

# Prevalence of *Helicobacter Pylori* Infection Among Hispanics Living in Puerto Rico Undergoing Bariatric Surgery

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## BACKGROUND

- Obesity is a public health problem that affects developed and developing countries.
- Obesity prevalence has been increasing in the US with current prevalence estimates of 33% of the population affected, leading to serious comorbidities.
- Obesity in PR has a prevalence of 30-35% in the population.
- Bariatric surgery is the goal standard therapy after failure to diet, exercise and medication.
- Roux-en-Y gastric bypass is one of the most common procedures and has a good predictable with satisfactory outcome.
- Helicobacter Pylori* (HP) infection in bariatric patients has been linked to post-surgical foregut symptoms, marginal ulcers, and an increased incidence rate of viscus perforation.
- In the general population, HP infection leads to a variety of gastro-duodenal diseases such as peptic ulcer disease, chronic gastritis, gastroesophageal reflux disease, mucosa-associated lymphoid tissue lymphoma, insulin resistance, obesity and gastric cancer.
- Gastric Cancer (GC) is one of the top ten cancer-related deaths in PR. HP is considered a class I carcinogen with current estimates suggesting that 50-75% of all deaths from GC are related to this infection.
- Feco-prevalence of *H. pylori* infections in this population has not been studied.

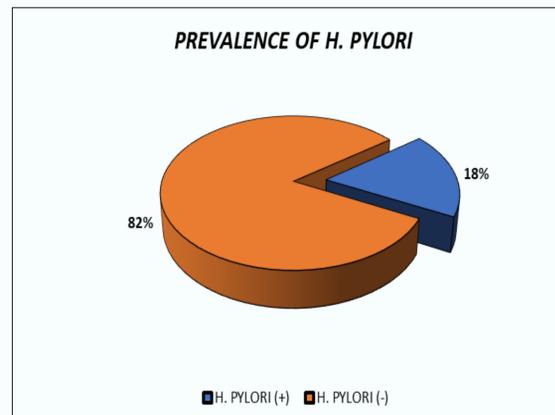
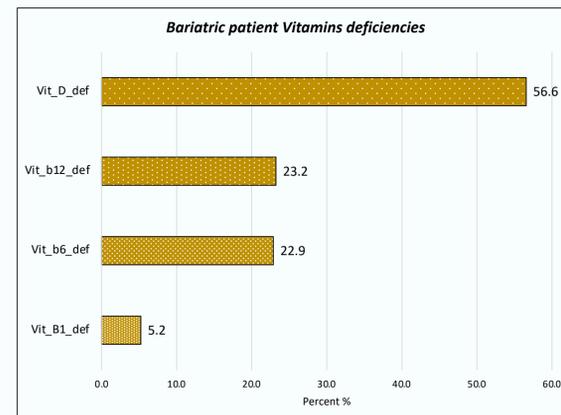
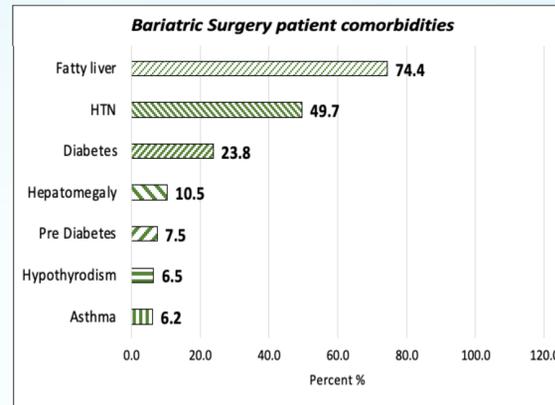
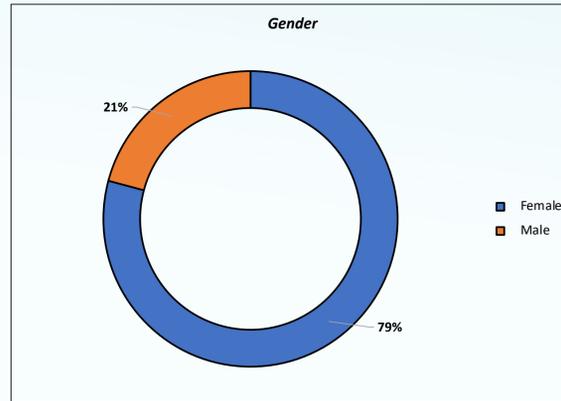
## SPECIFIC AIMS

- The primary goal of our study is to determine the prevalence of HP infection among patients undergoing bariatric surgery in Puerto Rico.

## METHODS

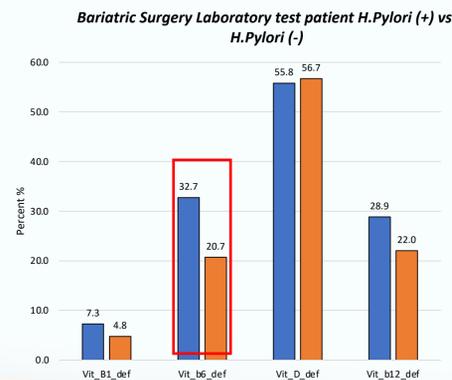
- All patients from January 2018 to June 2020 undergoing surgery for weight loss, underwent preoperative evaluation at the University of Puerto Rico Hospital Dr. Federico Trilla where a **retrospective cross-sectional chart review** was conducted.
- All subjects were evaluated for *Helicobacter Pylori* (HP) infection with their active disease and/or eradication were confirmed with the HP stool antigen assay.
- The Feco-positivity was determined using stool *H. pylori* antigen immunoassay.
- Helicobacter pylori* feco-prevalence was estimated with 95% confidence using the proportion z-test.
- Pearson's Chi-Square test was used to determine associations between the variables.

## RESULTS



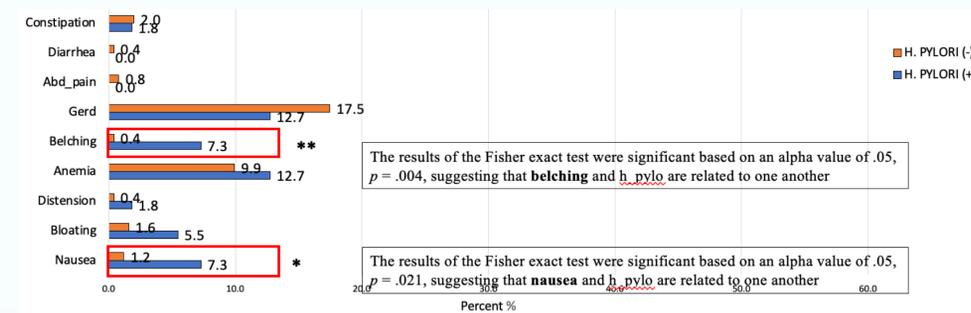
Samples	Responses	n	Proportion	SD	SE
HP	55	307	.18	0.38	0.03

Note.  $z = -4.85, p < .001, 95.00\% \text{ CI: } [-.18, -.08]$



h_pylo	vit_b6_def		$\chi^2$	df	p
	No	Yes			
Yes	37[42.42]	18[12.58]	3.69	1	.05
No	199[193.58]	52[57.42]			

Note. Values formatted as Observed[Expected]. alpha value of .05



The results of the Fisher exact test were significant based on an alpha value of .05,  $p = .004$ , suggesting that **belching** and **h\_pylo** are related to one another

The results of the Fisher exact test were significant based on an alpha value of .05,  $p = .021$ , suggesting that **nausea** and **h\_pylo** are related to one another

## RESULTS

- A total of 307 medical records of patients undergoing bariatric surgery were reviewed.
- The mean age of the study population was  $42 \pm 12$  years, of whom 79.1% were female.
- The overall feco-prevalence of *H. pylori* was 18.0%, with nausea and belching the most prevalent symptoms reported ( $P < 0.05$ )
- A 90% eradication rate was observed with the first treatment course.
- The prevalence of vitamin B6 deficiency in patients with HP positive was 32% compared to patients with HP negative 20%, with a p-value of 0.05.

## DISCUSSION

- HP feco-prevalence in bariatric surgery patients is estimated to be 18%, less than the previously estimated prevalence of *Helicobacter pylori* using seroprevalence of Hispanics in Puerto Rico.
- However, the seroprevalence of HP infection is less sensitive and specific to disease than the feco-prevalence.
- Therefore, further investigation is warranted about HP feco-prevalence in the general population of Puerto Rico.
- There was a statistically significant increase in the prevalence of vitamin B6 deficiency in patients with HP positive that has not previously been reported and warrants further investigation.

