

## INTRODUCTION

- *Helicobacter pylori* (*H. pylori*) has a prevalence of approximately 35% in the United States.
- Infection rates and antibiotic resistance are reported to be higher in immigrants from endemic areas such as Latin America.
- The updated ACG *H. pylori* guidelines in 2017 recommends bismuth based quadruple therapy as the first line treatment in a population with suspected clarithromycin resistance.
- The aim of this study was to evaluate the effectiveness of bismuth quadruple therapy compared with clarithromycin triple therapy in a predominantly Hispanic population on the US-Mexico border, as well as to assess the impact of insurance status and the 2017 ACG guidelines on the choice of treatment regimen.

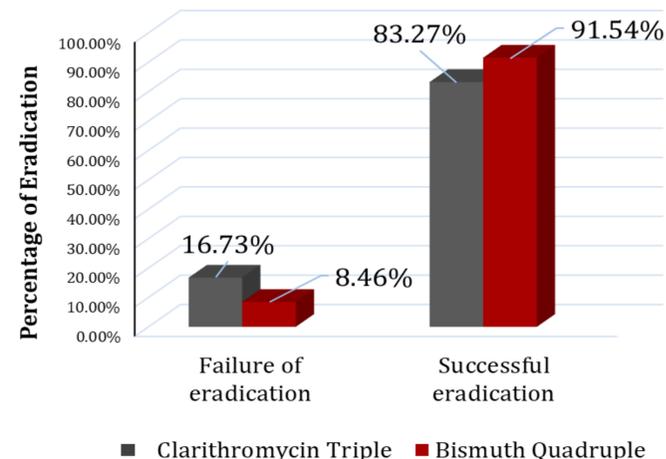
## METHODS

- A retrospective cohort study of adult patients with *H. pylori* infection treated with clarithromycin triple therapy or bismuth quadruple therapy at a tertiary care county hospital on the US-Mexico border from January 2009 to March 2022 was conducted.
- Patients with unknown treatment regimens or an absence of an eradication test were excluded from the analysis.
- A logistic regression model adjusting for propensity scores using the inverse probability treatment weighting method was used to determine the relationship between eradication status and the treatment regimen.
- The analyses were adjusted for, age, gender, ethnicity, insurance, diabetes, smoking, illicit drug use, and PPI use.

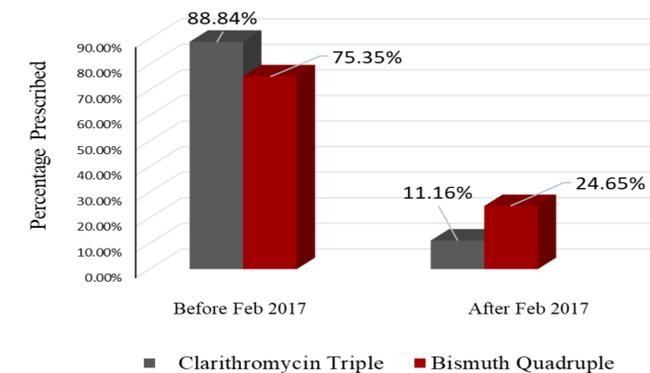
Factor	Initial Treatment Regimens		p-value
	Bismuth Quadruple 201	Clarithromycin Triple 737	
<b>Age (years)</b>			0.017
Age at testing, mean (SD)	53.92 (13.44)	51.33 (13.66)	
<b>Gender</b>			0.08
Female	132 (65.67%)	532 (72.18%)	
Male	69 (34.33%)	205 (27.82%)	
<b>Ethnicity</b>			0.54
Non-Hispanic	16 (7.96%)	69 (9.36%)	
Hispanic	185 (92.04%)	668 (90.64%)	
<b>Insurance status</b>			0.003
No	42 (20.90%)	234 (31.75%)	
Yes	159 (79.10%)	503 (68.25%)	
<b>Diabetes</b>			0.93
No	151 (75.12%)	550 (74.63%)	
Yes	50 (24.88%)	187 (25.37%)	
<b>Smoking history</b>			0.76
No	165 (82.09%)	594 (80.82%)	
Yes	36 (17.91%)	141 (19.18%)	
<b>Illicit drug use</b>			0.58
No	195 (97.50%)	718 (98.09%)	
Yes	5 (2.50%)	14 (1.91%)	
<b>PPI use before diagnosis</b>			1
No	149 (75.63%)	547 (75.66%)	
Yes	48 (24.37%)	176 (24.34%)	
<b>Type of eradication test</b>			<0.001
Endoscopic biopsy	25 (12.44%)	69 (9.39%)	
Stool test	120 (59.70%)	302 (41.09%)	
Breath test	56 (27.86%)	364 (49.52%)	
<b>Result of eradication test</b>			0.004
Positive (failure of eradication)	17 (8.46%)	123 (16.73%)	
Negative (successful eradication)	184 (91.54%)	612 (83.27%)	
<b>Gastric cancer</b>			1
No	198 (99.50%)	725 (99.04%)	
Yes	1 (0.50%)	7 (0.96%)	

SD: standard deviation; PPI: proton pump inhibitor  
Table 1: Comparisons of characteristics between initial treatment regimens

### Eradication comparison between Bismuth Quadruple therapy and Clarithromycin Triple therapy



### Impact of 2017 *H. pylori* guidelines



## RESULTS

- A total of 938 patients were included, 201 patients (21.4%) in the bismuth quadruple regimen group and 737 patients (78.6%) in the clarithromycin triple regimen group.
- Mean age was 51 years, female (70.8%), Hispanic (90.4%), and non-insured patients (29.4%).
- The *H. pylori* eradication rate with quadruple therapy was significantly higher compared with triple therapy (91.5% vs 83.2% p=0.004) in unadjusted analysis and after adjusting for propensity scores (OR 2.43; 95% CI: [1.38 - 4.27], P=0.002).
- Following the 2017 ACG guidelines, the rate of using bismuth quadruple as the first line therapy increased from 11.1% to 24.6% (p< .0001). Furthermore, bismuth quadruple regimen therapy was more likely to be prescribed for insured (79.1%) compared with non-insured (20.9%) patients (p< 0.001)

## CONCLUSION

- In a predominantly Hispanic population, bismuth quadruple therapy is more effective in *H. pylori* eradication compared with clarithromycin triple regimen.
- The 2017 ACG guidelines enhanced prescribing of bismuth quadruple therapy. However, insurance status seems to influence the choice of recommended regimen in this high-risk population.