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

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 impact of COVID-19 on our ongoing and future clinical trials is highly uncertain due to factors outside our control; potential delays in enrollment and completion of clinical trials; our dependence on third parties in connection with product manufacturing, research and preclinical and clinical testing; the success of our clinical trials of vonoprazan, and the results of prior clinical trials and other investigator-initiated clinical trials of vonoprazan are not necessarily predictive of our future results and the FDA and comparable foreign regulatory authorities may not accept the data from such prior trials to support approval; regulatory developments in the United States and foreign countries; 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for vonoprazan; our ability to comply with our license agreement with Takeda; QIDP and Fast Track designations may be withdrawn or not actually lead to a faster development or regulatory review or extended exclusivity; our ability to maintain undisrupted business operations due to the ongoing spread of COVID-19, including delaying or otherwise disrupting our clinical trials, manufacturing and supply chain, 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.

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and growth 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.

Phathom PHARMACEUTICALS

Going Beyond

to advance treatments for patients with acid related disorders

HEADQUARTERS
Florham Park, NJ

RAISED $209M | OCT 2019
Gross Proceeds in IPO

FORMED IN 2019
Listed on Nasdaq: PHAT

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

P-CAB

Potassium competitive acid blocker

Topline data from two pivotal phase 3 trials in **2021**

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Approved in

14 COUNTRIES

across Asia and Latin America

>$725M

net sales in Japan for the 12 months ended Sept 30, 2020[1]

+17% YoY

volume-driven sales growth in the 6th year on the market[2]

[1] US dollars based on September 30, 2020 conversion rate of 0.0095 dollars to one yen
[2] Growth based on prior comparable 12-month period

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

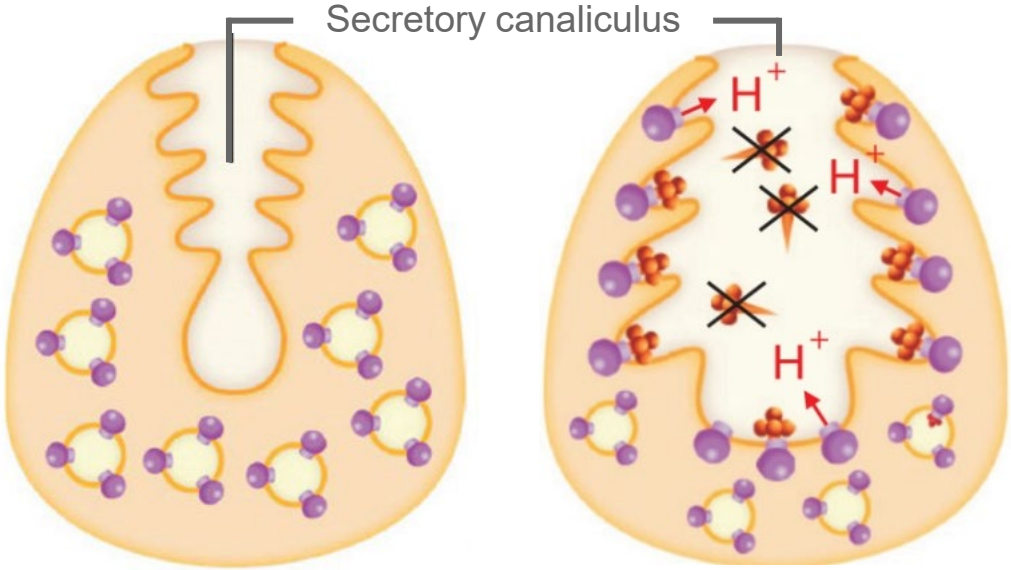
	Target Indications	Phase 1[1]	Phase 2[1]	Phase 3	Expected Milestones
Vonoprazan	**GERD**			pHalcon-ee A research study for *Erosive Esophagitis*	
	Healing of Erosive Esophagitis (EE) and relief of heartburn				*Enrollment complete*
	Maintenance of healing of Erosive Esophagitis (EE) and relief of heartburn				***Topline results 2H21***
	Treatment of heartburn associated with Non-erosive Reflux Disease (NERD)				*Phase 2 FSI mid-21*
Vonoprazan + antibiotics	***H. pylori* treatment**			pHalcon-hp A research study for *H. pylori Infection*	
	Dual therapy (vonoprazan + amoxicillin)				*Enrollment complete*
	Triple therapy (vonoprazan + amoxicillin + clarithromycin)				***Topline results 2Q21***

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 Erosive Esophagitis, and *H. pylori* treatment conducted by Takeda

PPIs: mechanism limits effectiveness

GASTRIC PARIETAL CELL



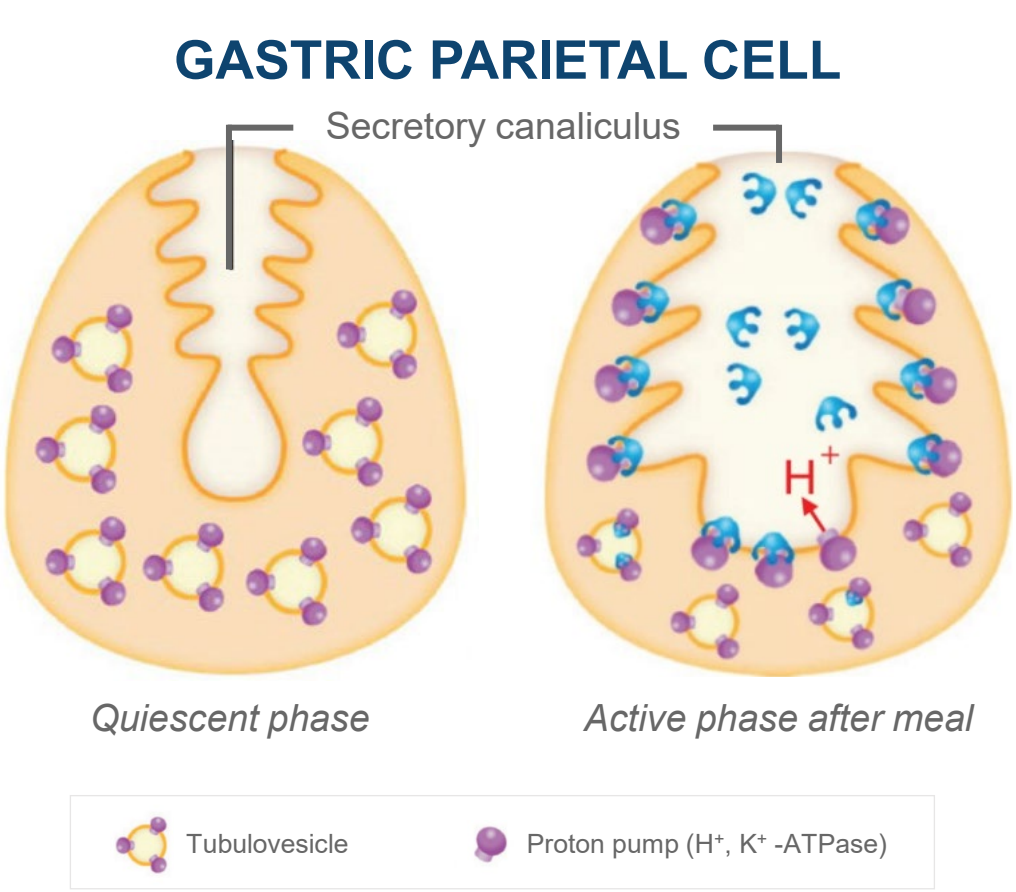
PPI:
COVALENTLY BINDING PRODRUG

- 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

Vonoprazan: distinct mechanism designed to address PPI shortcomings



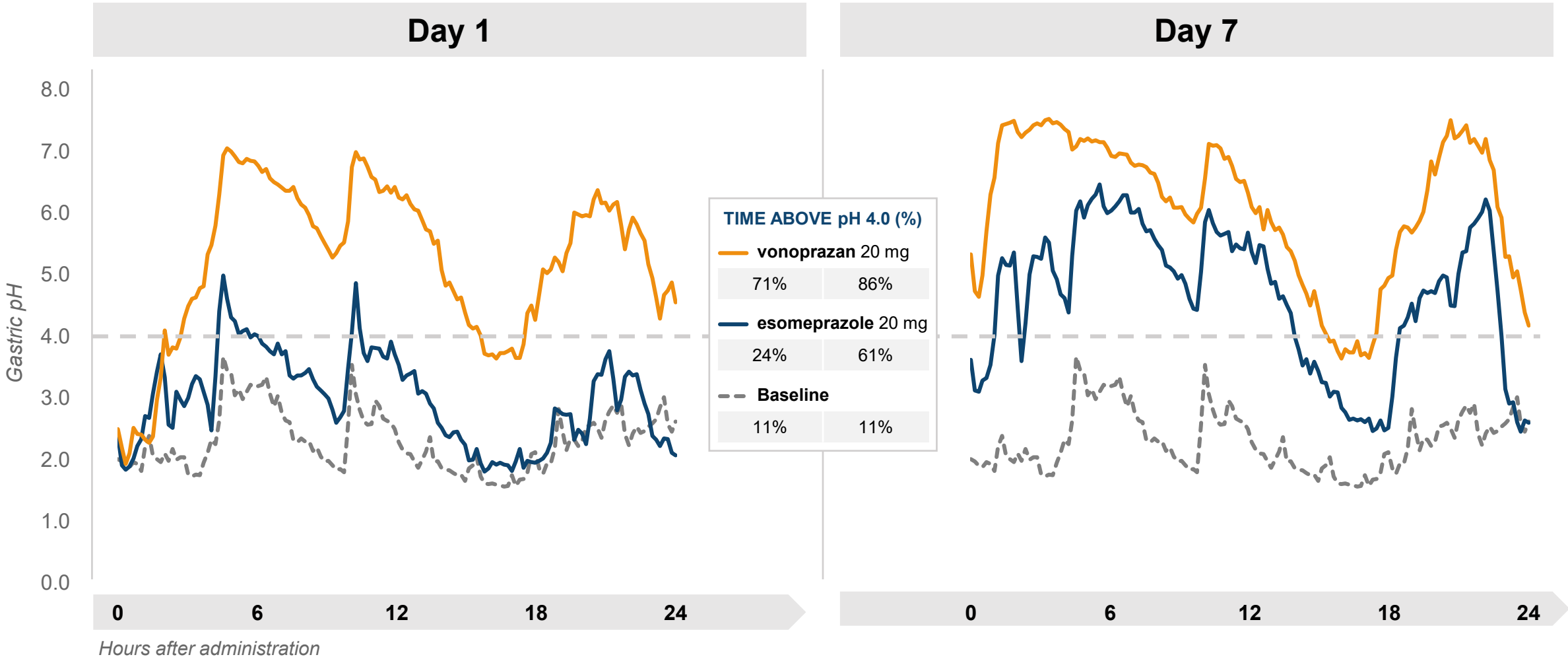
Vonoprazan:
COMPETITIVE ENZYME INHIBITOR

- 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

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

Vonoprazan for GERD

~65M US

~50M EU5

People with GERD

~6.8B US

PPI doses prescribed[1]

~15-45%

Inadequately treated with PPIs

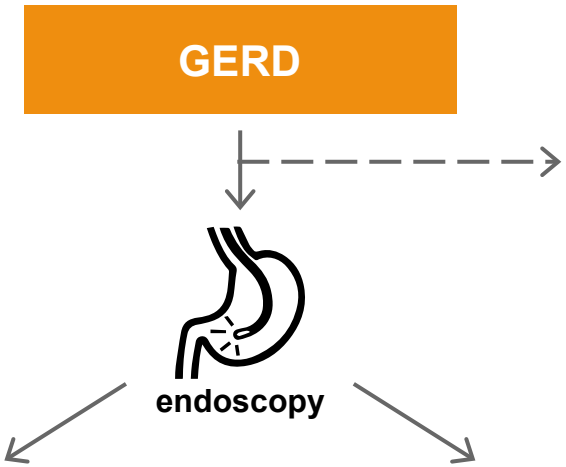
Many patients experience breakthrough heartburn and recurrence of erosions while on PPIs

Vonoprazan may offer more rapid, potent and durable healing and symptom control

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

El-Serag APT 2010; El-Serag Gut 2014; IQVIA data Oct 2020

Key unmet needs within GERD classifications



Frequently treated as symptomatic GERD without endoscopic evaluation

KEY UNMET NEEDS

Erosive Esophagitis (EE)

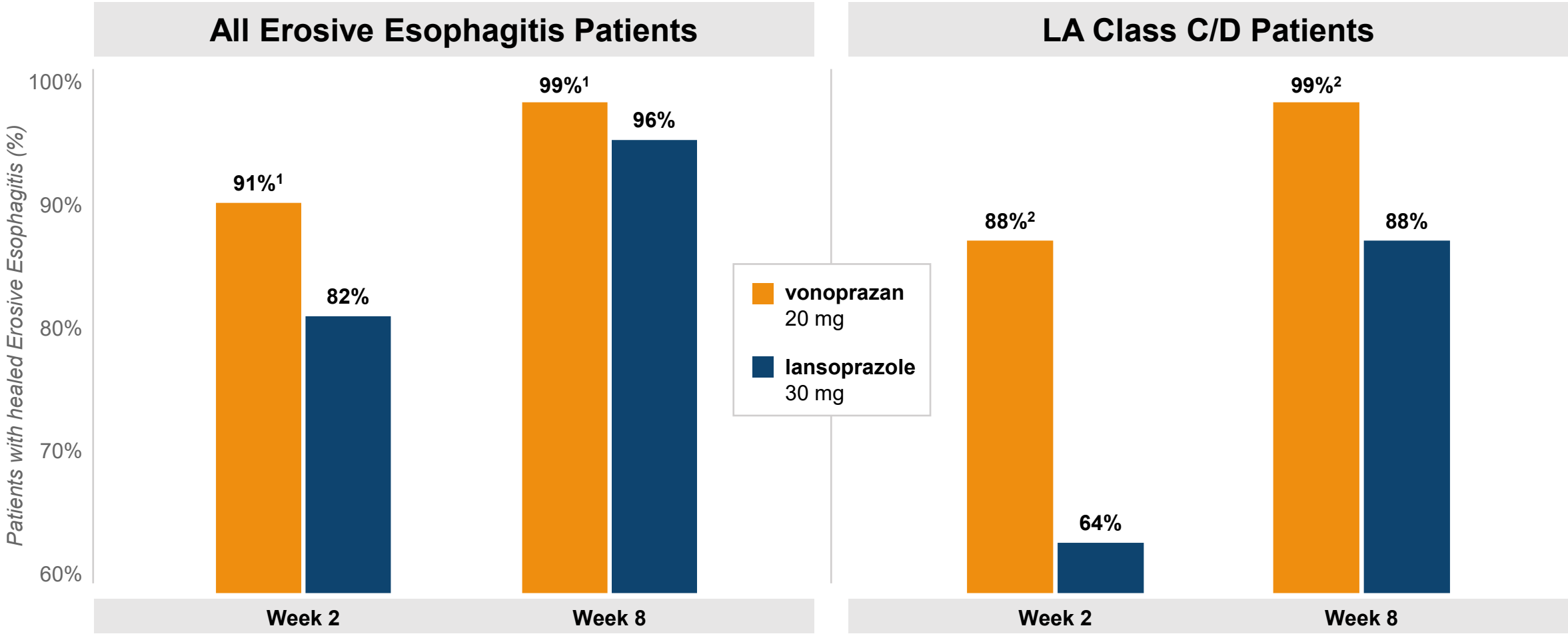
> **Improved efficacy**: healing/maintenance of healing of erosions and symptom control (rapid and durable)

Non-erosive Reflux Disease (NERD)

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

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

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

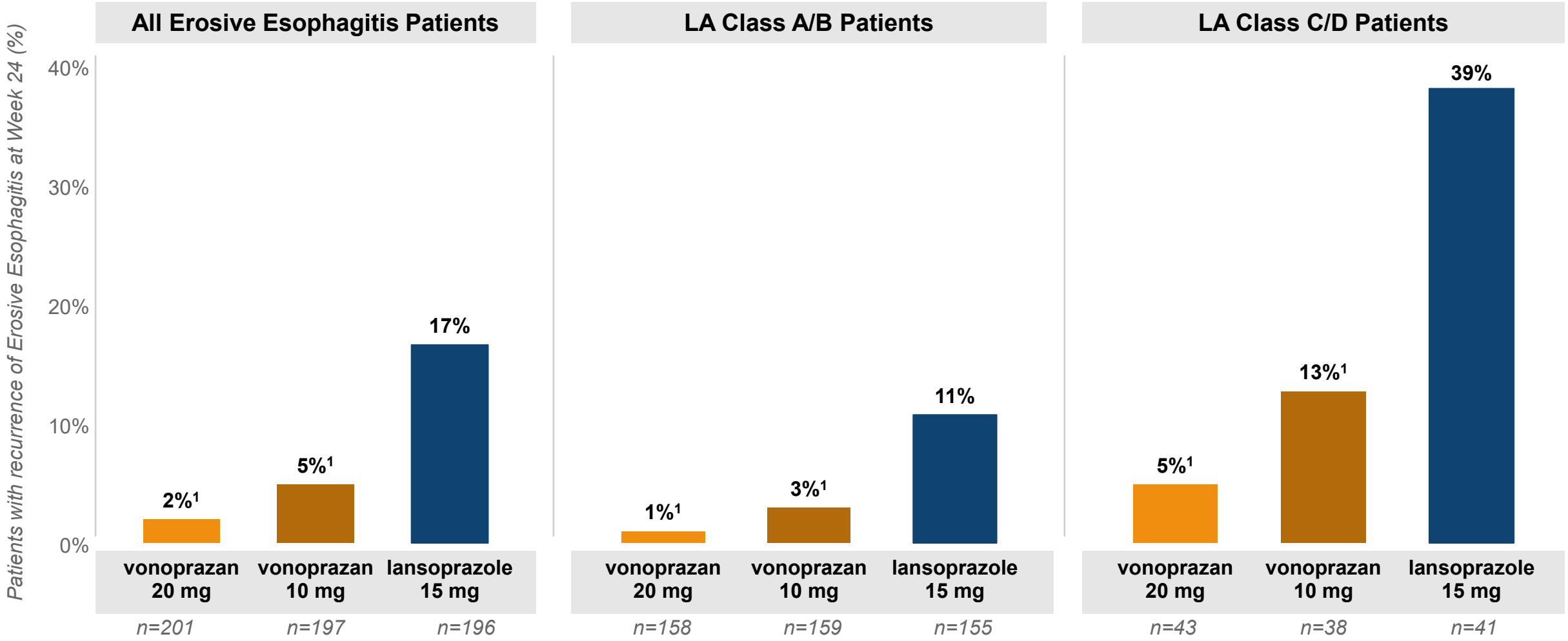


n=404, [1]Statistically significant ($p < 0.05$) for superiority versus lansoprazole

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

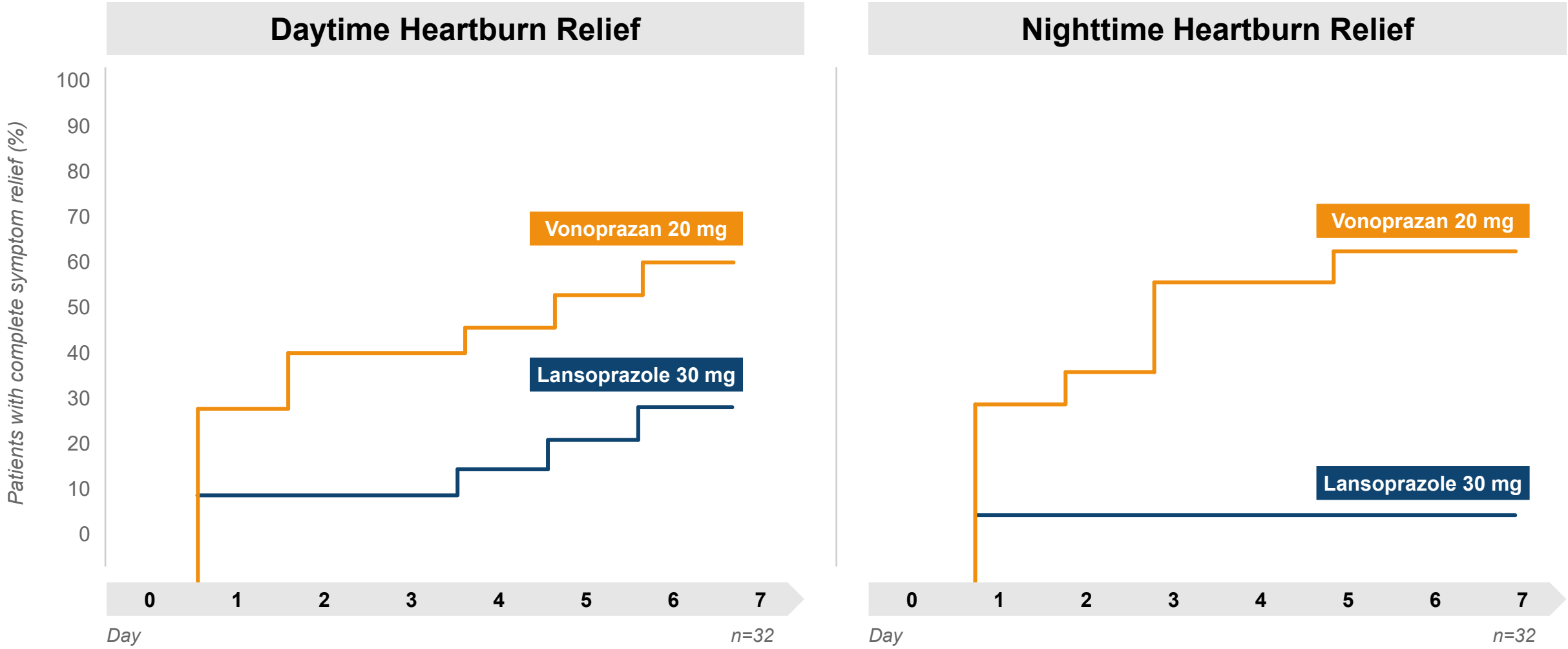
Japan Erosive Esophagitis phase 3: lower 6-month recurrence rates vs. PPI



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

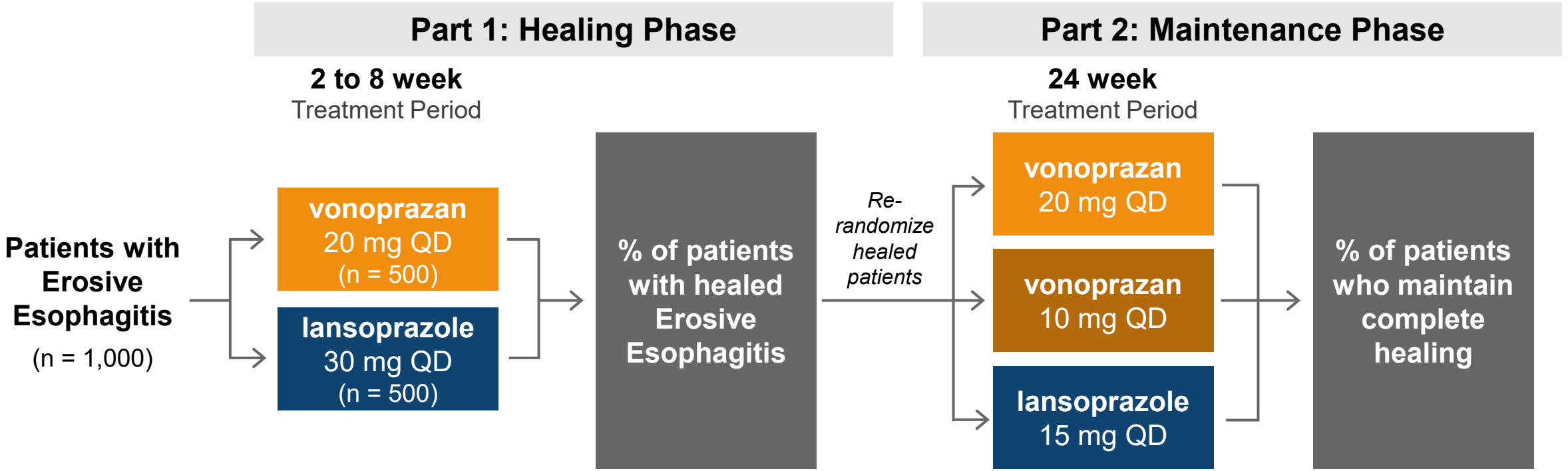
Ashida et al, Aliment Pharmacol Ther 2018;
Note: clinical trial met prespecified non-inferiority endpoint and post hoc superiority test

Faster and more complete heartburn relief vs. PPI



Oshima et al, AP&T 2018

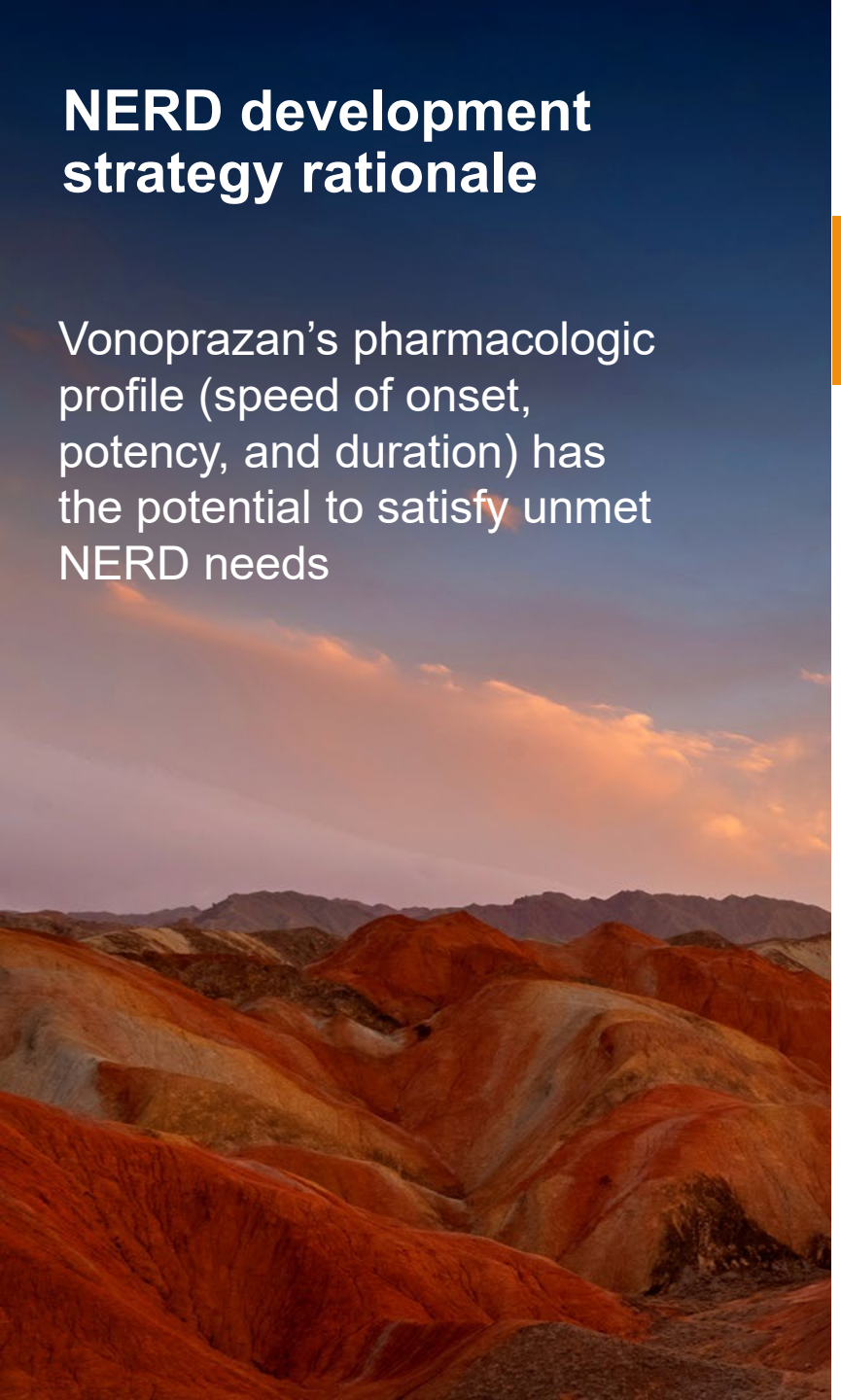
Phathom US/Europe Erosive Esophagitis phase 3 study design



Nov 2020 Enrollment completed; **2H21** Topline results expected

NERD development strategy rationale

Vonoprazan's pharmacologic profile (speed of onset, potency, and duration) has the potential to satisfy unmet NERD needs



Clear rationale for further NERD evaluation

- Significant patient 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

NERD development strategy

Phathom intends to pursue:

> a phase 2 on-demand study
> followed by a phase 3 study evaluating both vonoprazan continuous and on-demand dosing regimens

On-demand dosing

Utilize the unique PK/PD profile to achieve a flexible dosing regimen

Pharmacology of current products are not suitable for on-demand use:

- ✕ PPI slow onset not well-suited to on-demand dosing
- ✕ H2RAs have rapid onset but short duration and tachyphylaxis with repeat use

Continuous dosing

Apply lessons learned from the Japan studies to increase likelihood of success

Two Japan Ph 3 studies demonstrated trend in favor of vonoprazan:

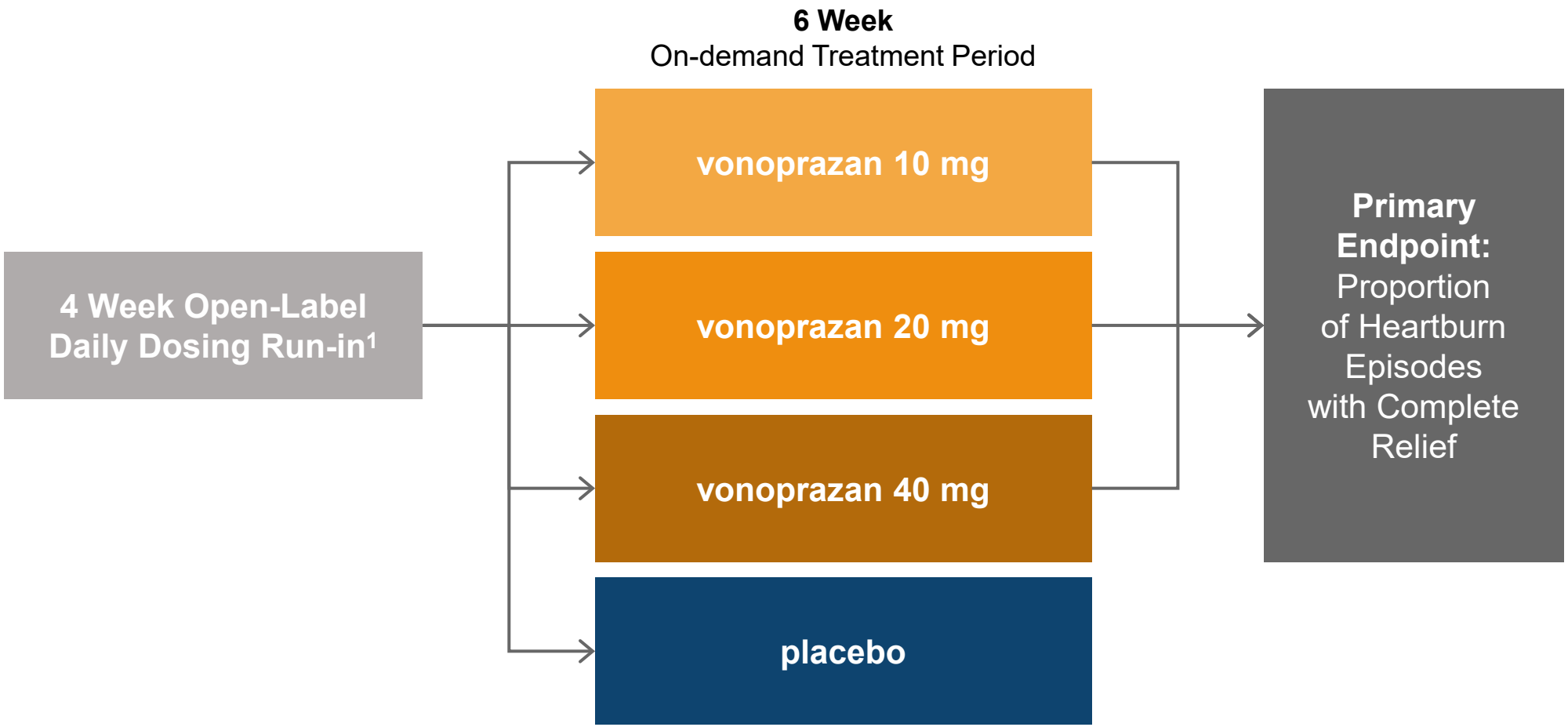
- p=0.2310 [10mg]; p=0.0504 [20mg][1]
- p=0.0643[2]

PPI Ph 3 NERD continuous dosing studies in Asia have had mixed results

All PPI Ph 3 NERD continuous dosing studies in US have succeeded

[1] Kinoshita (2016), n=827
[2] Kinoshita (2019), n=483

NERD phase 2 planned trial design – reviewed with FDA



Note: Trial initiation expected mid-2021

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

Vonoprazan for *H. pylori* infection

~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**

Eradication rates in the US have fallen to **<80%** **due to increasing antibiotic resistance**

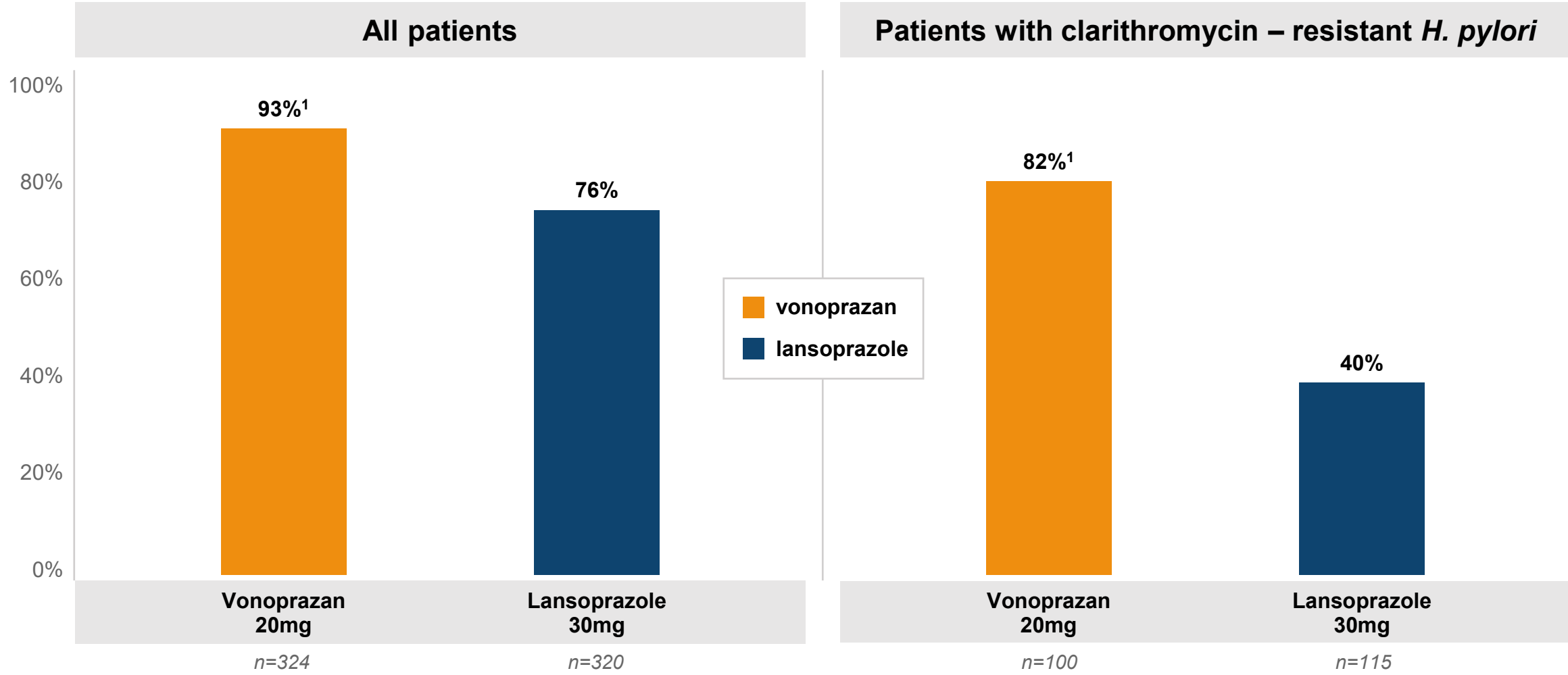
Antibiotic potency increases at higher pH

Vonoprazan-based regimens may restore eradication rates above 90% in the US and Europe, if vonoprazan is successfully developed and approved

Hooi Gastroenterology 2017; Graham et al 2018; Erah et al 1997

Japan phase 3: vonoprazan triple therapy demonstrated superiority to PPI therapy

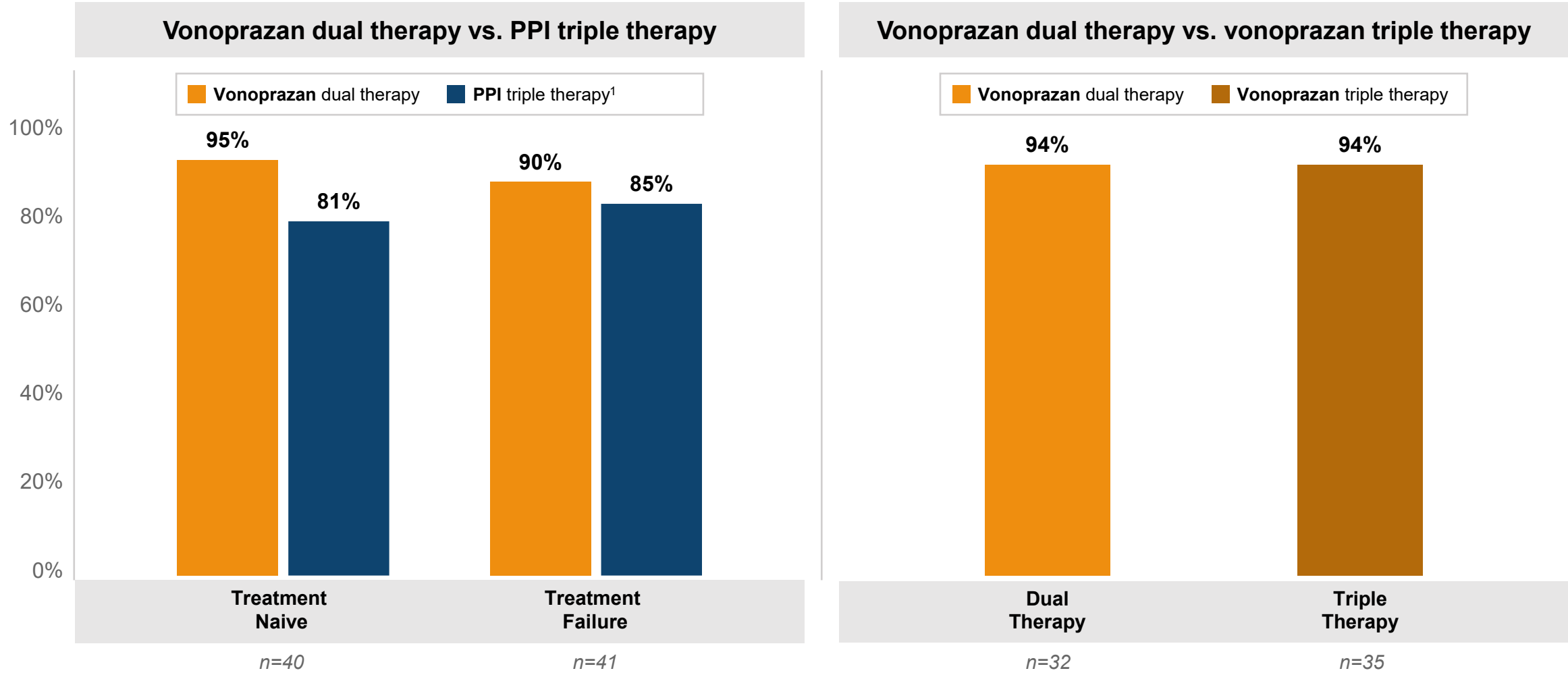
First-line triple therapy eradication rates of *H. pylori,* (combo with amoxicillin/clarithromycin)



[1] *p < 0.0001 for superiority of vonoprazan-based triple therapy to lansoprazole-based triple therapy*

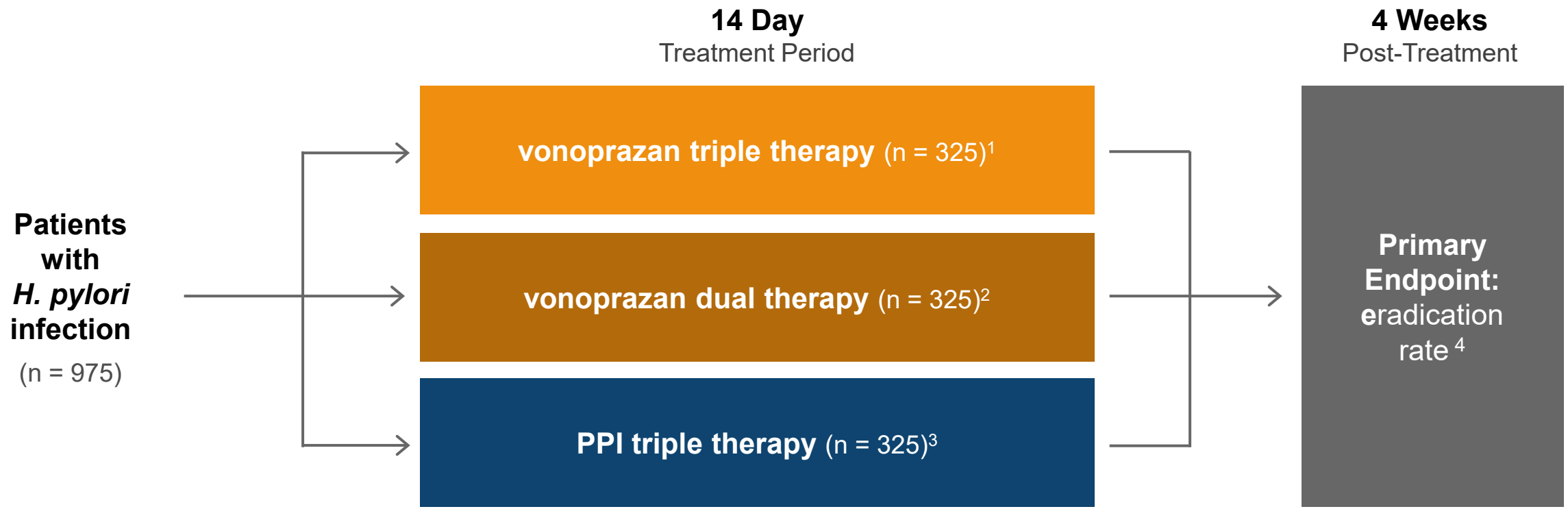
Murakami et al, Gut 2016.
Note: clinical trial met prespecified non-inferiority endpoint and post hoc superiority test

Vonoprazan demonstrated eradication rates >90% in dual therapy with amoxicillin



[1] Triple therapy includes PPI + Amoxicillin + Clarithromycin
Furuta, DDW 2016; Furuta, DDW 2018

Phathom US/Europe *H. pylori* phase 3 study design



Jan 2021 Enrollment expected to be completed; **2Q21** Topline results expected

[1]Vonoprazan 20 mg BID + amoxicillin 1 g BID + clarithromycin 500 mg BID
[2]Vonoprazan 20 mg BID + amoxicillin 1 g TID (partially blinded)
[3]Lansoprazole 20 mg BID + amoxicillin 1 g BID + clarithromycin 500 mg BID

Note: Diagnosis of infection and test of cure confirmed by 13C-urea breath test
[4] Primary analysis of non-inferiority excluding patients with infection resistant to clarithromycin and amoxicillin; key secondary analyses of superiority in patients with clarithromycin resistant infection and in all comers

Vonoprazan safety profile similar to PPIs

>7,000 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

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]
- > **2 out of 3 physicians are concerned about long-term use of PPIs**[2]

P-CABs

Introduced in Japan **2015**

Takecab® (vonoprazan)

> **>$725M** net sales in Japan for the 12 months ended Sep. 30, 2020[3]

[1] SRI, June 2020 | Qualitative patient interviews
[2] SRI, August 2020 | N= 83 US HCPs (41 GI & 42 PCP)
[3] US dollars based on the September 30, 2020 conversion rate of 0.0095 dollars to one yen

Japanese experience signals potential success for the US

Current US market has many similarities to the Japanese market at launch of Takecab

Heavily genericized market

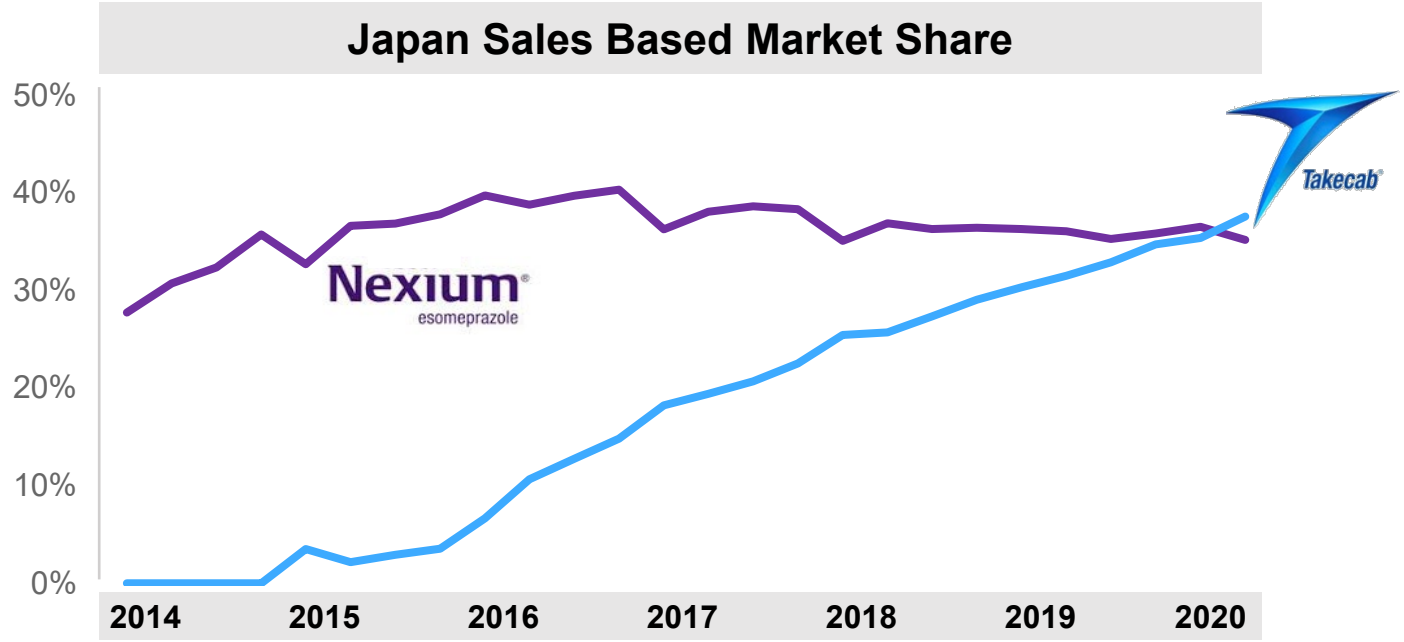
PPI dissatisfaction/patient switching

Declining *H. pylori* eradication rates

MARKET LEADER IN JAPAN

DOCUMENTED COST-EFFECTIVENESS

PREMIUM BRANDED PRICE



Japan Experience

- Vonoprazan has achieved >$725M in net sales[1] and 38% value-based market share driven predominantly by volumetric gains from generic competitors
- Majority of vonoprazan sales are in GERD
- Vonoprazan-based regimens achieved ~80% *H. pylori* market share in 2nd full year

[1] Net sales for the 12 months ended September 30, 2020 and corresponding conversion rate of 0.0095 USD : 1 JPY; IQVIA Quarterly MIDAS data (as of 2Q20); Deguchi et al Digestion 2019

Minimal US branded competition anticipated across all potential indications

UNCONTESTED PIPELINE

> No products in late-stage development in the US or EU

LACK OF NOVEL SOLUTIONS

> Other products introduced in the US are variations of old regimens

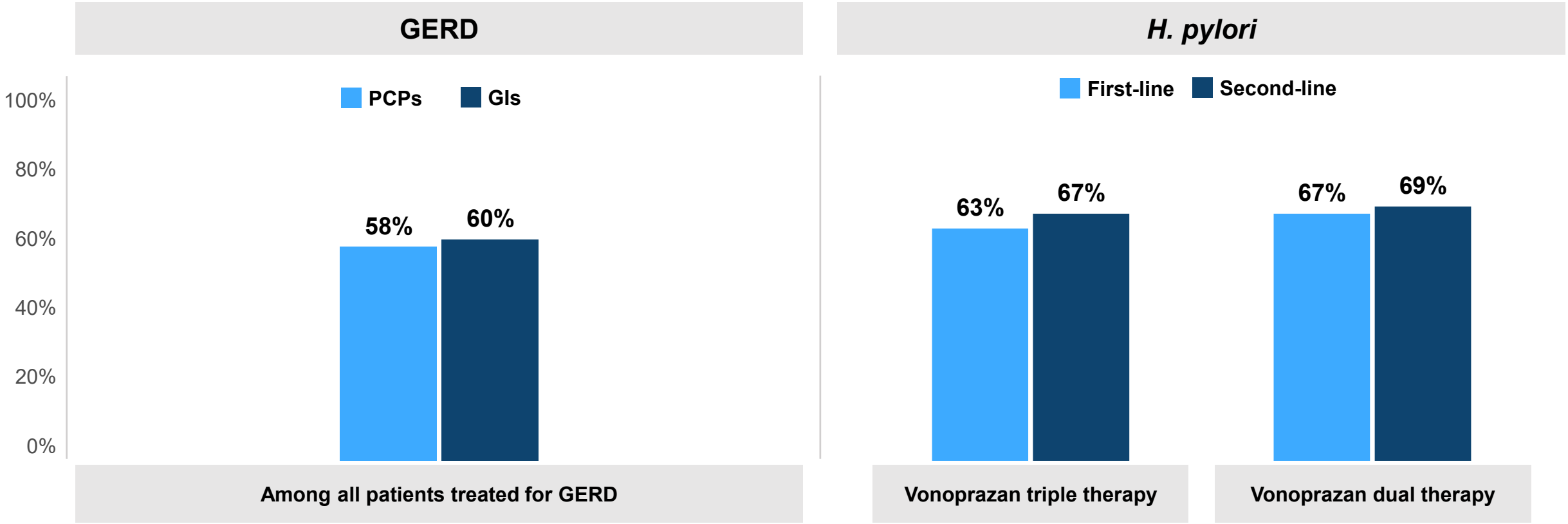
CATEGORY DIFFERENTIATION

> P-CABs in development in Asia have a clinical profile similar to PPIs and/or a short half-life and a different chemical structure compared to vonoprazan

Promotionally sensitive market with little to no branded competition + **Minimal competition for share of voice** + **Innovation starved market**

US physicians express strong preference to prescribe vonoprazan

US physician preference share, %

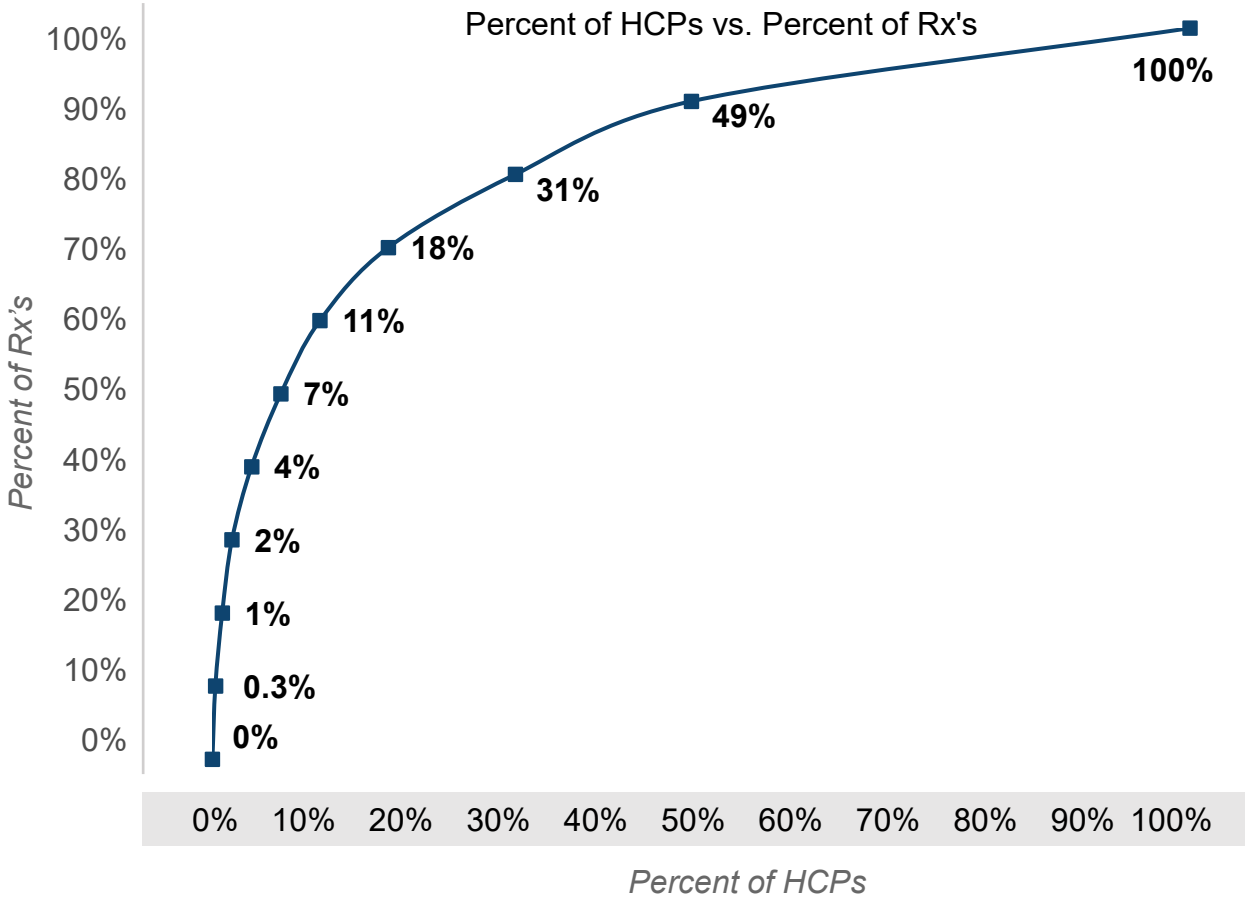


2019 US SURVEY OF 100 GASTROENTEROLOGISTS AND 100 PRIMARY CARE PHYSICIANS

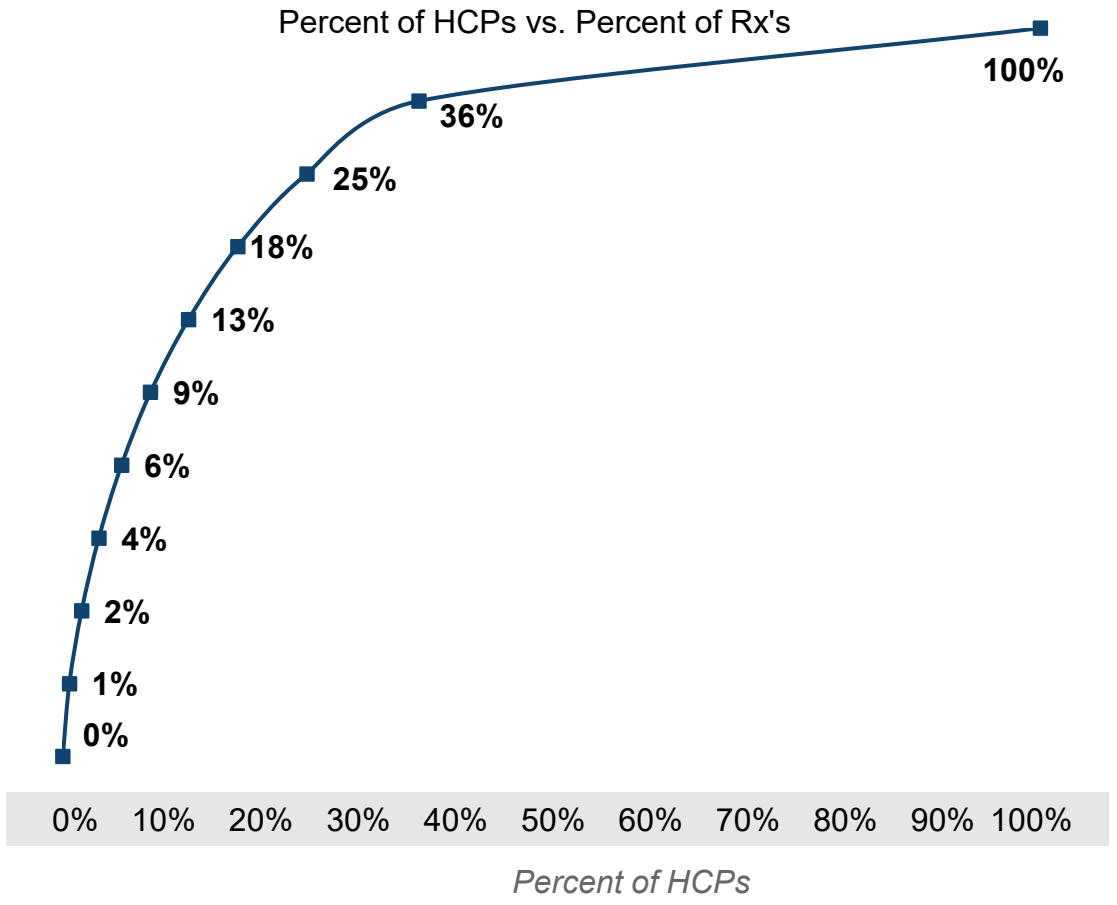
Life Science Strategy Group, August 2019 | N= 200 US HCPs (100 GI & 100 PCP)

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)

Pursuing access to large patient segments with minimal restrictions

Large patient population in need

- ~65M people with GERD; ~50% of treated patients progress lines of therapy annually
- Declining *H. pylori* eradication rates with current regimens

Health system utilization

- Erosive esophagitis recurrence and *H. pylori* eradication failures utilize additional healthcare resources

Lack of alternatives

- 25+ years of lack of alternatives in GERD

Access drivers[1]

- Health plan objectives to meet unmet needs
- Clinical superiority vs. PPIs
  - Lower Erosive Esophagitis recurrence rates
  - Faster Erosive Esophagitis healing
  - Greater *H. pylori* eradication
- Advanced pharmacology
  - Rapid, potent, and durable acid control
- Novel MOA – different from all other approaches

Potential branded price commensurate with value

- Value proposition to address unmet need
- Market analogues have achieved broad access
  - e.g., Dexilant (PPI with a non-differentiated MOA): WAC of $9.69/dose[2]

[1] Subject to data from ongoing phase 3 studies
[2] First Databank database as of Dec 2020

HCPs see vonoprazan differently from PPIs… potent acid suppression that has the potential to deliver

- Fast action
- Superior efficacy
- Durability

Significant commercial opportunity

Opportunity

HP + EE + NERD

Large Populations + Unmet Need

Strong Physician Preference + Concentrated High Prescribers

Minimal Branded Competition + High Share of Voice

Novel Profile + Potential for Premium Price

Financial highlights

Cash and cash equivalents (as of 12/31/2020)[1, 2]	$287.5M
Debt (as of 12/31/2020)[1]	$50.0M
Common shares issued (as of 12/31/2020)[1, 3]	31,262,769

[1] December 31, 2020 Form 10-K
[2] Includes $88,830,000 net proceeds from December 16, 2020 public offering of common stock
[3] Includes 2,250,000 shares issued in December 16, 2020 public offering of common stock

Phathom PHARMACEUTICALS

Going Beyond

to advance treatments for patients with acid related disorders

Vonoprazan

- Significant unmet medical need
- Large innovation starved markets
- Differentiated MOA and product profile
- De-risked asset with established success in Japan
- Topline results from two pivotal trials in 2021
- HCP and patient enthusiasm