
Phathom
PHARMACEUTICALS
CHANGING THE LANDSCAPE IN GI
Going beyond to advance treatments for patients with acid-related disorders
CORPORATE OVERVIEW
September 2021

Safe harbor statement

This presentation contains forward-looking statements. All statements other than statements of historical facts, 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: reported top-line data is based on preliminary analysis of key efficacy and safety data is subject to more audit and verification procedures that could result in material changes in the final data; we may experience delays submitting the NDAs including in the event that the FDA does not agree with the our interpretation of the data or feedback from the FDA that may be inconsistent with feedback received at prior meetings with the FDA; our dependence on third parties in connection with product manufacturing, research and preclinical and clinical testing; 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with our license agreement with Takeda; qualified infectious disease product (QIDP) and Fast Track designations may be withdrawn or not actually lead to a faster development or regulatory review or extended exclusivity; and other risks described in our filings with the Securities and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 not 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.

Phathom PHARMACEUTICALS

Going Beyond

to advance treatments for patients with acid-related disorders

HEADQUARTERS
Florham Park, NJ

FORMED IN 2019
Listed on Nasdaq: PHAT

$209.7M IN CASH[3]
IPO – Oct 2019;
Follow-on Dec 2020

Vonoprazan: First innovative therapy for acid-related disorders in more than 25 years

P-CAB

potassium competitive acid blocker

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

Successful Phase 3 trial in ***H. pylori***
Submitted NDAs to FDA

Pivotal Phase 3 trial in **Erosive Esophagitis** results expected in **Oct 2021**

Approved in

14 COUNTRIES

across Asia and Latin America

>$800M

net sales in Japan for the 12 months ended June 30, 2021[1]

+15.5% YOY

volume-driven sales growth, more than 6 years following its approval[2]

[1] US dollars based on conversion rate of 0.0095 dollars to one yen
[2] Growth rate based on Takeda 2020 fiscal sales
[3] As of 6.30.2021, Phathom 10-Q

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

	Target Indications	Phase 1[1]	Phase 2[1]	Phase 3	Expected Milestones
Vonoprazan	**GERD**				
	Healing of Erosive Esophagitis (EE) and relief of heartburn			pHalcon ee	*Enrollment complete* ***Topline results Oct 2021***
	Maintenance of healing of Erosive Esophagitis (EE) and relief of heartburn				
	Treatment of heartburn associated with Non-erosive Reflux Disease (NERD)			pHalcon nerd	*Enrollment ongoing* ***Topline results 1Q22***
Vonoprazan + antibiotics	***H. pylori* treatment**				
	Dual therapy (vonoprazan + amoxicillin)			pHalcon hp	*Trial met all primary & secondary endpoints* ***Submitted NDAs to FDA***
	Triple therapy (vonoprazan + amoxicillin + clarithromycin)				

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

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

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After 25 years: innovation that matches unmet needs

H2 ANTAGONISTS

Introduced in **1970s**

Tagamet

Zantac®

Pepcid®

> **~$3.5B** peak US sales

PPIs

Introduced in **1980s**

PREVACID® LANSOPRAZOLE

Prilosec

Nexium® esomeprazole

AcipHex®

PROTONIX® (pantoprazole sodium)

> **~$12.5B** peak US sales

25 YEARS

- > **Most GERD patients believe they can get better control over their symptoms**[1]
- > **GERD patients try 2 or more therapies to control symptoms**[1]

P-CABs

Introduced in Japan **2015**

Takecab® (vonoprazan)

> **>$800M** net sales in Japan for the 12 months ended June 30, 2021[2]

[1] SRI, June 2020 | Qualitative patient interviews
[2] US dollars based conversion rate of 0.0095 dollars to one yen

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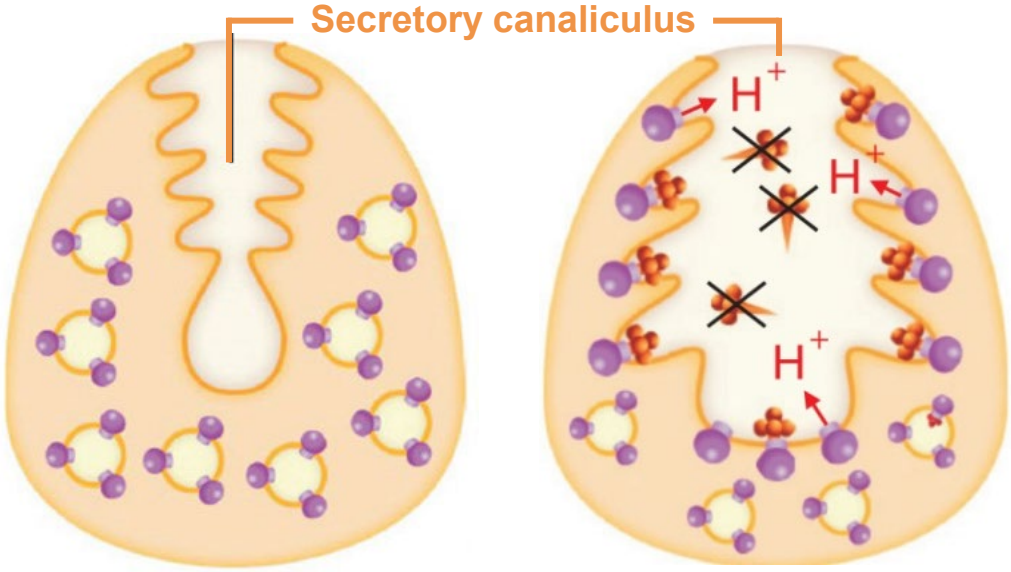
PPIs: mechanism limits effectiveness

GASTRIC PARIETAL CELL



PPI:
COVALENTLY BINDING PRODRUG

- Short plasma half-life
- Acid needed for activation but unstable in presence of acid
- Meal required to stimulate pumps
- Primarily metabolized via CYP2C19

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

Oshima et al, J Neurogastroenterol Motil, 2018

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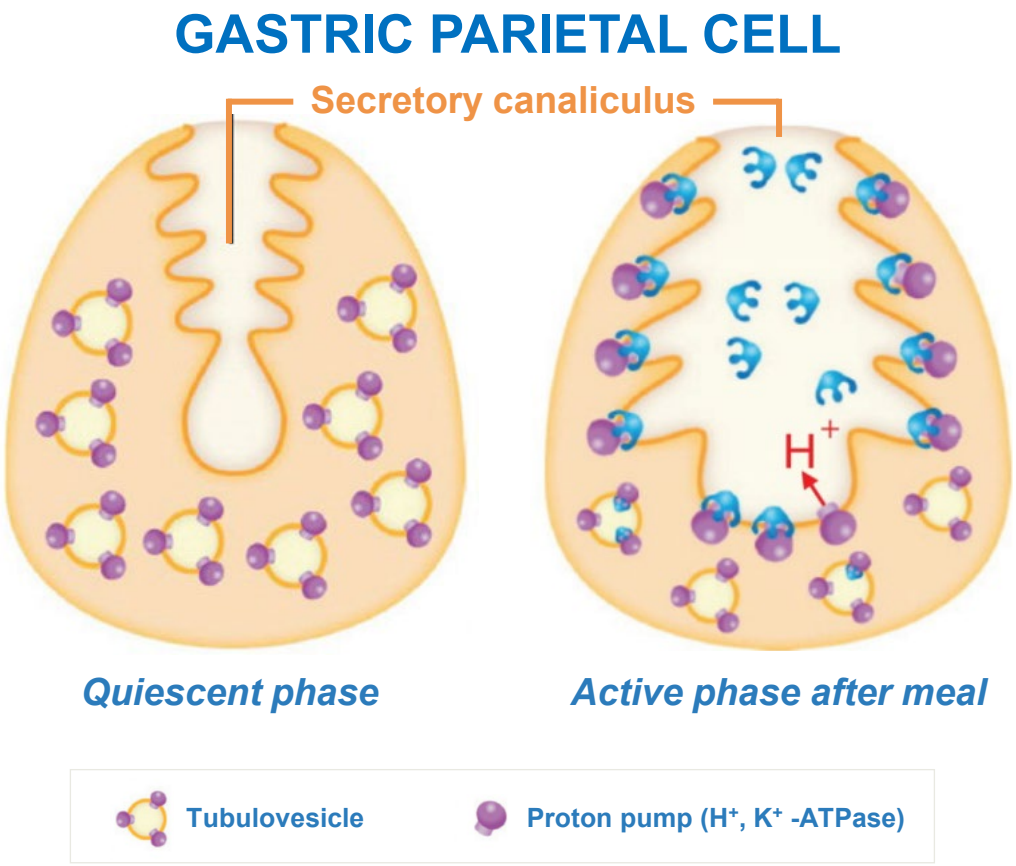
Vonoprazan: distinct mechanism designed to address PPI shortcomings



Vonoprazan:
COMPETITIVE ENZYME INHIBITOR

- Long plasma half-life
- Stable in acid
- High accumulation in canaliculus
- Very slow dissociation rate
- Primarily metabolized via CYP3A4/5

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

Oshima et al, J Neurogastroenterol Motil, 2018

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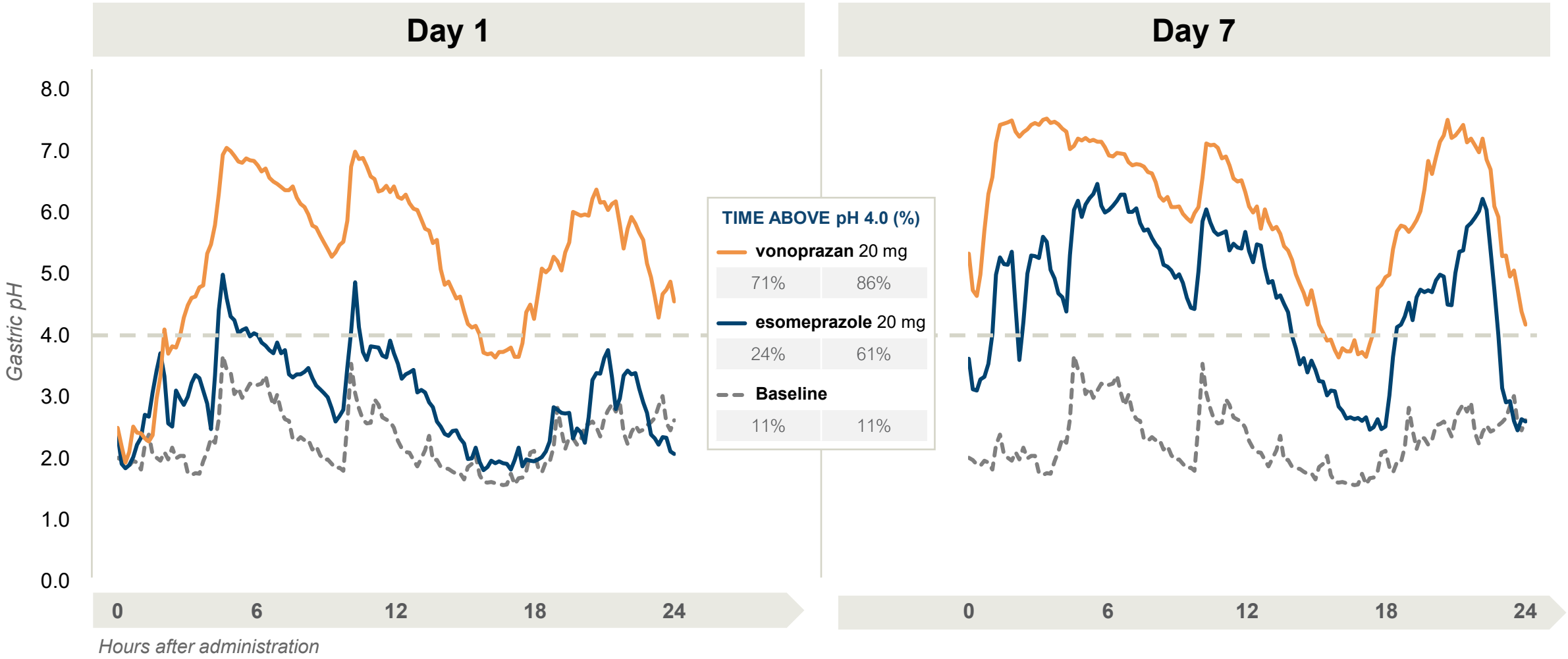
Vonoprazan demonstrated faster, more potent, and more durable acid control vs. PPI



Sakurai et al, Alimentary Pharmacology and Therapeutics, 2015; Study evaluating efficacy, rapidity and duration of acid-inhibitory effects of vonoprazan vs. two control PPIs, esomeprazole and rabeprazole, in 20 healthy Japanese adult male volunteers

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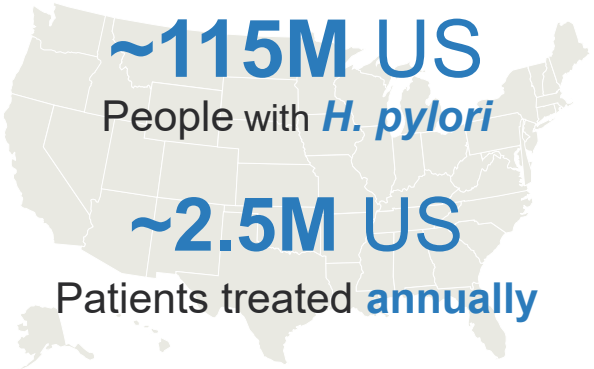
Significant opportunities to bring value to patients, physicians, and payers

H. pylori

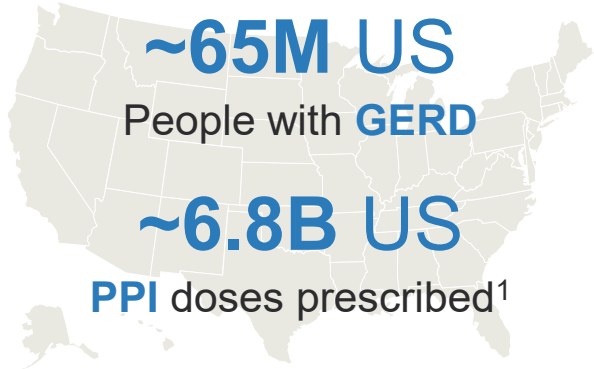


~115M US
People with ***H. pylori***

~2.5M US
Patients treated **annually**

- > *H. pylori* designated as a Class I carcinogen by WHO and Qualifying Pathogen under FDA GAIN Act
- > **<80%** eradication due to antibiotic resistance
- > Antibiotic potency increases at higher pH

GERD



~65M US
People with **GERD**

~6.8B US
PPI doses prescribed[1]

- > **~15-45%** inadequately treated with PPIs
- > Many patients experience breakthrough heartburn and recurrence of erosions while on PPIs

[1] For the 12 months ended October 31, 2020; IQVIA data

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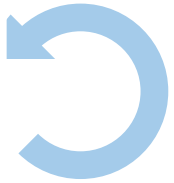
PHALCON-HP lays the foundation for building the leading GI-focused pharmaceutical company



Large study in US and EU patients that is consistent with prior Japan studies

Basis for planned *H. pylori* NDA submissions

If approved, we expect 10+ years exclusivity before first ANDA filing[1]

If approved in *H. pylori*, provides opportunity for targeted launch in advance of larger potential EE launch

[1] 10+ years of regulatory exclusivity pre-ANDA filing is based upon 5 years for new chemical entity exclusivity for vonoprazan, 5 years additional exclusivity for QIDP designation, and 6 additional months for pediatric exclusivity

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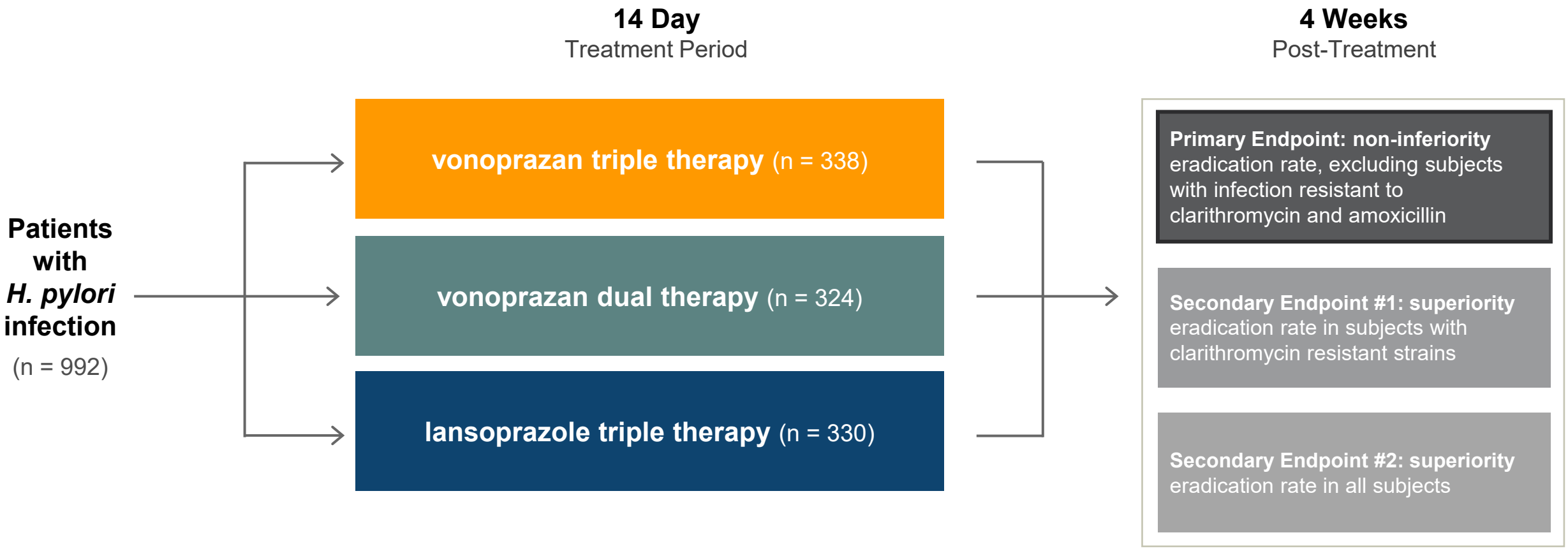
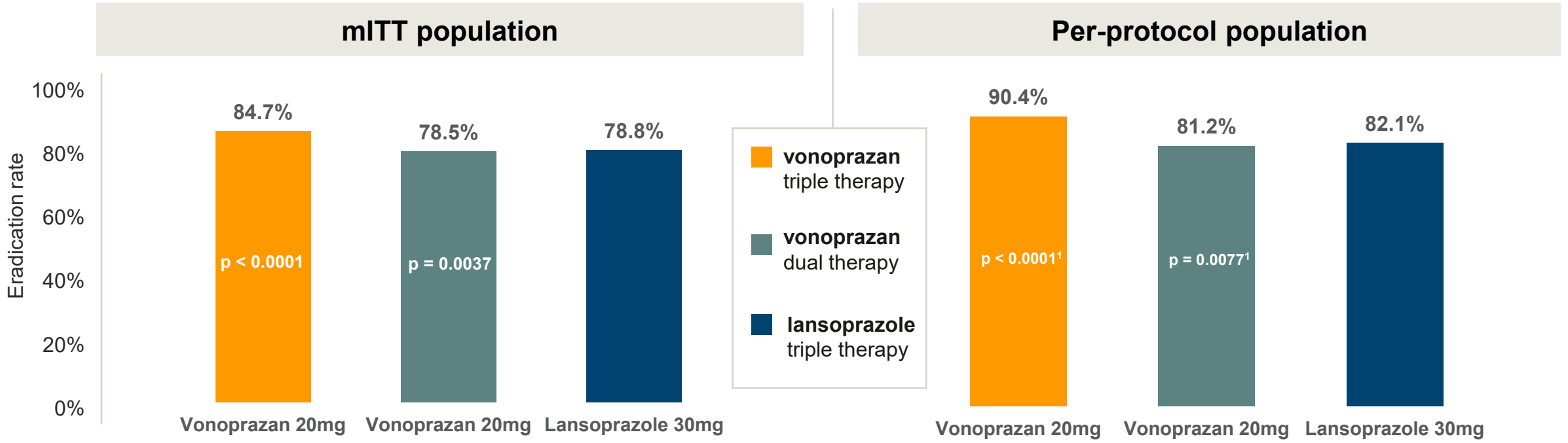
PHALCON-HP phase 3 study design



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 primary endpoint analysis

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

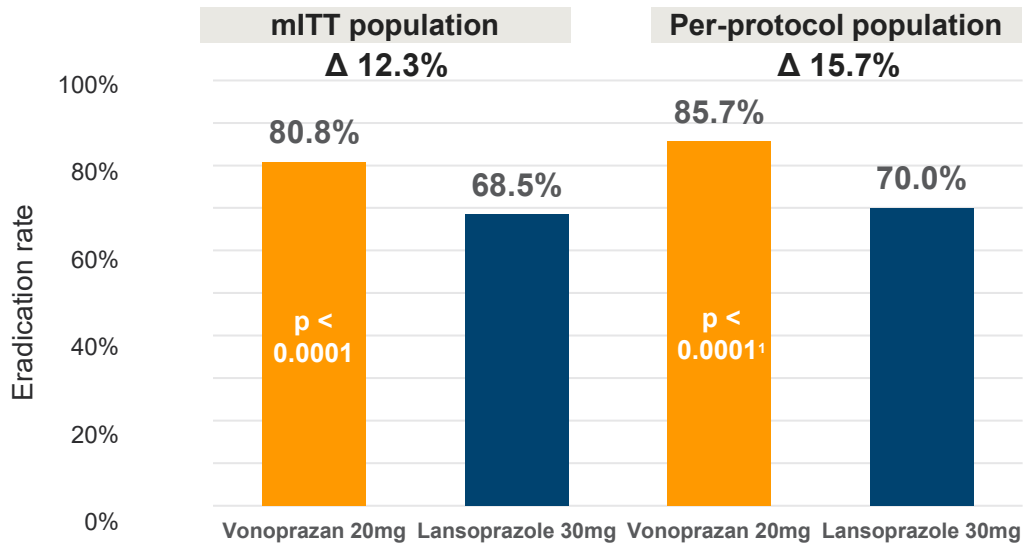


[1] Not adjusted for multiple comparisons

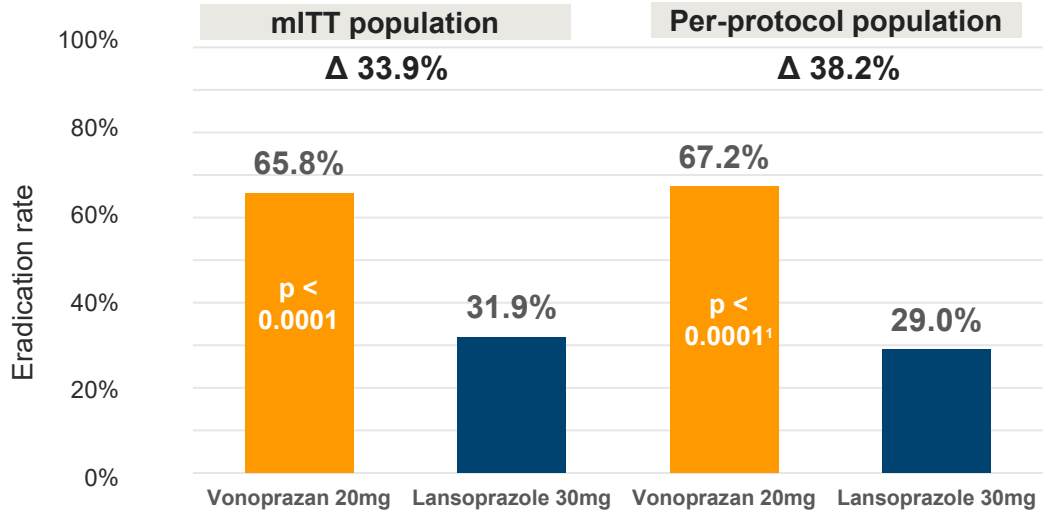
Both vonoprazan-based therapies met superiority for secondary endpoints

Vonoprazan triple therapy

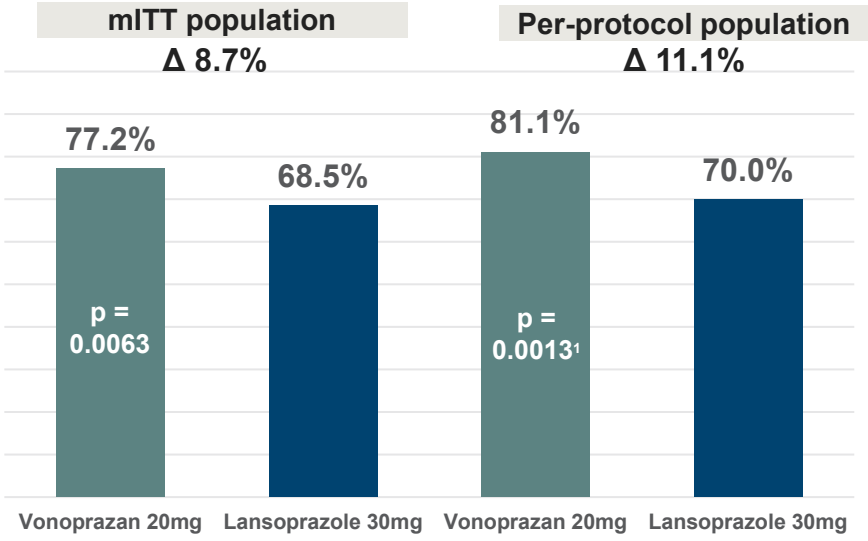
all subjects

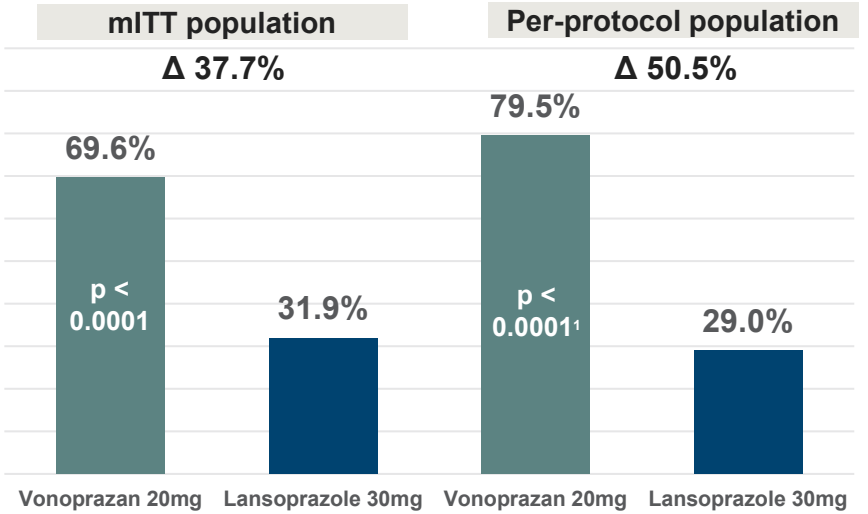


subjects with clarithromycin resistant strains



Vonoprazan dual therapy





[1] Not adjusted for multiple comparisons

PHALCON-HP safety profile

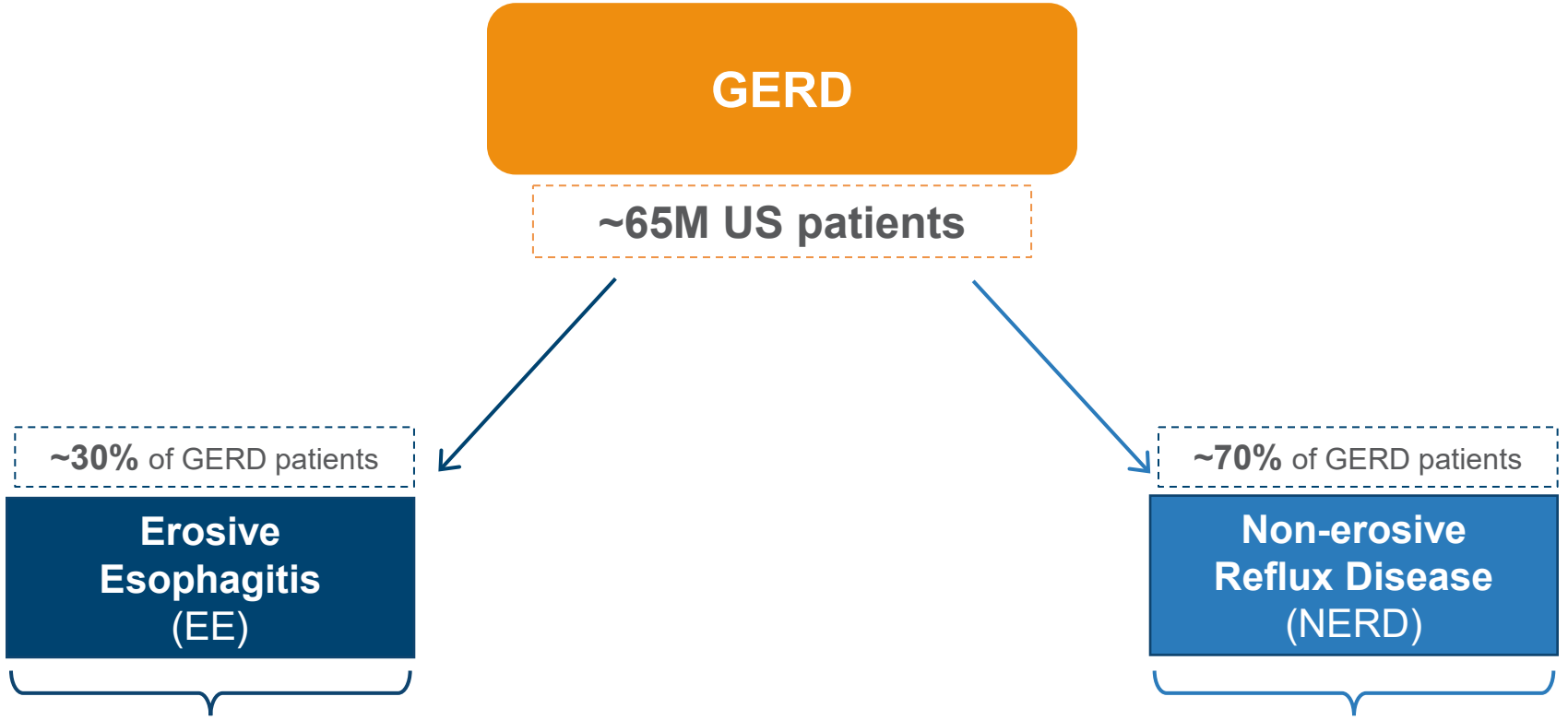
vonoprazan-based regimens generally well tolerated; comparable to lansoprazole triple therapy

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

Key unmet needs within GERD classifications



> **Improved efficacy**: healing/maintenance of healing of erosions and symptom control (rapid and durable)

> **Improved symptom control**: speed and durability of relief

> **On-demand dosing**: speed and durability of symptom relief with flexible dosing

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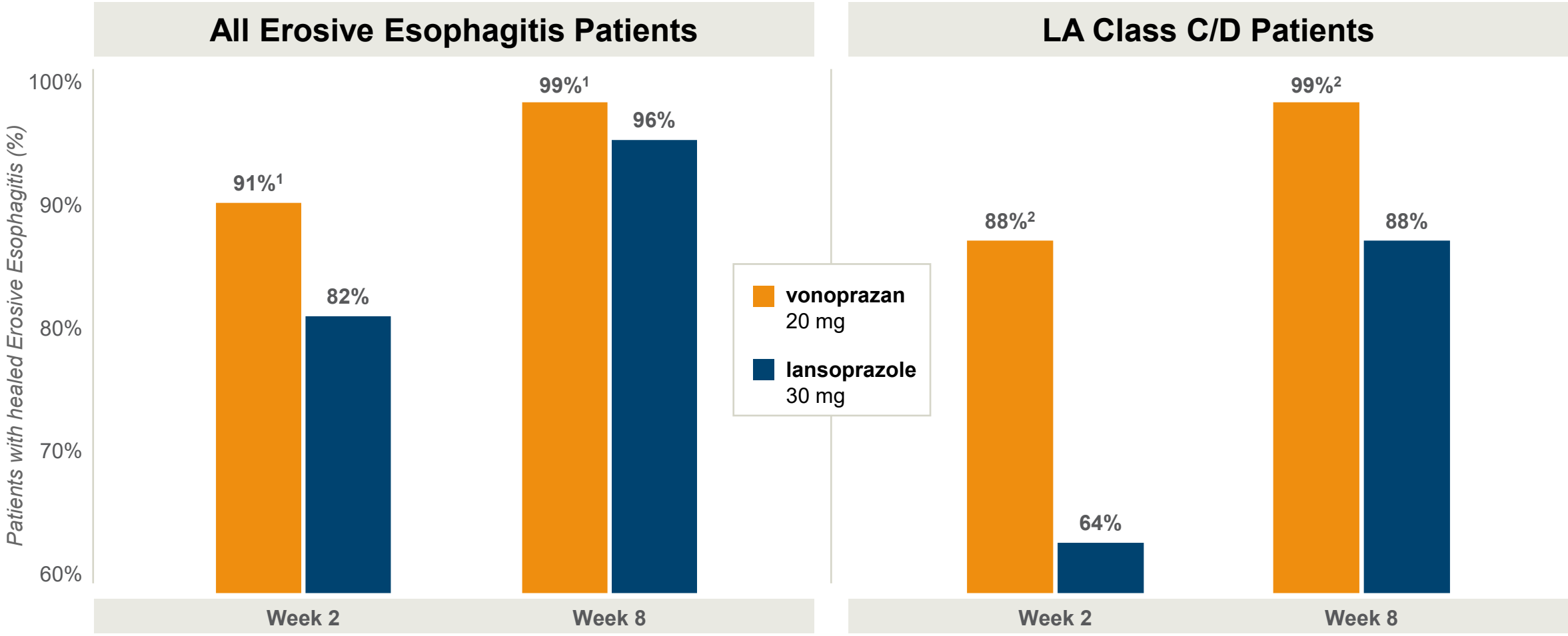
Japan Erosive Esophagitis phase 3: faster and improved healing vs. PPI



n=404, [1]Statistically significant ($p < 0.05$) for superiority versus lansoprazole

n=147, [2]Statistically significant ($p < 0.05$) for superiority versus lansoprazole

Ashida et al, Aliment Pharmacol Ther 2016; Note: clinical trial met prespecified non-inferiority endpoint and post hoc superiority test

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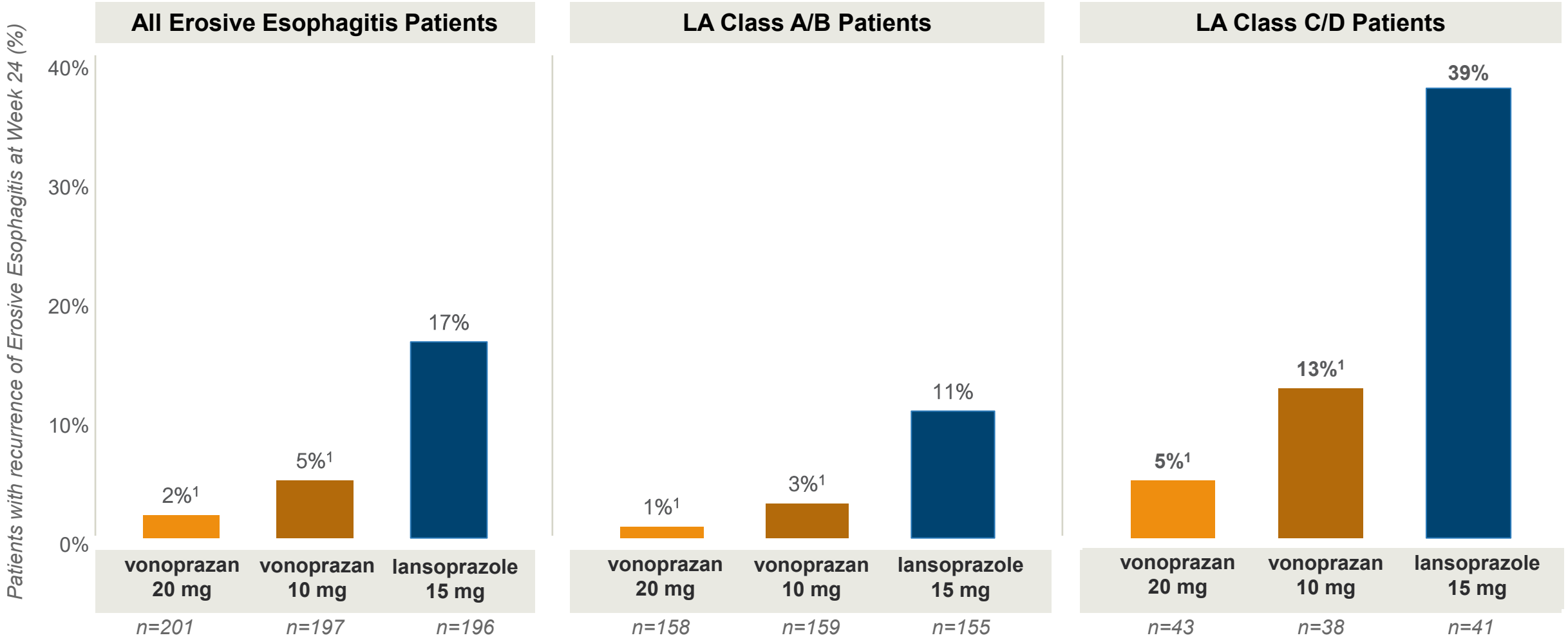
Japan Erosive Esophagitis phase 3: lower 6-month recurrence rates vs. PPI



[1] p < 0.05 for superiority of vonoprazan 20 mg and vonoprazan 10 mg versus lansoprazole

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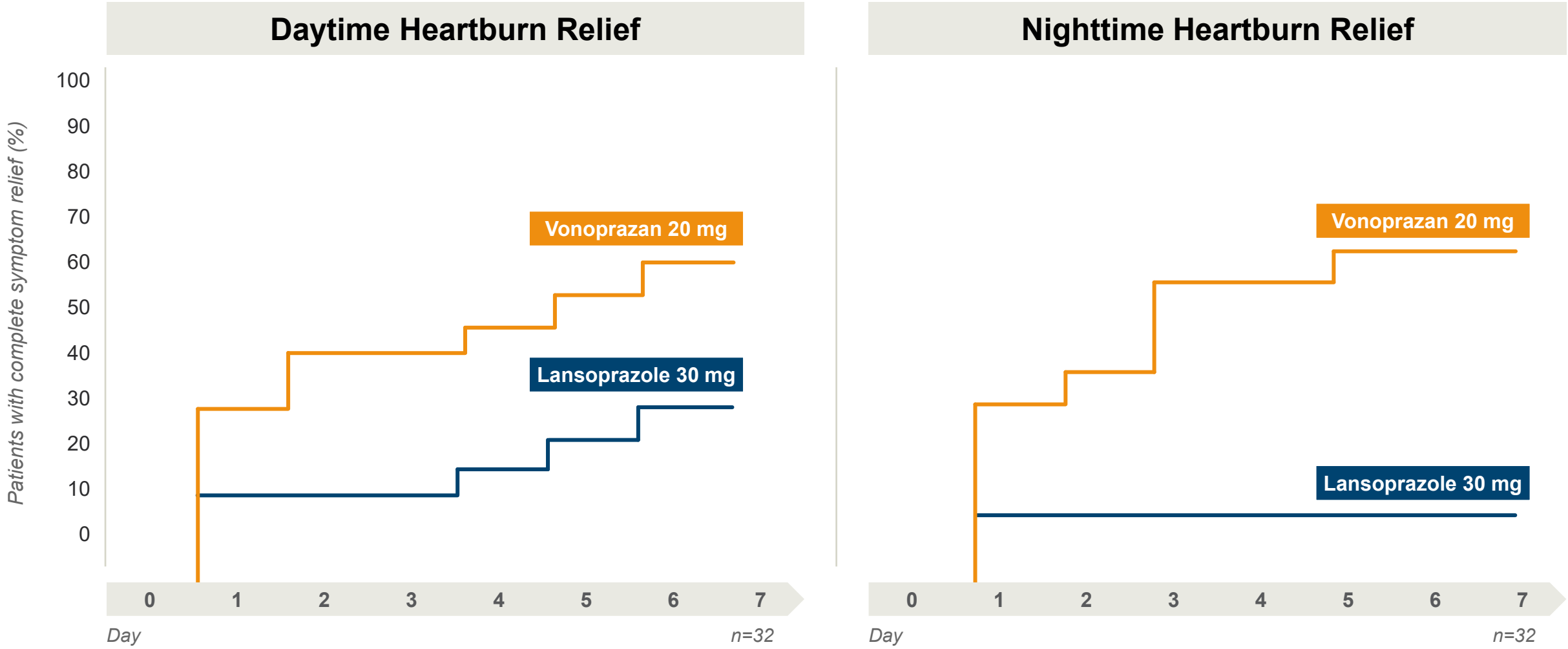
Faster and more complete heartburn relief vs. PPI



Oshima et al, AP&T 2018

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Vonoprazan safety profile similar to PPIs

>8,000 patients have received vonoprazan in clinical studies

No dose-related increase in adverse events observed in clinical studies

>25 million patients have received vonoprazan since launch

ADVERSE EVENTS IN CLINICAL DEVELOPMENT REFLECTED IN JAPANESE PRESCRIBING INFORMATION

Incidence of 0.1-5.0%

Diarrhea[1]	Elevated liver enzymes
Constipation	Rash
Nausea	Eosinophilia

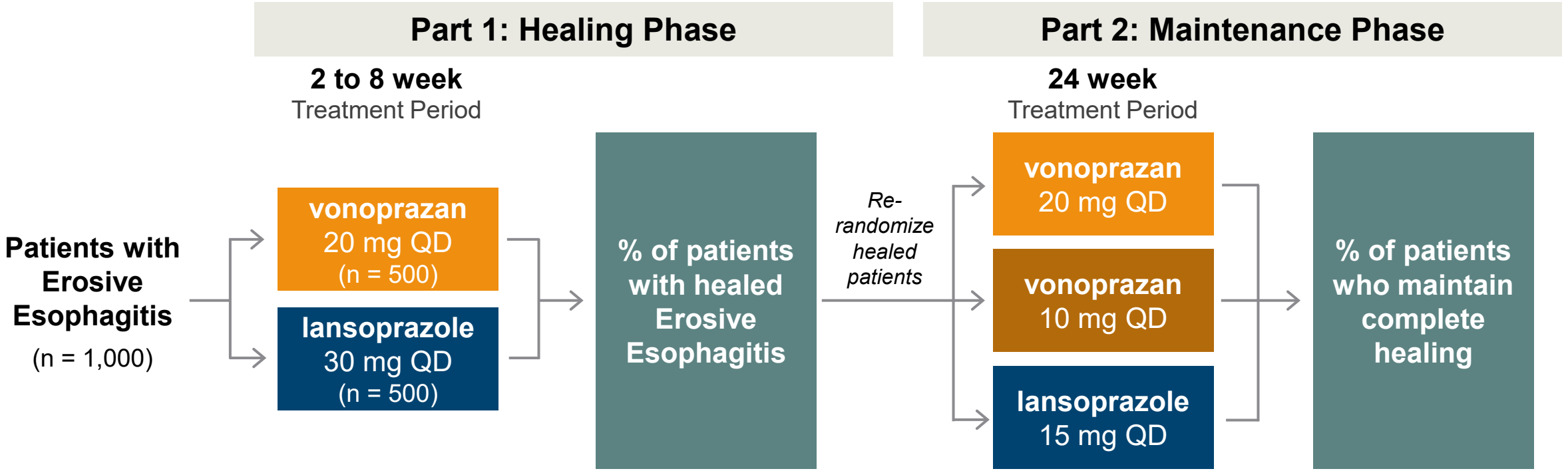
HEPATIC EVENTS OF SPECIFIC INTEREST IN LIGHT OF FIRST-GENERATION PCABs

Pooled data across head-to-head Phase 2 and 3 studies	**vonoprazan** 10 and 20mg	**lansoprazole** 15 and 30mg
ALT or AST >3X ULN or Bilirubin >2X ULN	1.0%	0.8%

[1]10.6% in combination with antibiotics for treatment of *H. pylori*
Ashida et al, World J Gastro 2018; Data on file

PHALCON-EE phase 3 study design

US/Europe study in Erosive Esophagitis



Nov 2020 Enrollment completed; **Oct 2021** Topline results expected

PHALCON-EE key endpoints

1	Healing of EE	**% of all patients healed by Week 8 (Primary Endpoint)** **Noninferiority Test** – 20 mg (10% margin)
2	Maintenance of healing of EE	**% of all patients who maintained healing through Week 24 (Primary Endpoint)** **Noninferiority Test** – both doses (10% margin)
3	Heartburn symptom relief	**% of 24-hour heartburn-free days over the Healing Period (Secondary Endpoint)** **Noninferiority Test** – 20 mg Power >90%

Endpoints for differentiation

% of Grades C/D maintaining healing through Week 24 (Secondary Endpoint) **Superiority Test** – both doses Power >90%
% of all Grades maintaining healing through Week 24 (Secondary Endpoint) **Superiority Test** – both doses Power >90%
% of Grades C/D subjects who have healed at Week 2 (Secondary Endpoint) **Superiority Test** – 20 mg Power 80%
% with onset of sustained resolution of heartburn by Day 3 (Secondary Endpoint) **Superiority Test** – 20 mg Power 80%
% of all Grades who have healed at Week 2 (Secondary Endpoint) ***Superiority Test*** – 20 mg Power 70%
% of Grades C/D subjects who have healed at Week 8 (Secondary Endpoint) ***Superiority Test*** – 20 mg Power 70%

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NERD development strategy

Significant Unmet Need

~45M US

PEOPLE with **NERD**

- Need for greater flexibility and convenience in management of symptoms
- Patients and physicians have concerns with sustained daily PPI dosing
- Unapproved non-continuous regimens are widely used by US patients
- Approximately 50% of patients progress lines of therapy annually[1]

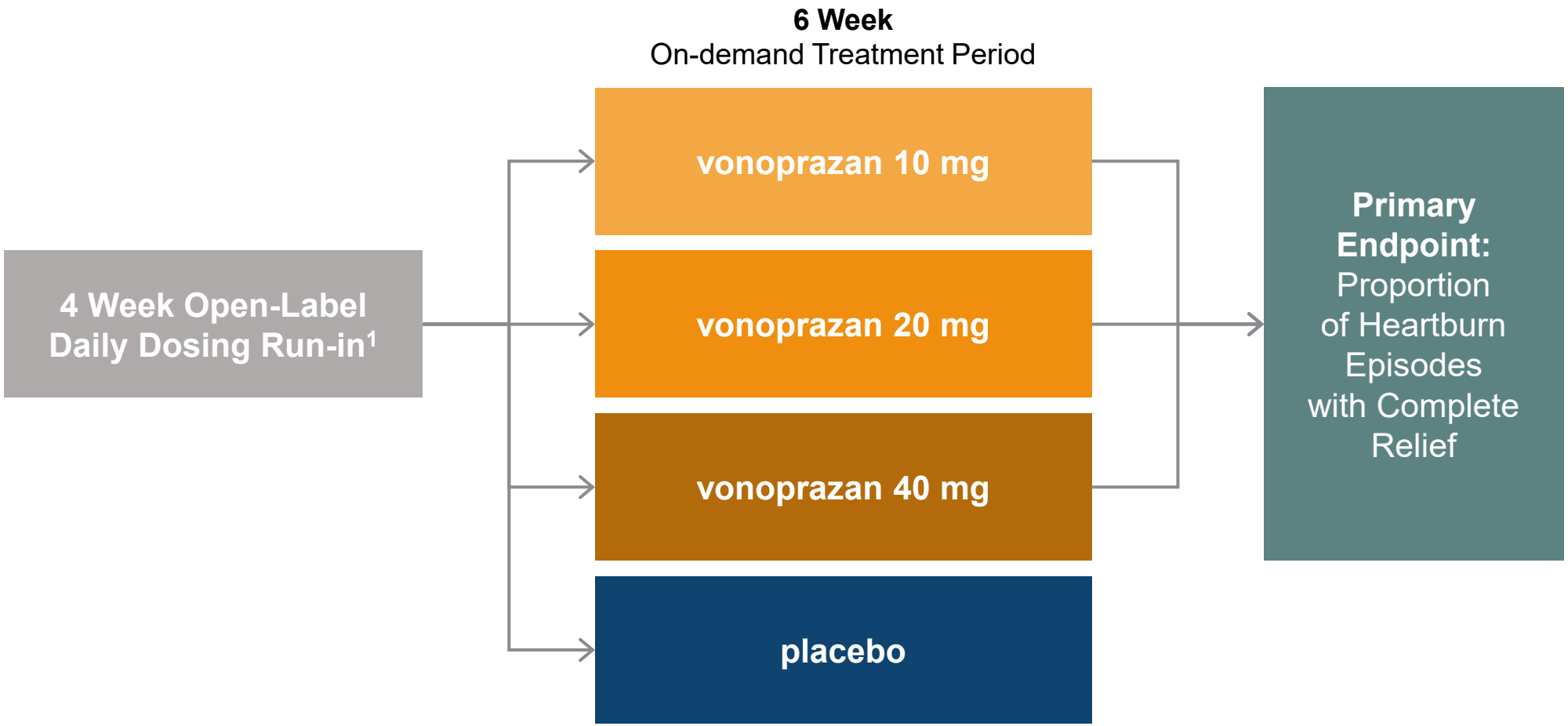
Vonoprazan's speed of onset, potency, and duration have the potential to satisfy unmet NERD needs

Development Strategy

- Initiated phase 2 NERD on-demand study (April 2021); topline results expected 1Q22
- Plan to initiate phase 3 program evaluating both vonoprazan continuous and on-demand dosing regimens
- No PPIs are approved for on-demand use in the US

[1] Symphony Health claims analysis (Jul 2017 – Jan 2020)

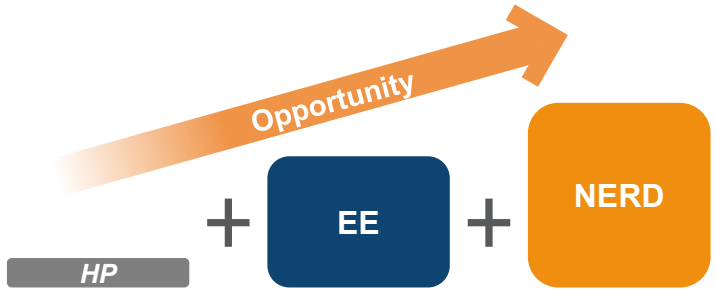
Phase 2 PHALCON-NERD on-demand trial design



Trial initiated in April 2021 with topline results expected 1Q22

[1] Dosing initiated at onset of a heartburn episode; rescue antacid medication allowed after 3 hours of taking test medication

Significant opportunity and attractive commercial dynamics



Large Populations + Unmet Need

Strong Physician Preference + Concentrated High Prescribers

Minimal Branded Competition + Share of Voice Ownership

Potential Clinical Differentiation and Value

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Pipeline indications provide potential blockbuster opportunity for vonoprazan

~6.8 BILLION PPI doses prescribed in the US annually[1]

H. pylori

~115 MILLION
PEOPLE IN THE US WITH *H. PYLORI* INFECTION

~2.5 MILLION
PEOPLE TREATED ANNUALLY FOR *H. PYLORI*

\+

GERD

~65 MILLION
PEOPLE IN THE US WITH GERD

~20 MILLION
PEOPLE WITH EE

~45 MILLION
PEOPLE WITH NERD

=

If approved, potential to capture significant share of US Rx PPI market

48% HCPs expect to prescribe vonoprazan to 48% of their *H. pylori* patients[2]

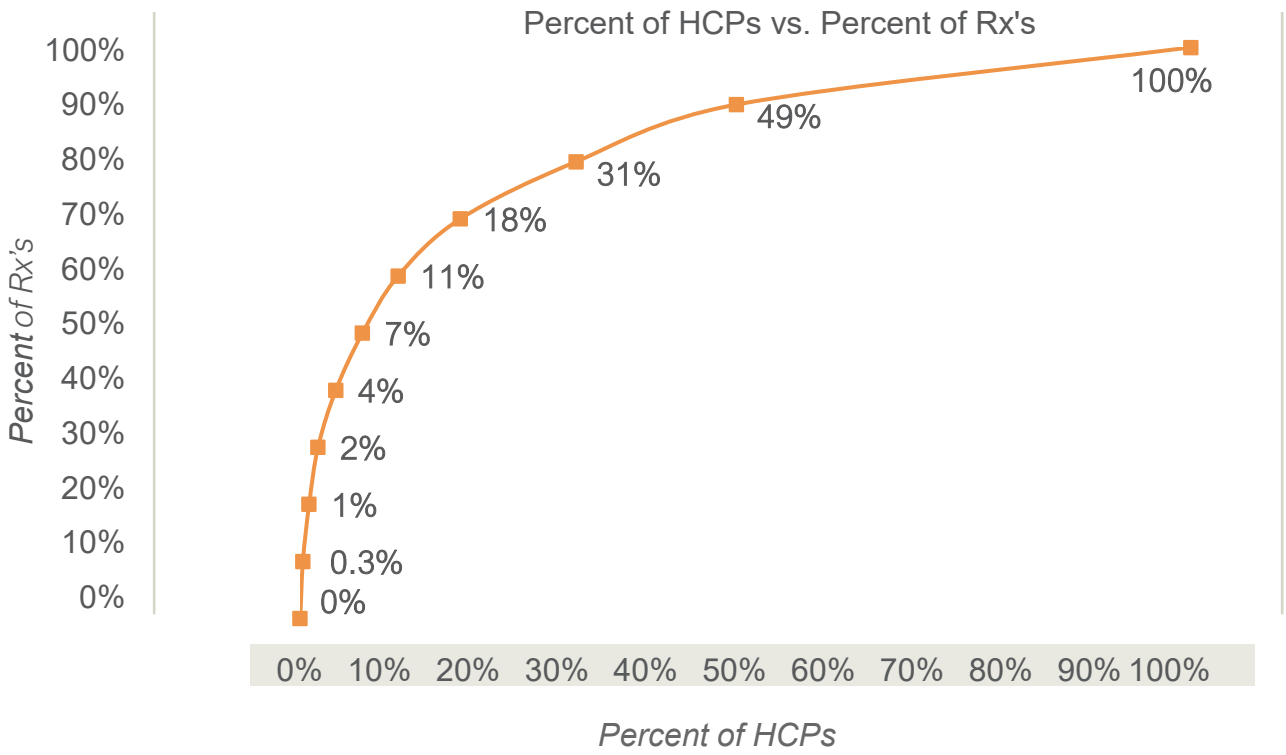
~50% ~50% of EE & NERD patients progress lines of therapy annually[3]

35% HCPs expect to prescribe vonoprazan to 35% of their EE and NERD patients[2]

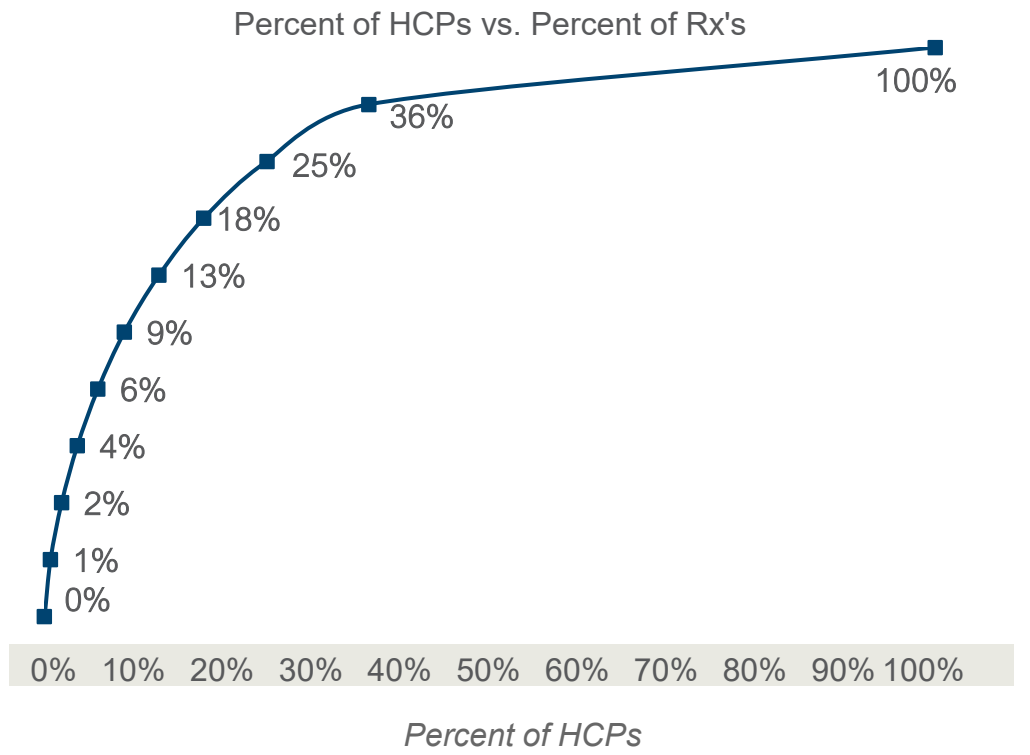
[1] For the 12 months ended October 31, 2020; IQVIA data
[2] SRI, August 2020 | Qualitative physician interviews
[3] Symphony Health claims analysis (Jul 2017 – Jan 2020)

Highly concentrated prescriber base allows for focused targeting of impactful HCPs

~20% of Physicians Write 70% of *H. pylori* Scripts



~20% of HCPs Write 70% of GERD Scripts



Symphony Health claims analysis (Jan 2019 – Dec 2019)

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Potential for optimal access placement

ACCESS = **Vonoprazan Potential Value Proposition** + **Price** + **Rebate**

Provide optimal access placement for the broadest number of patients

> ~65M people with GERD in the US

> ~50% of EE & NERD[1] patients progress lines of therapy annually

Potent, Rapid, Durable

> Superior HP eradication rates

> Lower EE recurrence rates

Market analogues having achieved broad access

> *e.g.* Dexilant WAC of $10.28/dose[2] (PPI with non-differentiated MOA, achieved >$500M in peak net US sales)

Balance

Access position vs. price vs. rebate

[1] Symphony Health claims analysis (Jul 2017 – Jan 2020)
[2] First Databank database as of Jan 2021

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Pathway for potential commercial success

Elevate underlying market dissatisfaction with PPIs and large unmet needs

Leverage vonoprazan's unique mechanism of action and acid suppression characteristics– speed, potency, duration

Differentiate through superior efficacy data, multiple therapy options, and convenience

Executing on planned key company catalysts

- ✓ > Enrollment completed in Ph 3 PHALCON-EE and PHALCON-HP trials
- ✓ > Ph 2 NERD on-demand trial initiated
- ✓ > Positive topline Ph 3 results presented for PHALCON-HP
- ✓ > Submitted *H. pylori* NDAs to FDA

OCT 2021

> Topline Ph 3 results for PHALCON-EE

2022

> Topline Ph 2 results for NERD on-demand trial
> *H. pylori* NDA approval and US launch
> Erosive Esophagitis NDA submission

2023

> Erosive Esophagitis NDA approval and US launch

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Appendix

Additional PHALCON-EE Clinical Trial Information

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PHALCON-EE healing phase testing hierarchy

Primary Endpoint
Noninferiority Test (10% margin):
% healed by Week 8

Power:
>90%

Key secondary endpoints to support labeling

Key Secondary Endpoint Testing Hierarchy[1]

1. ***Noninferiority Test: Power >90%***
   % of 24-hour heartburn-free days over the Healing Period
2. ***Superiority Test: Power 80%***
   % of Grades C/D subjects who have healed at Week 2
3. ***Superiority Test: Power 80%***
   % with onset of sustained resolution of heartburn by Day 3

[1] Additional secondary endpoints include testing for superiority of healing for all grades at Week 8 and Grades C/D at Week 8

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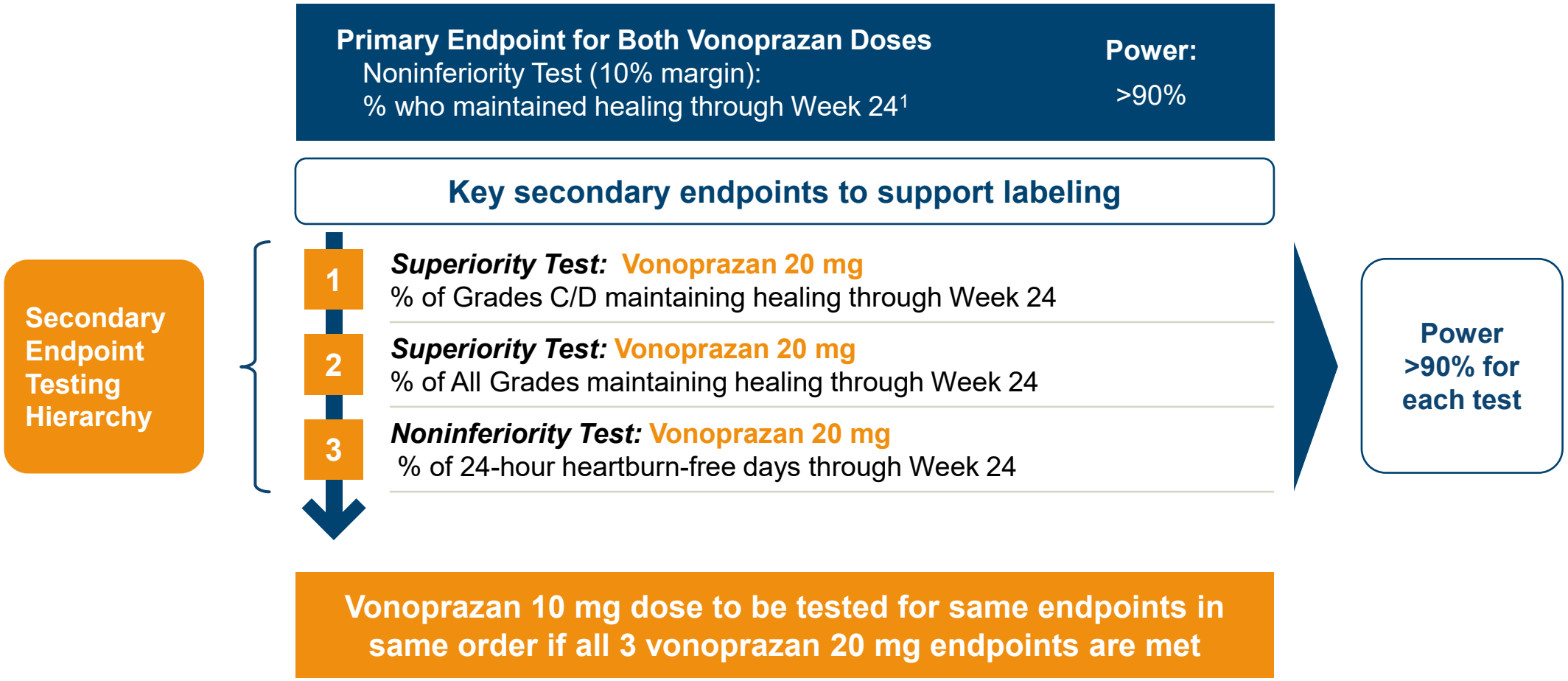
PHALCON-EE maintenance phase testing hierarchy



[1] Hochberg family testing for both 20 mg and 10 mg vonoprazan doses. If both doses meet primary endpoint, secondary endpoint hierarchical testing will be conducted in the order indicated

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