

Jesus Guzman, MD, M Ammar Kalas, MD, The Dang, DO, Marcus Esteban, MD, Amir Saeed, MS, Kathan Trivedi, MS, Romeeka Siddiqui, MS, Shaheer Ali, MS, Ihsan Al-Bayati, MD, Jerzy Sarosiek, MD, PhD, Nawar Hakim, MD, Luis Alvarado, MS, Alok Dwivedi, PhD, Marc Zuckerman, MD, Sherif E. Elhanafi, MD

Texas Tech University Health Sciences Center. El Paso, Texas, USA

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.

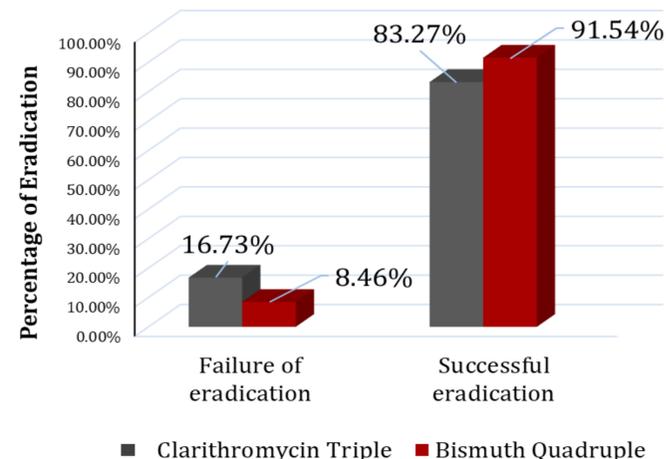
METHODS

- 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.

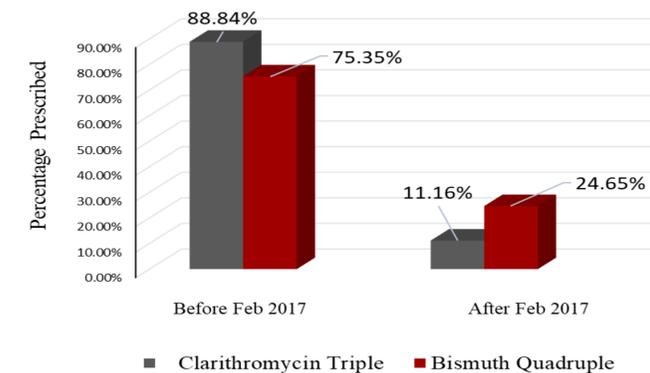
Factor	Initial Treatment Regimens		p-value
	Bismuth Quadruple 201	Clarithromycin Triple 737	
N			
Age (years)			0.017
Age at testing, mean (SD)	53.92 (13.44)	51.33 (13.66)	
Gender			0.08
Female	132 (65.67%)	532 (72.18%)	
Male	69 (34.33%)	205 (27.82%)	
Ethnicity			0.54
Non-Hispanic	16 (7.96%)	69 (9.36%)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