



# Evaluating knowledge and approach towards *Helicobacter pylori* diagnosis and management among primary care physicians in Cameroon, West Africa



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## INTRODUCTION

- Low- and middle-income countries have a high prevalence of *Helicobacter pylori* (*H. pylori*) infection, with acquisition mostly in early childhood.
- Rate of resistance to antibiotics used in treating *H. pylori* infection is increasing worldwide.
- Recent studies conducted in Africa have shown especially high rates of resistance to first line antibiotics used to treat *H. pylori* such as Amoxicillin, Metronidazole and Clarithromycin
- The majority of *H. pylori* infections are diagnosed and treated by primary care physicians (PCPs).
- We sought to assess the knowledge and practices of PCPs in the diagnosis and management of *H. pylori* infection in Cameroon.

## METHODS

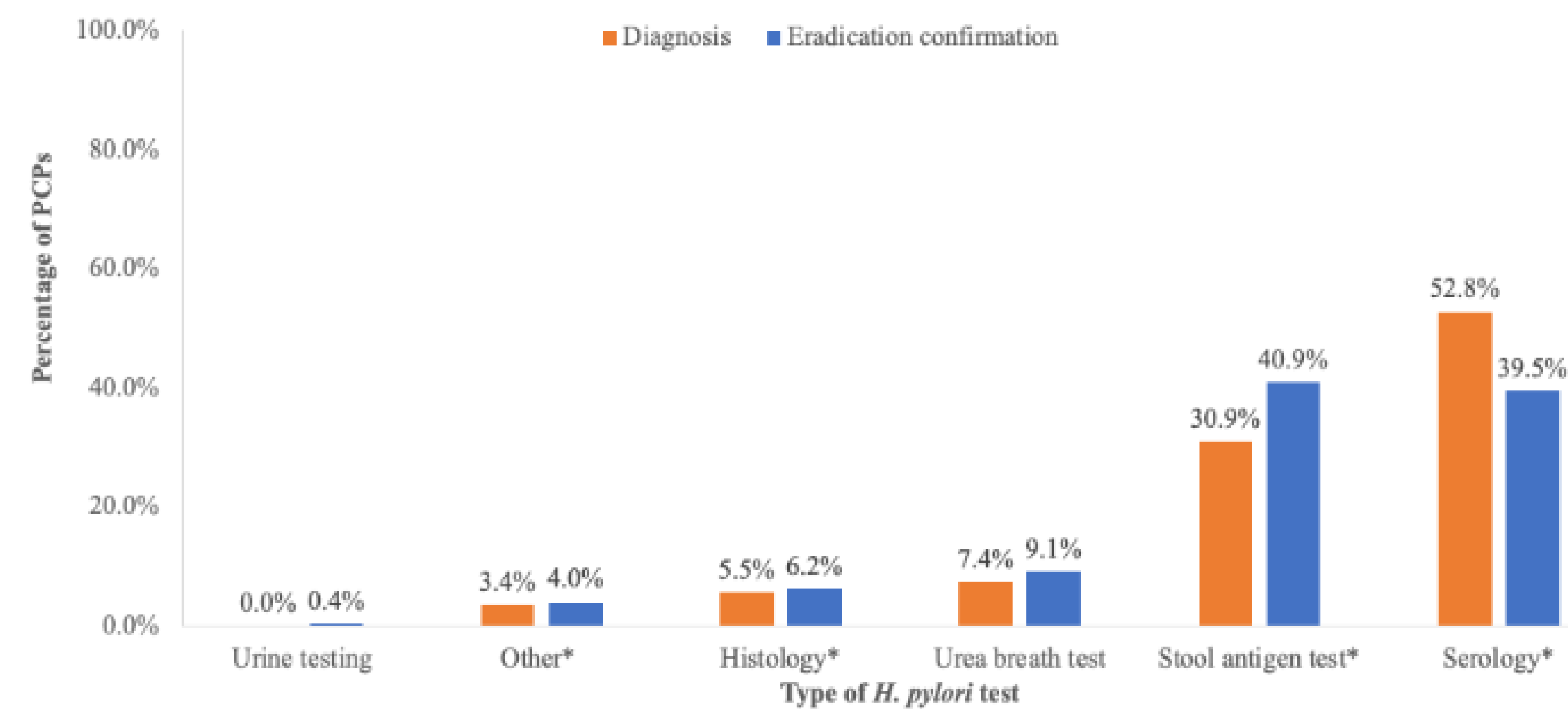
- A hospital-based cross-sectional study was carried out in four randomly selected regions of Cameroon, from November 2021 to June 2022.
- In each of the selected regions, PCPs were recruited by non-probability convenience sampling and interviewed using a pre-structured questionnaire on their knowledge and approach towards diagnosis and management of *H. pylori* infection.
- Chi-square, Fisher exact test, and Student's t-tests were performed for descriptive analyses.
- Multivariable logistic regression was used to examine associations between knowledge and practice, with the model adjusted by age of the PCPs, geographic region, number of patients, and years in practice. Analysis was performed in SAS version 9.4.

## RESULTS

TABLE 1: Primary care physicians demographics characteristics.

Total number of Primary Care Physicians (n=382)	291 (5.0)
Age, mean (SD)	n (%)
21 – 25 years old	64 (17.5)
26 – 30 years old	218 (59.7)
30 – 59 years old	83 (22.7)
Gender	
Male	148 (38.7)
Female	229 (60.0)
Prefer not to say	5 (1.3)
School of training	
FHS Bamenda	67 (17.5)
FHS, Buea	99 (25.9)
FMBS, Yaounde	23 (6.0)
FMPS Douala	81 (21.2)
ISS, UDM Bagante	31 (8.1)
ISTM Nkolondom	13 (3.4)
Other medical schools	68 (17.8)
Region of Practice	
Littoral	144 (37.7)
Northwest	74 (19.4)
Southwest	95 (24.9)
West	69 (18.1)
Year in Practice, mean (SD)	3.2 (3.5)
Year in Practice	
Less than 2 years	122 (33.4)
2 – 6 years	210 (57.3)
6 or more years	33 (9.0)
Number of patients per day, mean (SD)	12.9 (7.4)
Number of patients per day	
<= 10 patients	197 (54.12)
10 – 20 patients	128 (35.2)
20 or more patients	39 (10.7)
Attended postgraduate training and/or conferences on <i>H. pylori</i>	
No/Unsure	330 (86.8)
Yes	50 (13.2)

Figure 1: *Helicobacter pylori* diagnostic, and eradication confirmation tests used with the greatest frequency, in Cameroon, 2022.



Notes: \* - p-value <0.05.

Table 2: Unadjusted and adjusted odds ratio of gaps between the practices of PCPs and what they think the recommended guidelines are on *H. pylori* indications for testing with serology, stool antigen test, or urea breath test,

Testing	%	OR (95% CI)	P-value	aOR (95% CI)	P-value
<b>Serology</b>					
Knowledge about the recommended guidelines	67.3	1 [Reference]		1 [Reference]	
Practices	30.1	0.21 (0.14 – 0.33)	<0.0001	0.25 (0.15 – 0.41)	<0.0001*
<b>Stool antigen test</b>					
Knowledge about the recommended guidelines	47.4	1 [Reference]		1 [Reference]	
Practices	10.4	0.13 (0.07 – 0.23)	<0.0001	0.17 (0.09 – 0.32)	<0.0001*
<b>Urea breath test</b>					
Knowledge about the recommended guidelines	11.5	1 [Reference]		1 [Reference]	
Practices	1.3	0.10 (0.02 – 0.43)	0.0020	0.13 (0.03 – 0.58)	0.0072*

Abbreviations: OR – odds ratio; aOR – adjusted odds ratio; CI – confidence interval; PCP – primary care physicians.  
Notes: a – adjusted by age of the PCPs, geographic region, number of patients, and years in practice.

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## RESULTS

- Three hundred and eighty-two PCPs were included in the analysis.
- Majority of respondents (60.0%) were males, between the ages of 26 – 30 years old (59.7%), reported having 2 – 6 years in practice (57.3%), saw an average of less than 10 patients per day (54.1%) and had not attended a postgraduate training course and/or conference on *H. pylori* (86.8%).
- 80.0% of PCPs reported that *H. pylori* infection is the cause of GERD symptoms, and 42.0% reported that *H. pylori* infection is the main cause of dyspeptic symptoms.
- The dominant diagnostic tests used for *H. pylori* were serology (52.8%) and stool antigen (30.9%).
- The most commonly prescribed antibiotics for *H. pylori* eradication were Amoxicillin (83.3%), Clarithromycin (73.6%), and Metronidazole (64.7%).
- The most frequently used first line therapies were Amoxicillin, Clarithromycin, Metronidazole and proton pump inhibitor (PPI) concomitant therapy (40.0%), Amoxicillin, Clarithromycin and PPI triple therapy (22.0%), and Amoxicillin, Metronidazole and PPI triple therapy (15.0%).
- Half of the practitioners (48.4%) treat *H. pylori* infection without a diagnosis of *H. pylori*.
- Over one third (38.2%) of PCPs do not treat asymptomatic individuals with a positive *H. pylori* test or would refer such cases to a gastroenterologist.
- Half of the PCPs (52.0%) request laboratory confirmation of *H. pylori* eradication, with the majority (57.9%) using serology.
- After failure of eradication with first-line therapy, 54.4% of PCPs refer to gastroenterologists for follow up.

## CONCLUSION

- Despite the country-specific high rates of antibiotic resistance, Amoxicillin, Metronidazole and Clarithromycin are still the most commonly prescribed drugs for the management of *H. pylori* infection
- There is significant overuse of serology as the diagnostic method of choice
- PCPs greatly misattribute *H. pylori* as the cause of GERD
- We recommend increasing *H. pylori* medical education programs.