(completed)*



[1] Dosing initiated at onset of a heartburn episode; rescue antacid medication allowed after 3 hours of taking test medication
[2] Patients must meet study drug and diary completion compliance requirements
[3] Primary endpoint for NERD phase 2 trial is complete heartburn relief at 3 hours that is sustained for 24 hours. Primary endpoint for phase 3 trial will be based on NERD phase 2 results and subsequent FDA discussions

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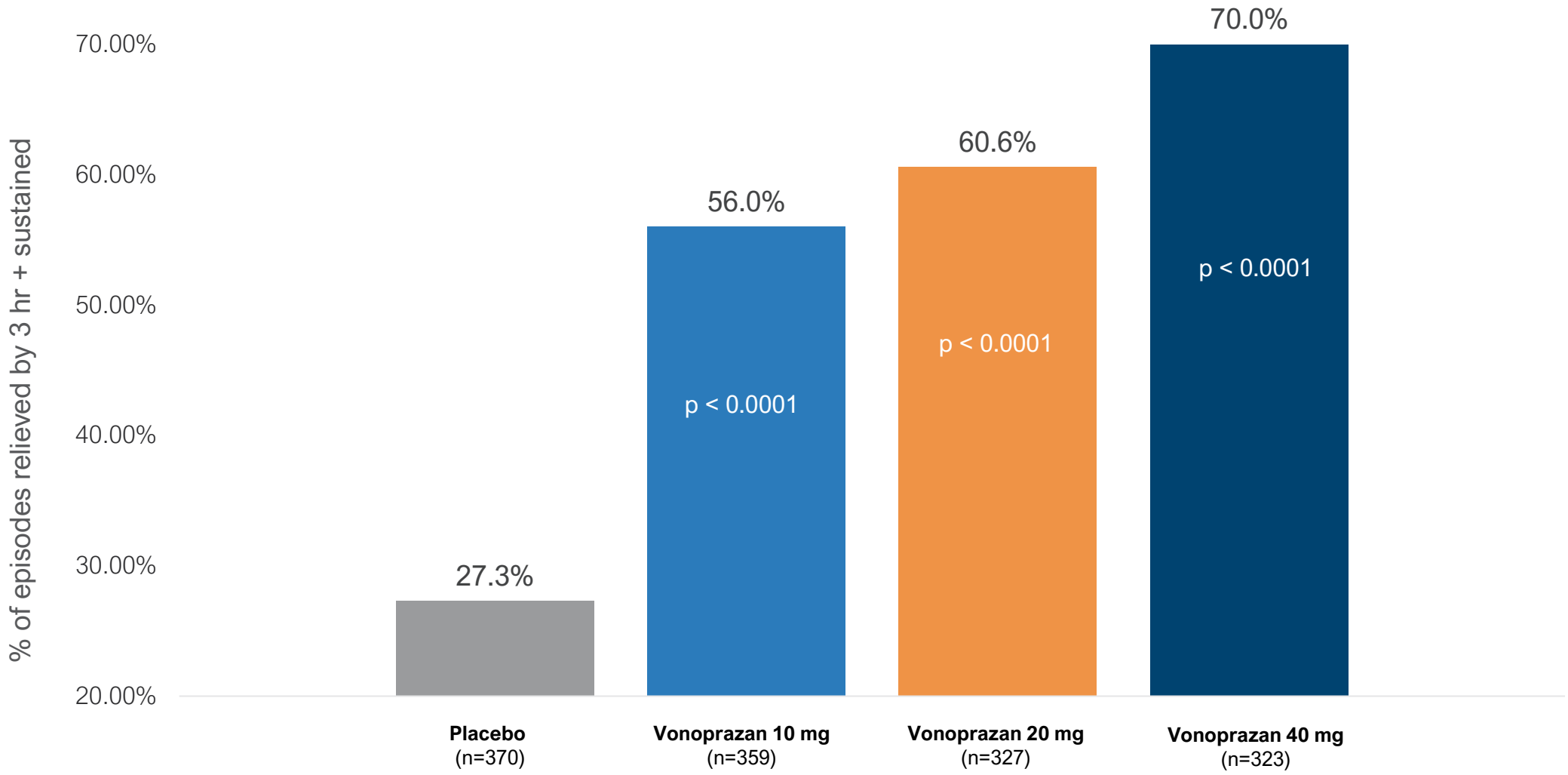
PHALCON-NERD-201 met the primary endpoint for all doses

% of evaluable episodes* with complete and sustained heartburn relief within 3 hours^



*Evaluable episode = heartburn episode for which subject completes a minimum of one timed assessment

^Complete relief: Full symptom relief with no rescue antacid taken (must be achieved within 3 hours of study drug); Sustained relief: No further episodes recorded within following 24 hours

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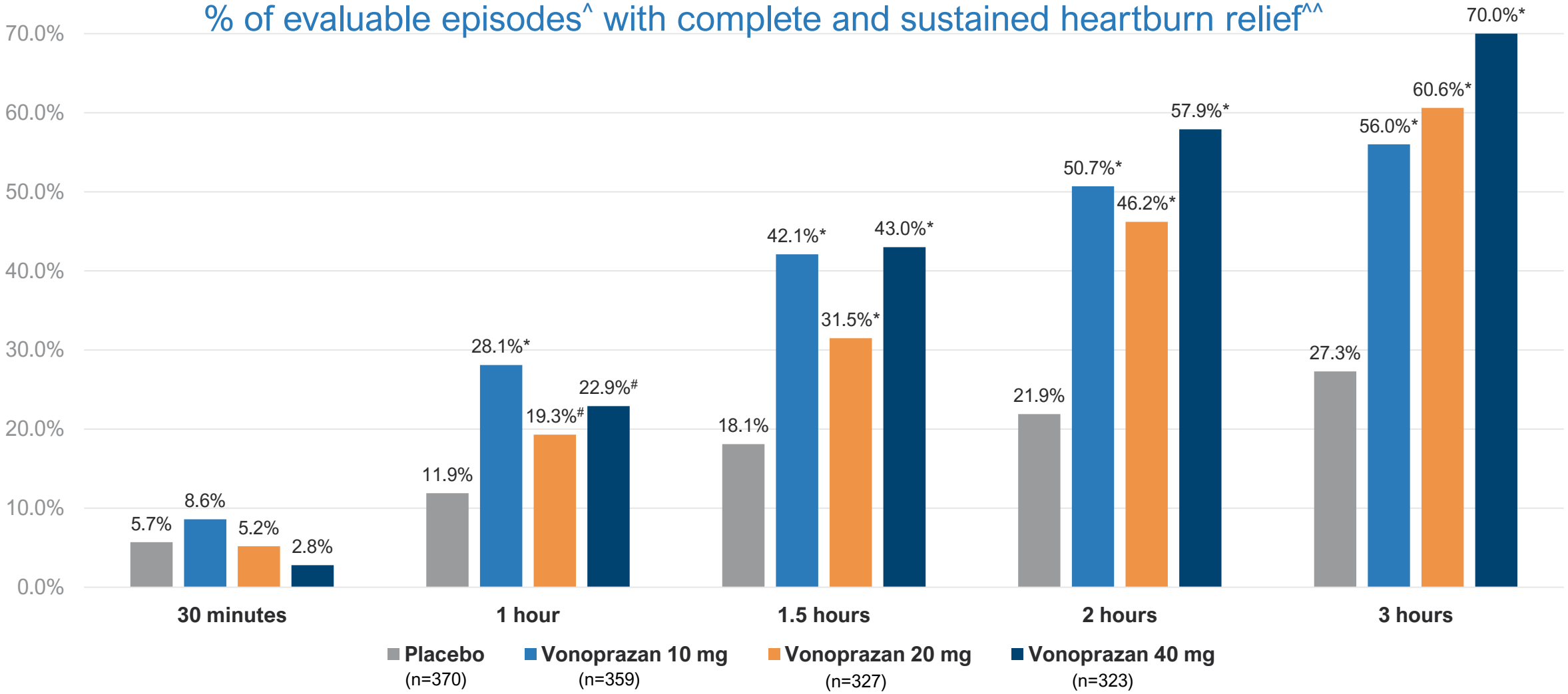
Each vonoprazan dose significantly separated from placebo by 1 hour in PHALCON-NERD-201



*denotes p < 0.0001 statistically significant difference from placebo
#denotes p < 0.01 statistically significant difference from placebo
^Evaluable episode = heartburn episode for which subject completes a minimum of one timed assessment
^^Complete relief: Full symptom relief with no rescue antacid taken (must be achieved within 3 hours of study drug); Sustained relief: No further episodes recorded within following 24 hours

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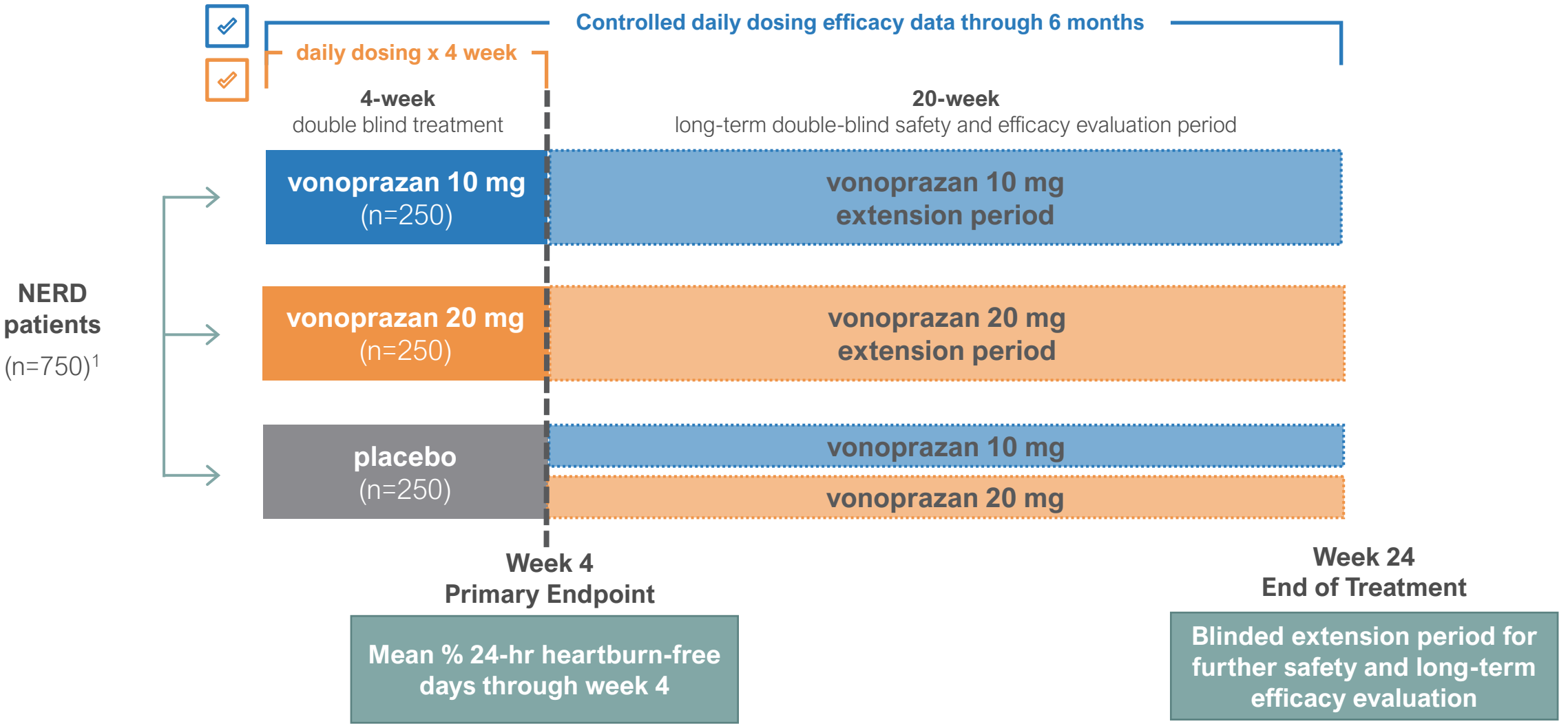
PHALCON-NERD-301 phase 3 daily dosing trial design

Topline primary endpoint data expected in 1Q 2023



[1] A total of 776 patients with symptomatic NERD were ultimately enrolled in the trial.

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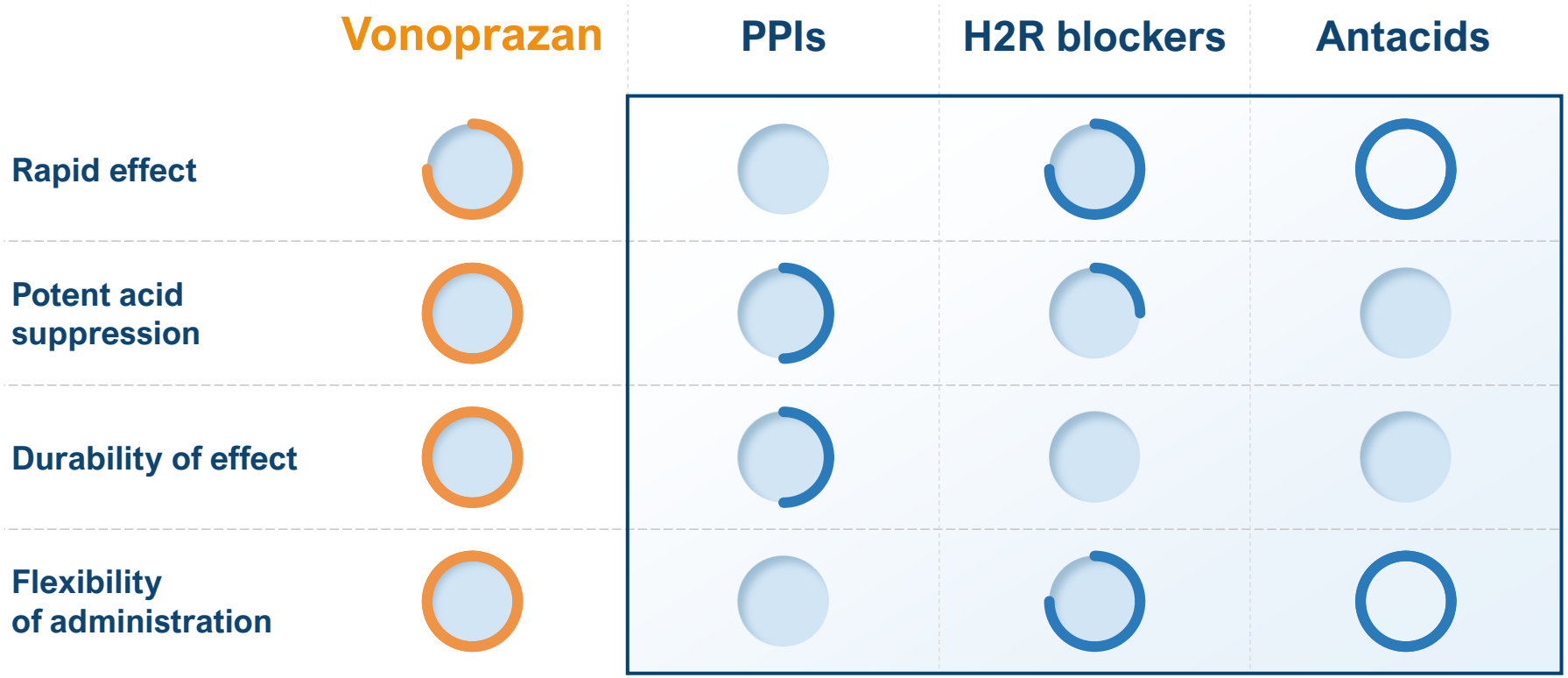
We believe vonoprazan's pharmacologic profile is well-suited for both NERD daily and on-demand dosing



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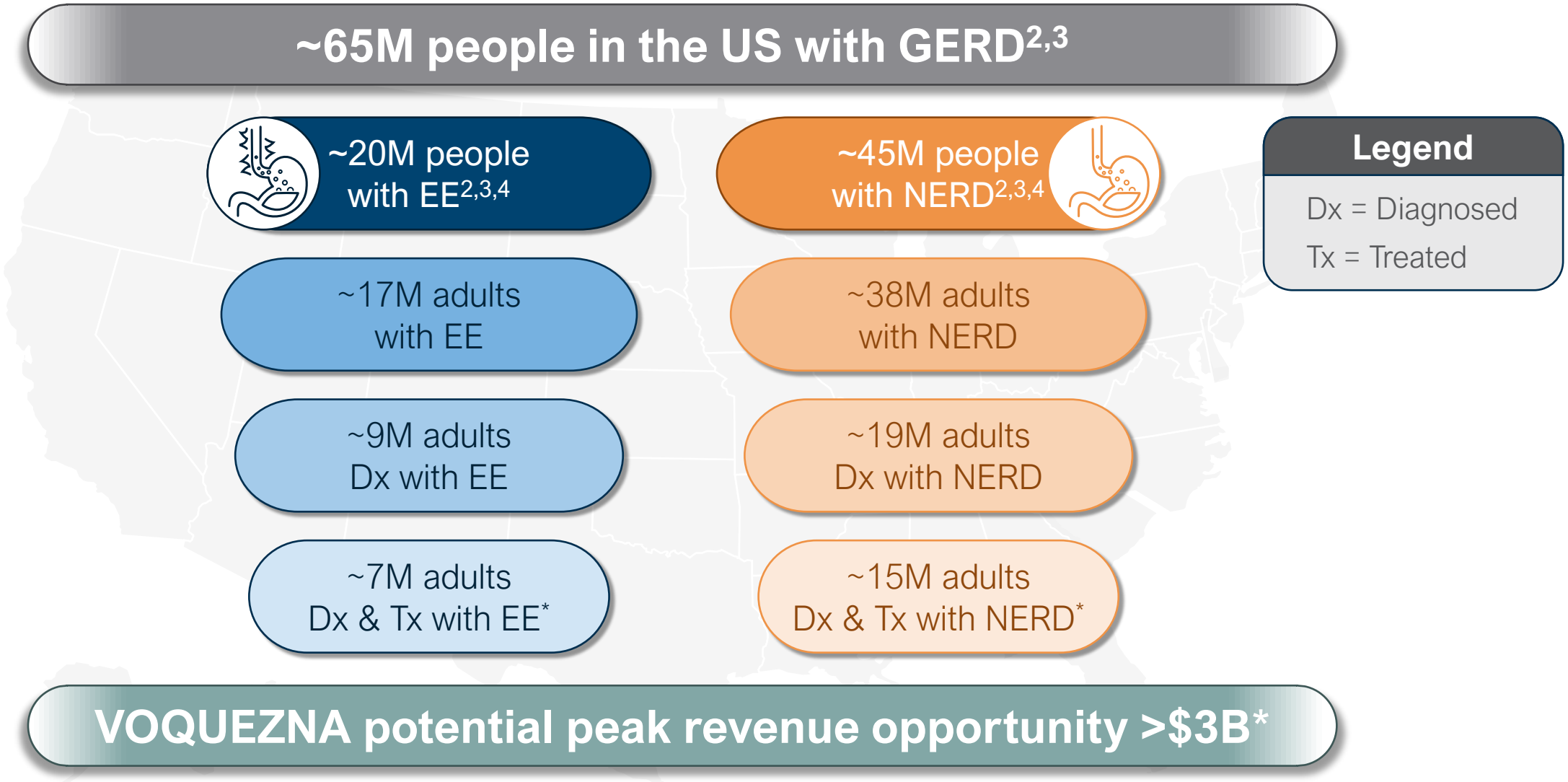
GERD represents a large U.S. market with high unmet need



[1] Vaezi MF, Brunton S, Mark Fendrick A, et al. Patient journey in erosive esophagitis: real-world perspectives from US physicians and patients. BMJ Open Gastroenterology 2022;9:e000941. doi: 10.1136/bmjgast-2022-000941
[2] El-Serag HB, Sweet S, Winchester CC, Dent J. Update on the epidemiology of gastro-oesophageal reflux disease: a systematic review. Gut. 2014;63(6):871-880. doi:10.1136/gutjnl-2012-304269
[3] Machicado J.D., Greer J.B., Yadav D. (2020) Epidemiology of Gastrointestinal Diseases. In: Pitchumoni C., Dharmarajan T. (eds) Geriatric Gastroenterology. Springer, Cham. https://doi.org/10.1007/978-3-319-90761-1_7-1
[4] U.S. Census Bureau. U.S. and World Population Clock. Accessed May 2022. https://www.census.gov/popclock.

* Based on Phathom market research.

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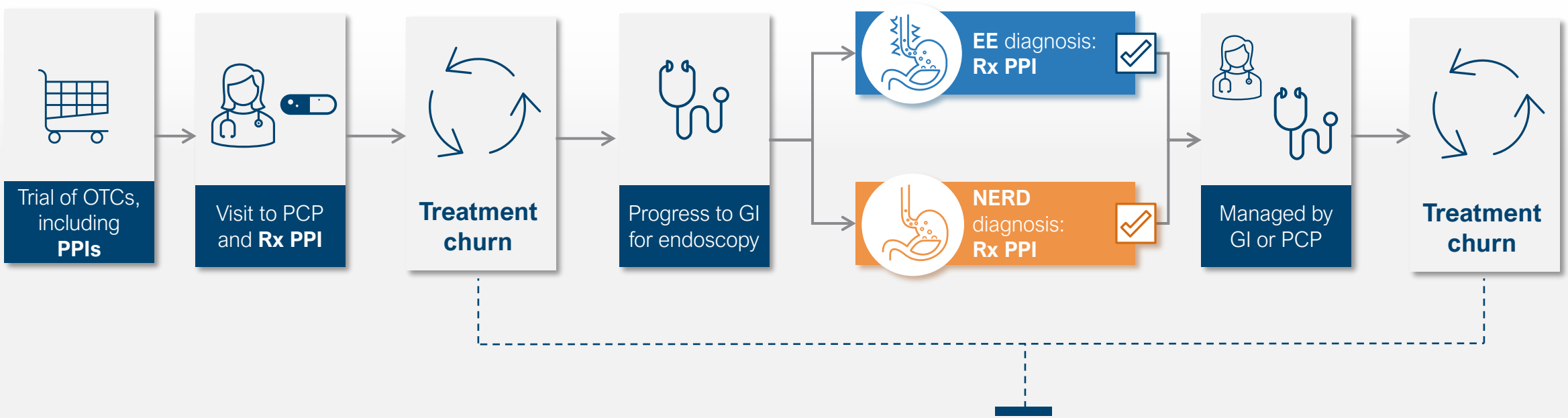
Typical GERD patient journey highlights current dissatisfaction

EE & NERD patient journeys are similar; both include multiple lines of PPI therapy



~50% of patients progress line of therapy[1]

NERD development strategy designed to address patient unmet needs throughout journey

* Visual a summary of patient journey qualitative market research, May 2020
[1]Symphony APLD claims analysis

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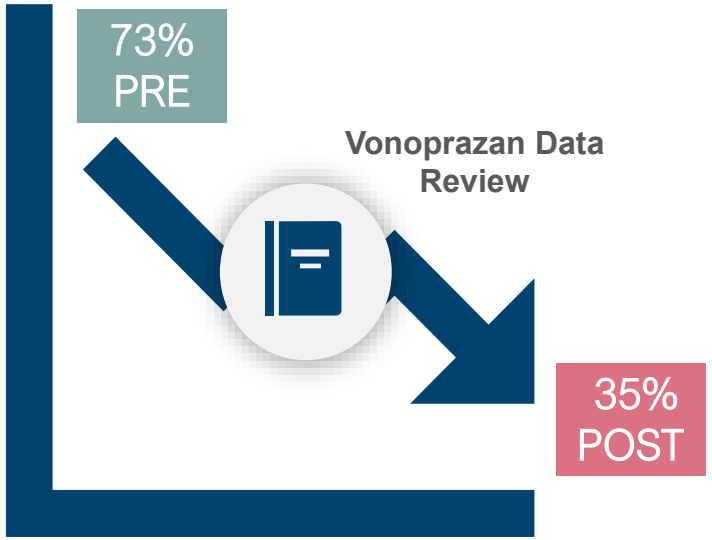
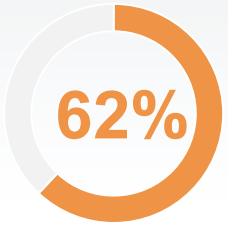
HCPs see vonoprazan as differentiated from PPIs

HCP's perception of PPI potency falls drastically after seeing vonoprazan clinical data

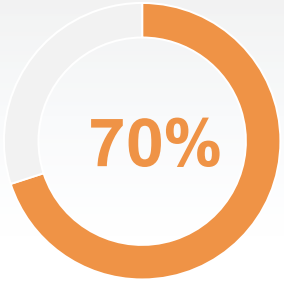
% of HCPs that "strongly agree" PPIs are the most potent acid suppressing agent [2]



HCPs agree vonoprazan is differentiated vs. existing treatments by having…[1]



superiority in healing of EE erosions among moderate-to-severe patients



a different **MOA**

Superior efficacy in maintenance of healed esophageal erosions

[1] EE Demand Study / Jan 2022 / n=301 (151 GI; 100 PCP; 50 APP)
[2] HP Messaging / November 2021 / n=222 (111 GI; 83 PCP; 28 APP)

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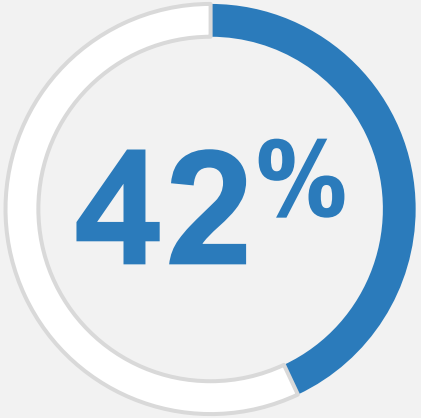
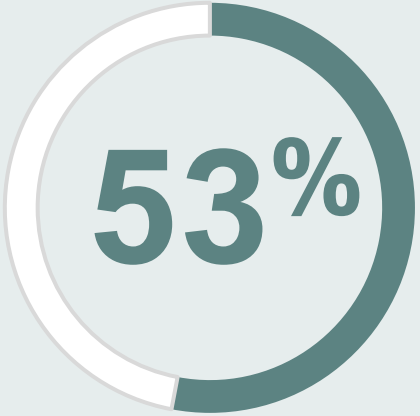
Physician research indicates high intention to prescribe vonoprazan

Erosive Esophagitis



HCPs expect to prescribe vonoprazan to 42% of their EE patients[1]

H. pylori infection



HCPs expect to prescribe vonoprazan to 53% of their HP patients[2]

[1]EE Demand Study / Jan 2022 / n=301 (151 GI; 100 PCP; 50 APP)
[2]HP Demand Study / July 2021 / n=242 (100 GI; 102 PCP; 40 APP)

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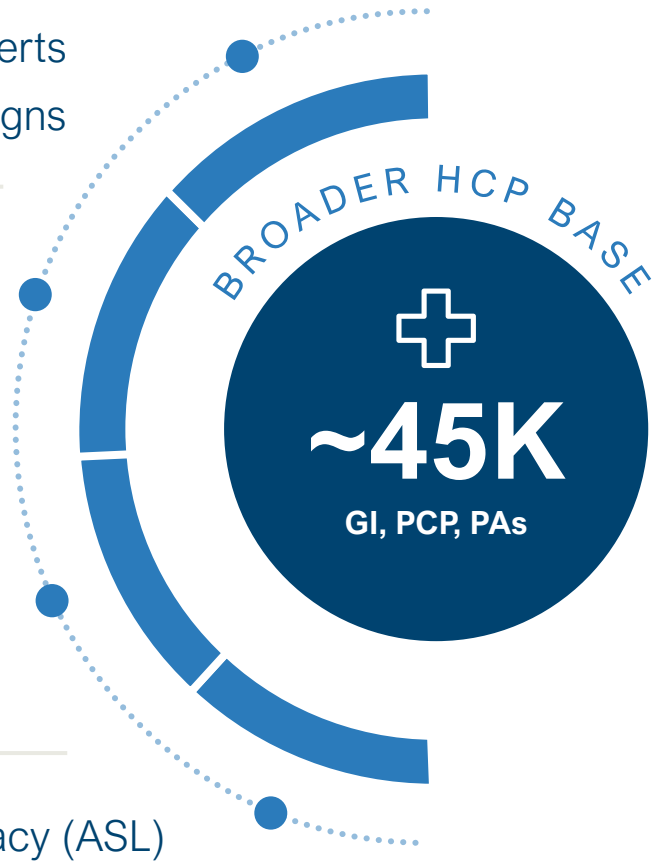
High volume HCPs to be reached by salesforce coupled with broad and aggressive communication campaign

Digital promotion
Mobile alerts
Targeted marketing campaigns

Patient reimbursement assistance
Co-pay cards

Scientific education
Scientific publications & literature
Medical meetings

Cloud pharmacy (ASL)



Source: Internal analysis of IQVIA Xponent Retail PPI Rx data (2020) in conjunction with Symphony Health claims analysis (2017-2019)

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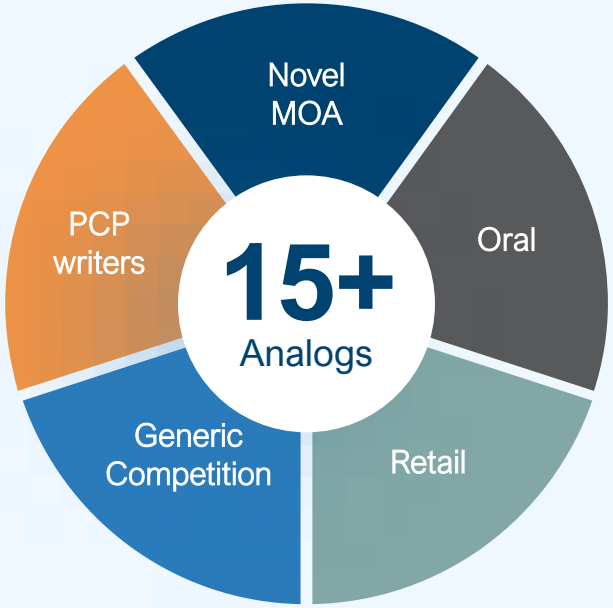
Vonoprazan access and pricing strategy intended to achieve broad access



Payer Input

PBM
NATIONAL
REGIONAL

Vonoprazan
PRICE POTENTIAL

- Differentiated MOA
- Superiority vs. standard of care
- High switch market

Superiority data + Price based on value + Discount for placement = **ACCESS**

VOQUEZNA Pak/HP price
$812 (14 days therapy inclusive of antibiotics)[1]

[1] Vonoprazan is taken BID during the 14 day regimen (i.e., 28 vonoprazan pills per therapy).

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Significant opportunity and attractive commercial dynamics exist for blockbuster potential

Large Unmet Needs

Large population & high level of dissatisfaction

Differentiated Profile

Novel MOA & clinical differentiation

Physician Attractiveness

Strong physician interest & concentrated high prescribers

No Branded Competition

No branded competition & share of voice ownership

H. pylori & Erosive Esophagitis U.S. launch targeted for Q1 2023

RAPID

POTENT

DURABLE

Displace PPIs to become the #1 prescribed acid suppressant

[1] Important Safety Information and the full Prescribing Information available at http://www.phathompharma.com/wp-content/uploads/VOQUEZNA-TRIPLE-PAK-and-VOQUEZNA-DUAL-PAK-FDA-Final-Label-3.pdf

Phathom PHARMACEUTICALS

Financial highlights (as of September 30, 2022)

$196.8M
cash and cash equivalents

Up to **$200M** remaining in royalty financing[1]
+
$100M available via term loan[2]

~42M shares
outstanding

Cash, cash equivalents, and other anticipated capital expected to provide
runway through 2024
including full funding of the *H. pylori* and Erosive Esophagitis launches, and future anticipated development programs[3]

[1] The total royalty interest financing agreement accounts for up to $300M. Phathom recently announced placement of the remaining $40M under the terms set forth in the original agreement. To date, Phathom has received $100M under the royalty interest financing agreement which is included in cash and cash equivalents.
[2] All tranche terms have been satisfied, allowing Phathom to draw down remaining funds strategically, at any time.
[3] Assumes satisfaction of all royalty financing terms, full drawdown under remaining term loan, and anticipated future product sales, pursuant to management operating plan.

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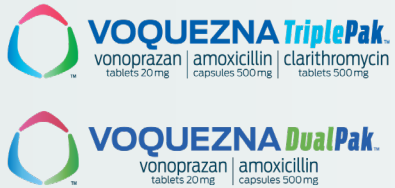
Expected near-term milestones

	Target indications	2022	2023
H. pylori	**Vonoprazan + antibiotics** 	Approved	Planned 1Q 2023 US launch
GERD (Erosive)	**Vonoprazan**	Healing of Erosive esophagitis (EE) and relief of heartburn Maintenance of healing of EE and relief of heartburn	NDA submission	**PDUFA Date: January 11, 2023** **Planned 1Q 2023 US launch**
GERD (Non-erosive)	**Vonoprazan** (daily dosing)	Daily dosing treatment of heartburn associated with NERD	Positive **topline Ph 2 results** for NERD on-demand trial	**Topline primary endpoint results** from Ph 3 NERD daily dosing trial 1Q 2023 NERD **daily dosing sNDA submission 2H 2023**
GERD (Non-erosive)	**Vonoprazan** (on-demand)	On-demand treatment of heartburn associated with Non-erosive reflux disease (NERD)		
EoE	**Vonoprazan**	Treatment of eosinophilic esophagitis (EoE) for adult & pediatric use	Ongoing **Ph 2 design**	**Planned trial initiation 2H 2023**

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[1]Phase 1 and 2 studies supporting application for healing of Erosive Esophagitis, maintenance of healing of Erosive Esophagitis, and *H. pylori* treatment conducted by Takeda

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Appendix: **Phathom's Clinical Trial Results**

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pHalcon-HP

Phase 3 trial for *H. pylori* infection

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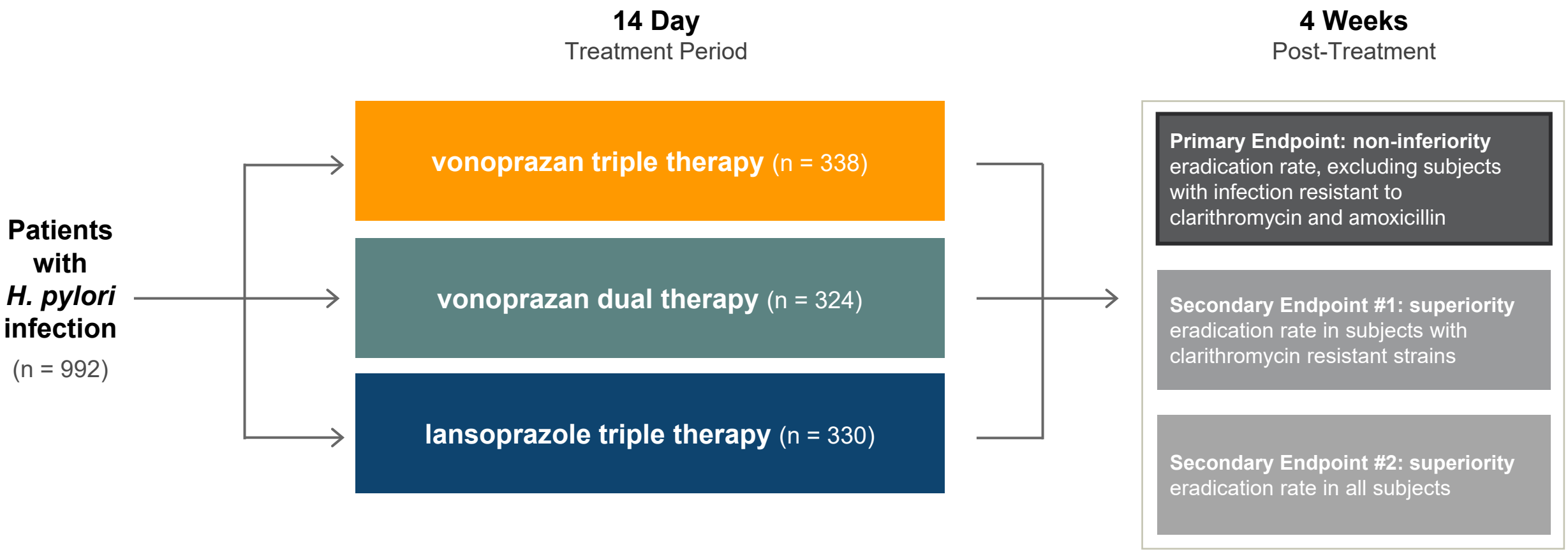
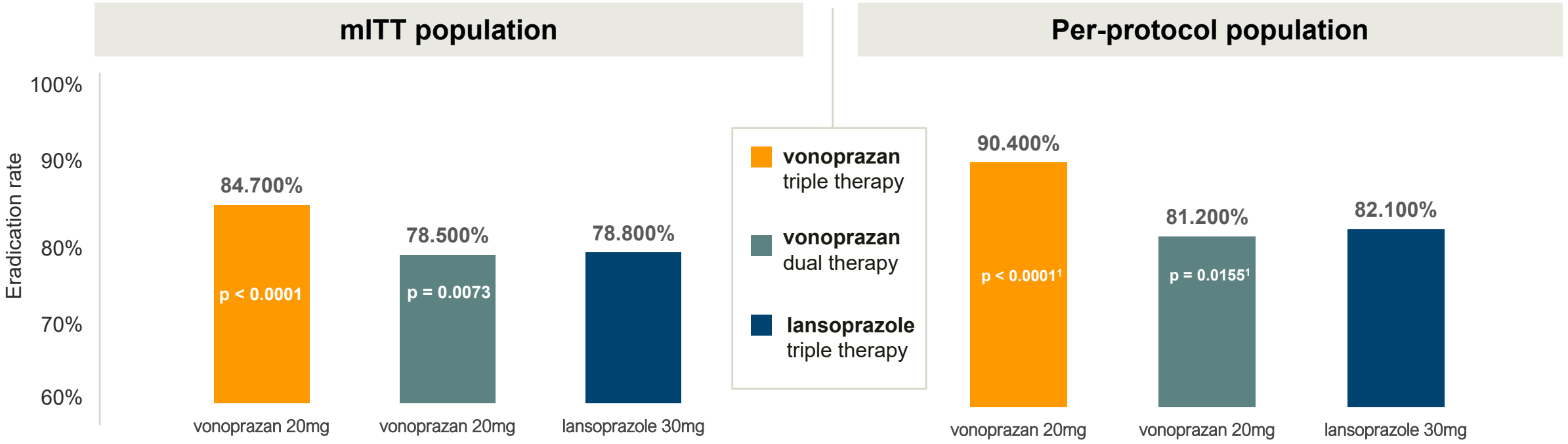
pHalcon-HP phase 3 study design



Diagnosis of infection and test of cure confirmed by 13C-urea breath test
Vonoprazan dual therapy = vonoprazan 20 mg BID + amoxicillin 1 g TID
Vonoprazan triple therapy = vonoprazan 20 mg BID + amoxicillin 1 g BID + clarithromycin 500 mg BID
Lansoprazole triple therapy = lansoprazole 30 mg BID + amoxicillin 1 g BID + clarithromycin 500 mg BID

PHALCON-HP met primary endpoints

Eradication rates (%) among patients without clarithromycin- or amoxicillin-resistant strains



[1] Not adjusted for multiple comparisons

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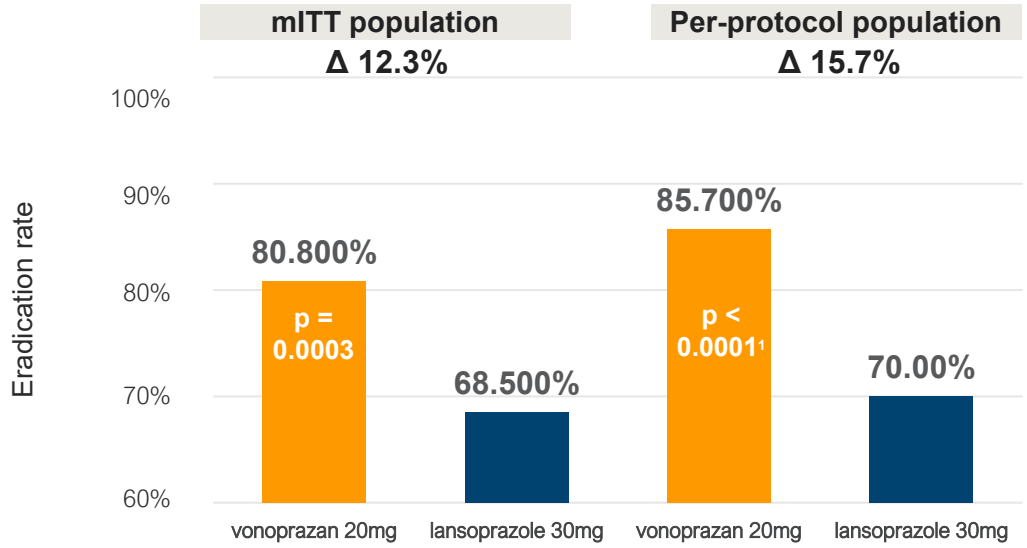
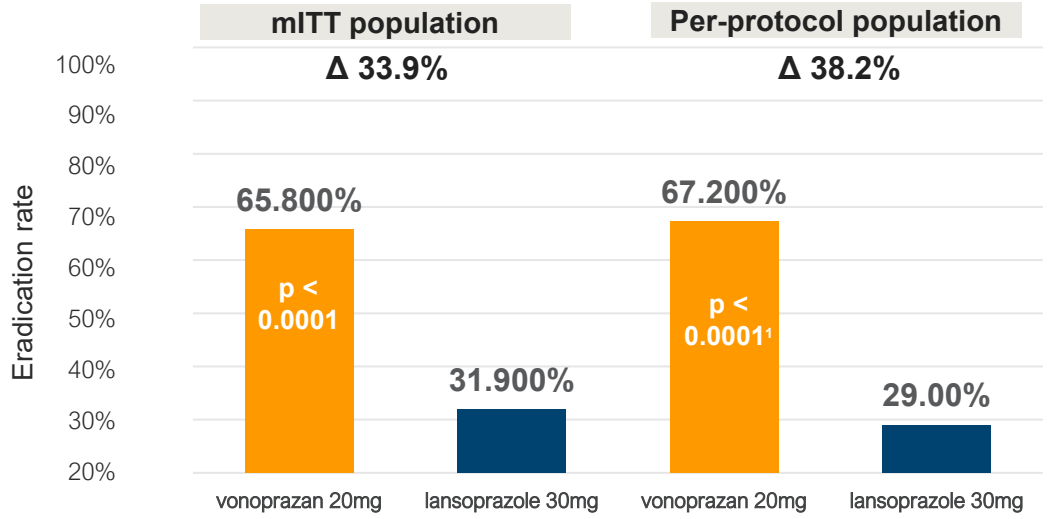
Both vonoprazan-based therapies met superiority for secondary endpoints

Vonoprazan triple therapy

all subjects

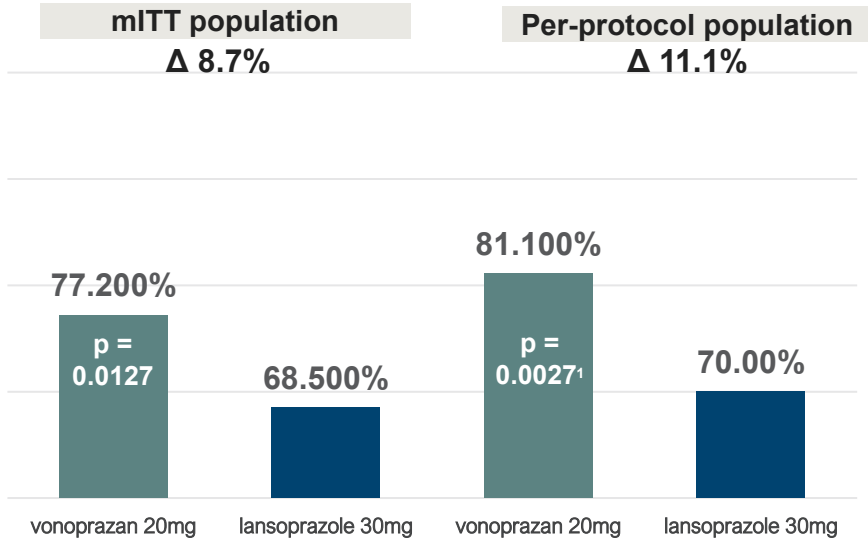


subjects with clarithromycin resistant strains

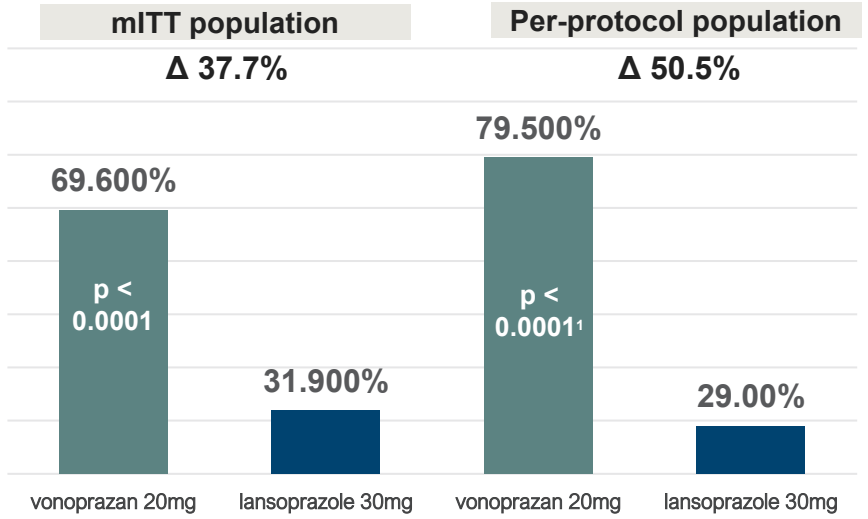


Vonoprazan dual therapy

all subjects



subjects with clarithromycin resistant strains



[1] Not adjusted for multiple comparisons

Safety profile

vonoprazan-based regimens generally well tolerated; comparable to lansoprazole triple therapy

Most frequent (>2.0%) adverse events in pHalcon-HP subjects

% (n) with adverse event	Vonoprazan triple therapy (n=346)	Vonoprazan dual therapy (n=348)	Lansoprazole triple therapy (n=345)
Diarrhea	4.0% (14)	5.2% (18)	9.6% (33)
Nausea	1.7% (6)	1.7% (6)	2.6% (9)
Dysgeusia	4.3% (15)	0.6% (2)	6.1% (21)
Headache	2.6% (9)	1.4% (5)	1.4% (5)
Vaginal infection	2.3% (8)	0.9% (3)	0.3% (1)

Safety Set: All subjects who received at least one dose of study medication

pHalcon-EE

Phase 3 trial for Erosive Esophagitis (EE)

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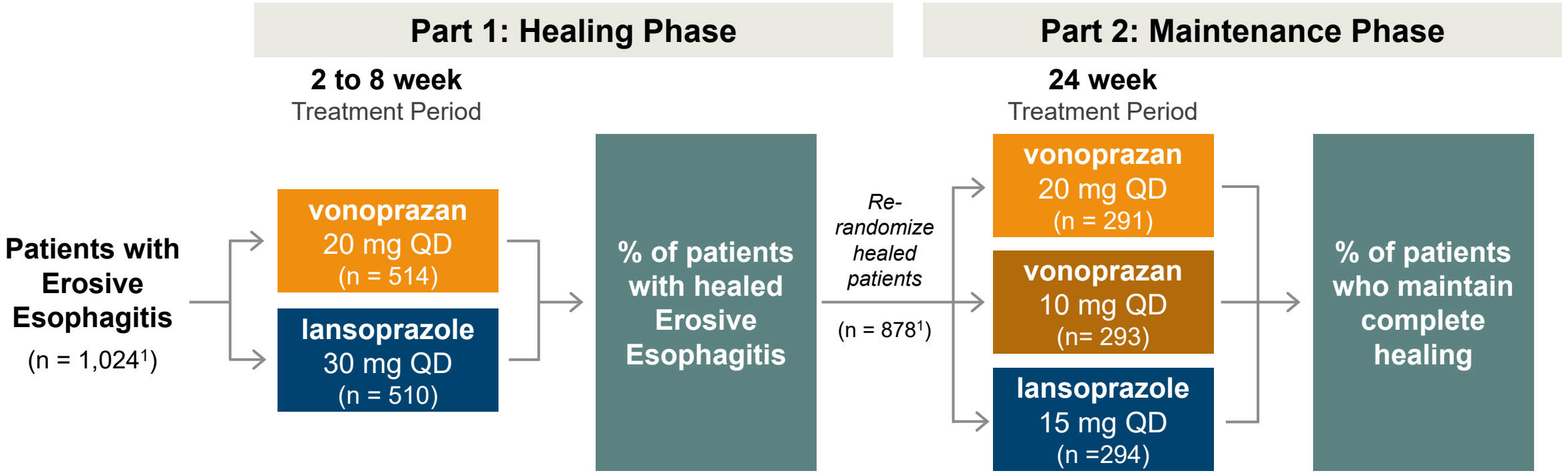
PHALCON-EE phase 3 study design

US/Europe study in Erosive Esophagitis



[1] Represents modified intent to treat (mITT) population

PHALCON-EE phase 3 met primary and key secondary endpoints

Healing Phase

	Vonoprazan 20mg
☆ *Noninferiority:* % of subjects with complete healing of EE by Week 8	p<0.0001*
Noninferiority: % of 24-hour heartburn-free days over the Healing Period	95%CI: (-1.60,7.03)
Superiority: % of Grades C/D subjects who have healing at Week 2	p=0.0008
Superiority: % of subjects with onset of sustained resolution of heartburn by Day 3	p=0.4392
Superiority: % of Grades C/D subjects who have healing by Week 8	*not tested in hierarchy* p<0.0001 (nominal)
Superiority: % of subjects (All Grades) who have healing at Week 2	*not tested in hierarchy* p=0.0348 (nominal)

Maintenance Phase

	Vonoprazan 20mg	Vonoprazan 10mg
☆ *Noninferiority:* % of subjects who maintained healing through Week 24	p<0.0001^	p<0.0001^
Superiority: % Grades C/D maintain healing through Week 24	p=0.0196	p=0.0490
Superiority: % all Grades maintain healing through Week 24	p=0.0136	p=0.0436
Noninferiority % of 24-hour heartburn-free days through Week 24	95%CI: (-2.63, 6.72)	95%CI: (-2.27, 6.84)

☆ Denotes primary endpoints tested for noninferiority; endpoints were also tested for superiority

*Healing phase primary endpoint, exploratory superiority comparison, nominal p<0.0001
^Maintenance phase primary endpoint, prespecified secondary superiority comparison: vonoprazan 20 mg: p=0.0136; vonoprazan 10 mg p=0.0436
#Sustained resolution of heartburn is defined as seven (7) consecutive days without heartburn symptoms. For this test to be satisfied a patient must commence the seven consecutive day period on either day 1, 2 or 3 and last, respectively, up to day 7, day 8 or day 9.

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pHalcon-NERD-201

Phase 2 trial for non-erosive reflux disease (NERD)

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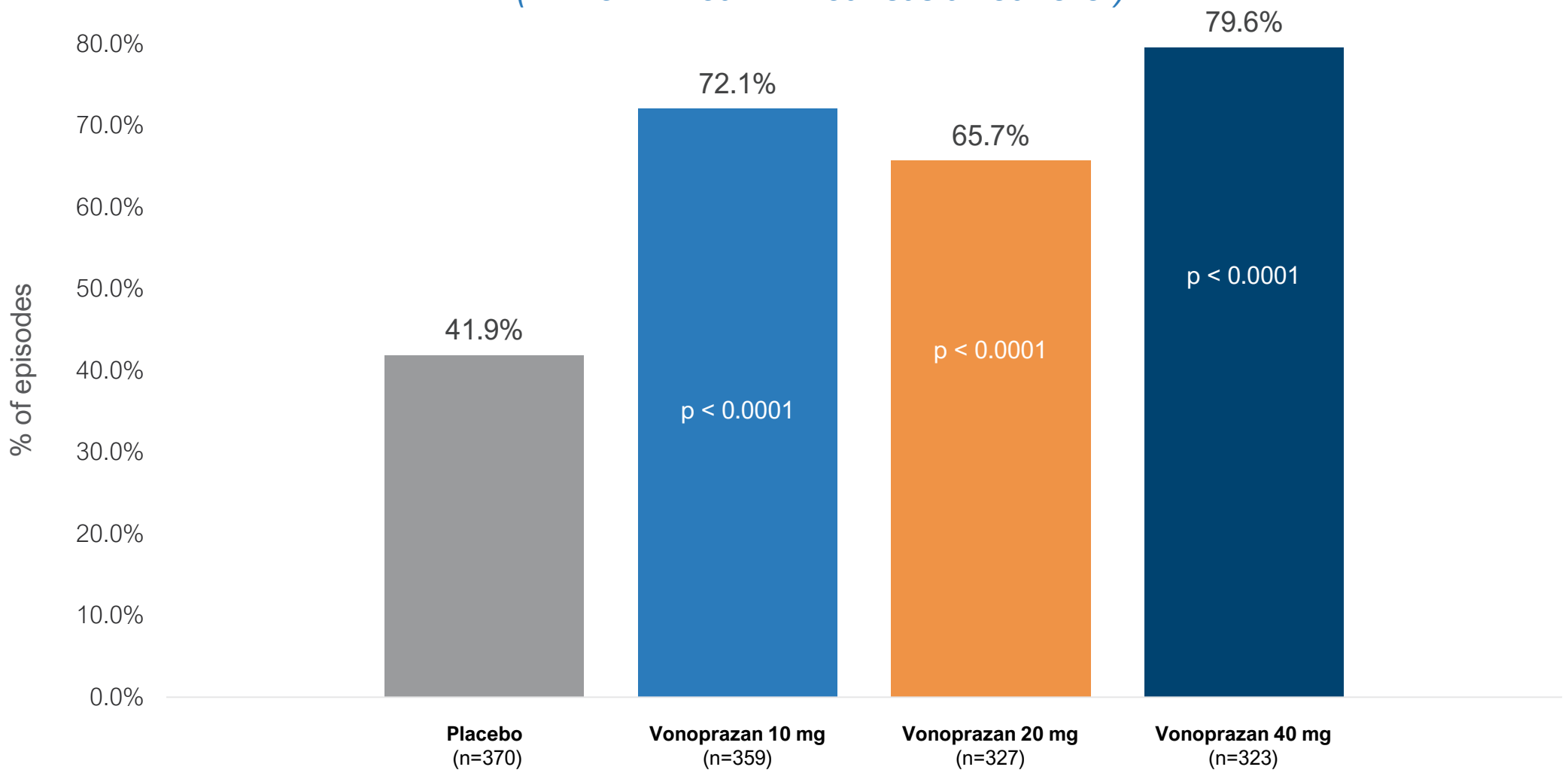
PHALCON-NERD-201 met the key secondary endpoint with all doses resulting in more complete relief of heartburn episodes compared with placebo

% of evaluable episodes* with complete heartburn relief within 3 hours^

(with or without 24-hour sustained relief)



*Evaluable episode = heartburn episode for which subject completes a minimum of one timed assessment

^Complete relief: Full symptom relief with no rescue antacid taken (must be achieved within 3 hours of study drug)

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PHALCON-NERD-201 safety data

The safety data for all vonoprazan arms were comparable to placebo and consistent with what was reported in previous studies

Daily dosing treatment phase

Vonoprazan 20 mg QD

- Most commonly reported events (> 1% of subjects)
  - Abdominal distension 1.3%
  - Diarrhea 1.5%
  - Nausea 1.3%
- 4 SAEs
  - 1 study drug related SAE (anaphylactic reaction)

On-demand treatment phase

	Placebo (n=52)	Vonoprazan 10 mg (n=52)	Vonoprazan 20 mg (n=52)	Vonoprazan 40 mg (n=51)
% (n) of subjects with at least 1 AE	21.3% (10)	16.3% (8)	18.4% (9)	16.7% (8)

- No individual AE was reported by more than one subject in a treatment group
- No SAEs

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