



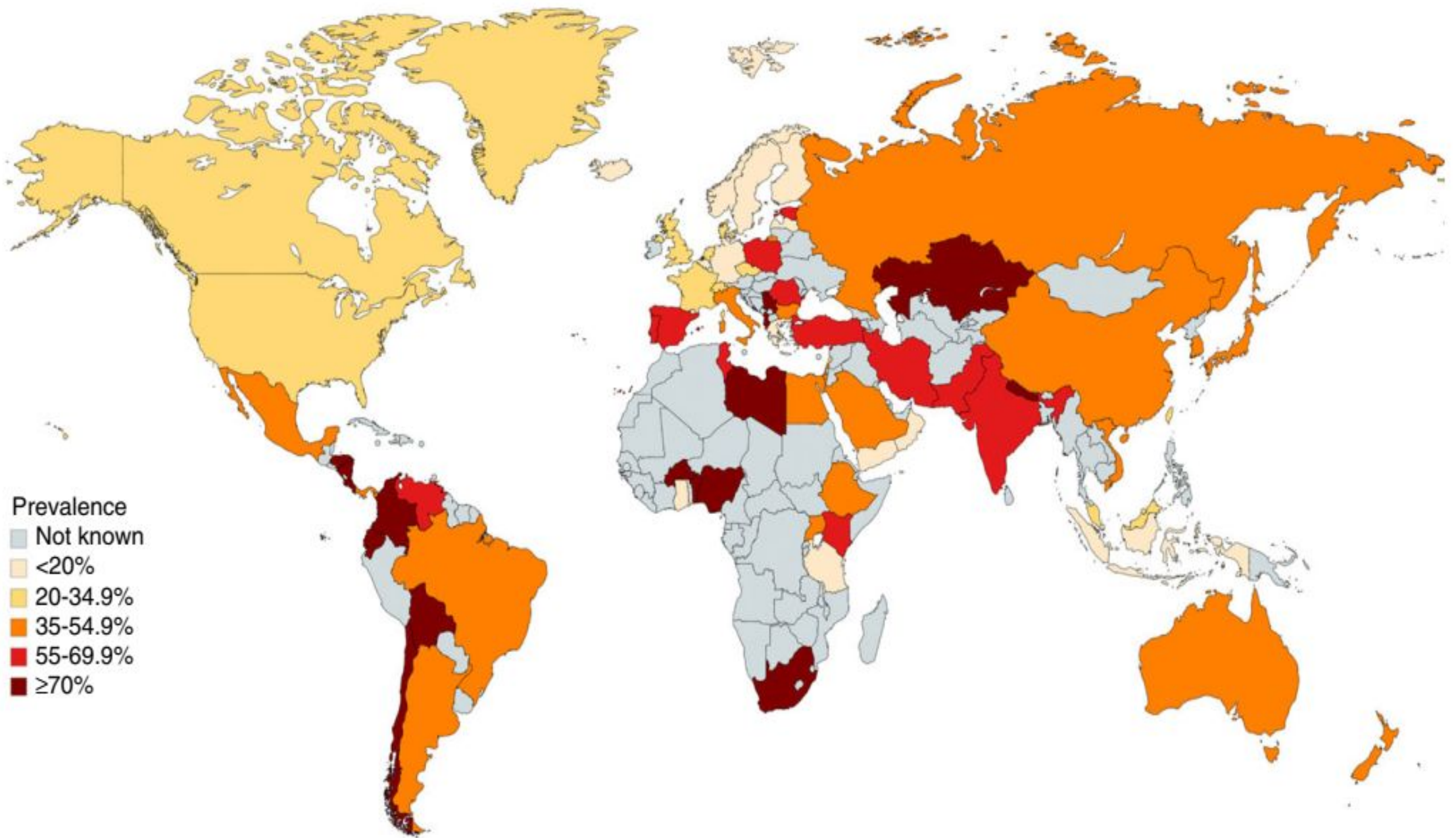
Helicobacter Pylori treatment

REALITY AND DIFFICULTIES IN SYRIAN POPULATION

Global Prevalence of *Helicobacter pylori* Infection: Systematic Review and Meta-Analysis



James K. Y. Hooi,^{1,*} Wan Ying Lai,^{1,*} Wee Khoon Ng,^{1,2,*} Michael M. Y. Suen,^{1,*}
Fox E. Underwood,³ Divine Tanyingoh,³ Peter Malfertheiner,⁴ David Y. Graham,⁵
Vincent W. S. Wong,¹ Justin C. Y. Wu,¹ Francis K. L. Chan,¹ Joseph J. Y. Sung,¹
Gilaad G. Kaplan,^{3,§} and Siew C. Ng^{1,§}



Graphical presentation of prevalence of *Helicobacter pylori* infection across the world

CME

ACG Clinical Guideline: Treatment of *Helicobacter pylori* Infection

William D. Chey, MD, FACG¹, Grigorios I. Leontiadis, MD, PhD², Colin W. Howden, MD, FACG³ and Steven F. Moss, MD, FACG⁴

Am J Gastroenterol 2017; 112:212–238; doi:10.1038/ajg.2016.563; published online 10 January 2017

QUESTION 2: WHAT ARE THE INDICATIONS TO TEST FOR, AND TO TREAT, *H. PYLORI* INFECTION?

Since all patients with a positive test of active infection with *H. pylori* should be offered treatment, the critical issue is which patients should be tested for the infection (strong recommendation, quality of evidence: not applicable),

QUESTION 2: WHAT ARE THE INDICATIONS TO TEST FOR, AND TO TREAT, *H. PYLORI* INFECTION?

All patients with

- active peptic ulcer disease (PUD) strong recommendation, quality of evidence: **high**
- a past history of PUD strong recommendation, quality of evidence: **high**
- low-grade (MALT) lymphoma strong recommendation, quality of evidence: **Low**
- endoscopic resection of early gastric cancer strong recommendation, quality of evidence: **Low**
- uninvestigated dyspepsia who are under the age of 60 years and without alarm features, non-endoscopic testing for *H. pylori* infection is a consideration.
- **conditional recommendation, quality of evidence: high for efficacy, low for the age threshold.**
- When upper endoscopy is undertaken in patients with dyspepsia, gastric biopsies should be taken to evaluate for *H. pylori* infection. Infected patients should be offered eradication therapy (**strong recommendation; high quality of evidence**)

► What is the best treatment protocol for Helicobacter Pylori infected patients in Syria ?

7



To answer this question we conduct
a blinded randomized trial



Available online at www.sciencedirect.com



Journal of Prosthodontic Research 55 (2011) 1–6

**Journal of
Prosthodontic
Research**

www.elsevier.com/locate/jpor

Review

Fifteen common mistakes encountered in clinical research

Glenn T. Clark DDS, MS^{a,1,*}, Roseann Mulligan DDS, MS^{b,1}

^a *Orofacial Pain and Oral Medicine Center, Herman Ostrow School of Dentistry, University of Southern California, Los Angeles, CA 90089-0641, USA*

^b *Community Dentistry Programs and Hospital Affairs, Herman Ostrow School of Dentistry, University of Southern California, Los Angeles, CA, USA*

Received 9 August 2010; accepted 23 August 2010

Available online 20 November 2010

1. Failure to carefully examine the literature for similar, prior research
2. Failure to critically assess the prior literature
3. Failure to specify the inclusion and exclusion criteria for your subjects
4. Failure to determine and report the error of your measurement methods.
5. Failure to specify the exact statistical assumptions made in the analysis.
6. Failure to perform sample size analysis before the study begins
7. Failure to implement adequate bias control measures
8. Failure to write and stick to a detailed time line
9. Failure to vigorously recruit and retain subjects.
10. Failure to have a detailed, written and vetted protocol
11. Failure to examine for normality of the data
12. Failure to report missing data, dropped subjects and use of an intention to treat analysis
13. Failure to perform and report power calculations
14. Failure to point out the weaknesses of your own study.
15. Failure to understand and use correct scientific language

The **significance level**, α is the type 1 error and is usually set at 5%.

The **power of the test**, $1-\beta$, is the probability of getting a significant result when the true difference between the proportions is d and is set at 80% or more, preferably 90%.

$$n = \frac{K[P_1(1-P_1) + P_2(1-P_2)]}{(P_1 - P_2)^2}$$





Volume 161

Number 2

January 15, 2005

American Journal of **EPIDEMIOLOGY**

Copyright © 2005 by The Johns Hopkins

Bloomberg School of Public Health

Sponsored by the Society for Epidemiologic Research

Published by Oxford University Press

12

SPECIAL ARTICLE

Ethics and Sample Size

The belief is widespread that studies are unethical if their sample size is not large enough to ensure adequate power , and they are unethical if they are too large



What about Pilot Study Sample Size?

13

Author	Recommended pilot trial sample size
Julious	24
Kieser and Wassmer	20–40
Browne	30

Dr. Gernot Wassmer: Professor for Medical Statistics, Institute for Medical Statistics, Informatics, and Epidemiology University of Cologne Germany

Choosing Drugs?

14





total number of patients 452

80 Naïve patients were recruited

- 179 patients were treated with Macrolides or Fluoroquinolones during past month
- 81 patients were not naïve (previously treated with one of those Helicobacter protocols during past 6 months)
- 62 patients were on daily usage of NSAID
- 24 patients refused to participate in trial
- 17 patients had liver cirrhosis
- 6 patients were refused because their age (younger than 18 or older than 80)
- 3 patients had CKD

Treatment with Clarithromycin 40

Drop out (loss to follow up)
3 follow up) 3

Completed 37

Treatment with Levofloxacin 40

Drop out (loss to follow up) 3

Completed 37

After finishing the treatment period, participants were invited to the clinic

- checking drugs side effects.
- compliance

All participants underwent upper endoscopy after 6 weeks of treatment completion. During endoscopy, five biopsies were retrieved as follows: two from the antrum, one from the incisura, and two from gastric body.

All biopsy samples were stained with hematoxylin and eosin and Giemsa in the pathology department. The pathologists were blinded to the treatment arm, and all results were confirmed by two pathologists.



العلاج المستخدم
☐ Levofloxacin ☐ Clarithromycin



الجمهورية العربية السورية
وزارة الصحة
الهيئة العامة لمستشفى دمشق
٢٠١١ - ٢٠١٢

Open Access

Research

BMJ
Open

NIH Public

Author Manuscript

Drug Inf J. Author

Published in final

Drug Inf J. 2011

Evaluation
Electronic

ges to an

coran¹



*مواقيت علاج
المستخدمة في
سنة أو أكثر من 80
معاوض* قصور قلب احت
المشاركة* استخدام مستمر لل

The chi-square goodness of fit test under the following conditions are met

-
-
-

The chi-square test is used to determine if the observed frequencies differ significantly from the expected frequencies.

qyrDrugResult						
PatientID	Protocol	Sex	age	Smoker	Alcholic	
1	2	2	35	☐	☐	
2	2	2	40	☐	☐	
3	1	2	32	☐	☐	
4	2	2	54	☐	☐	
5	1	2	24	☐	☐	
6	2	2	60	☐	☐	
7	1	2	32	☐	☐	
8	1	2	60	☐	☐	
9	1	2	25	☐	☐	
10	1	2	48	☐	☐	
13	2	2	23	☐	☐	
14	2	2	22	☐	☐	
15	1	1	21	☒	☐	
17	1	2	22	☐	☐	
19	2	1	33	☐	☐	
20	1	2	21	☐	☐	
21	1	2	25	☐	☐	
22	2	2	24	☐	☐	
23	1	2	48	☐	☐	
24	2	2	23	☒	☐	
25	1	1	37	☐	☐	
26	1	1	41	☐	☐	
27	1	2	39	☐	☐	
28	2	2	54	☐	☐	
29	1	1	36	☒	☐	
30	1	1	36	☐	☐	
31	2	2	32	☐	☐	
32	1	2	42	☒	☐	



لرقم التسلسلي

الاسم

الكنية

جوال

العمر

العنوان

تاريخ الزيارة الاولى

Clarithromycin
Levofloxacin

ليفو 28 حبة و 100 حبة
يسلين و 28 حبة ايزوستوب

Table 1: Baseline characteristics of patients

	Clarithromycin (%)	Levofloxacin (%)	<i>P</i>
Gender			
Male	15 (37.5)	14 (35)	1.00
Female	25 (62.5)	26 (65)	
Age (mean years±SD)	38.58±14.96	37.20±11.13	0.642
Smoking	6 (15)	5 (12.5)	1.00
Alcoholic	0	1 (2.5)	1.00
Drug side effects			
Anorexia	14 (35)	14 (35)	1.00
Nausea	16 (40)	16 (40)	1.00
Vomiting	4 (10)	1 (2.5)	0.359
Headache	12 (30)	5 (12.5)	0.056
Rash	1 (2.5)	6 (15)	0.048
Unpleasant taste	28 (60)	20 (50)	0.06

SD: Standard deviation

Results

20

```
> library(fmsb)
> oddsratio(13,27,11,29,conf.level=0.95)
```

	Disease	Nondisease	Total
Exposed	13	11	24
Nonexposed	27	29	56
Total	40	40	80

odds ratio estimate and its significance probability

```
data: 13 27 11 29
p-value = 0.6278
95 percent confidence interval:
 0.4865712 3.3114898
sample estimates:
[1] 1.26936
```

Treatment regimens using Clarithromycin or Levofloxacin were equally ineffective in the treatment of H. pylori infections

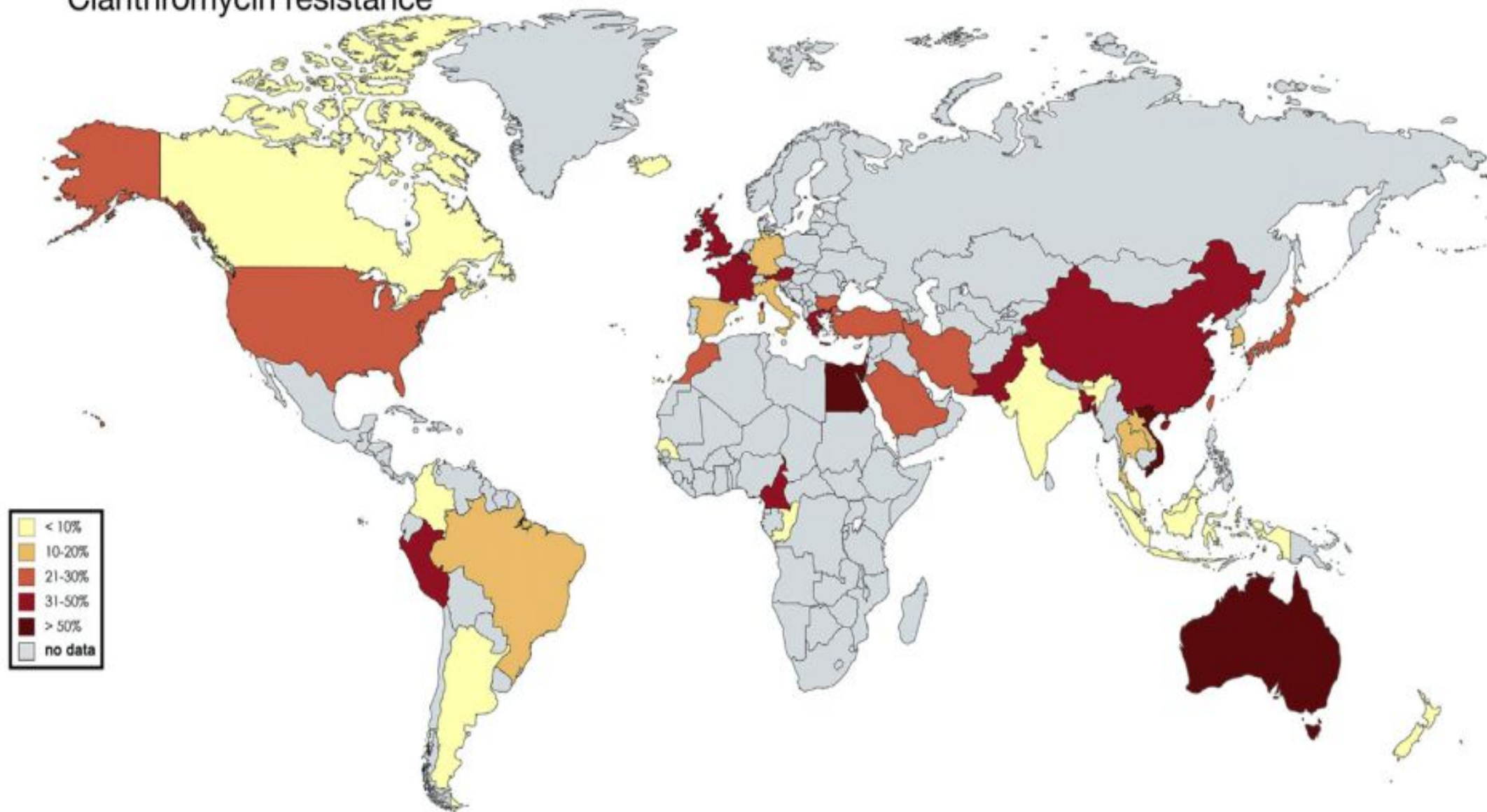
Gastroenterology 2018;155:1372–1382

CLINICAL—ALIMENTARY TRACT

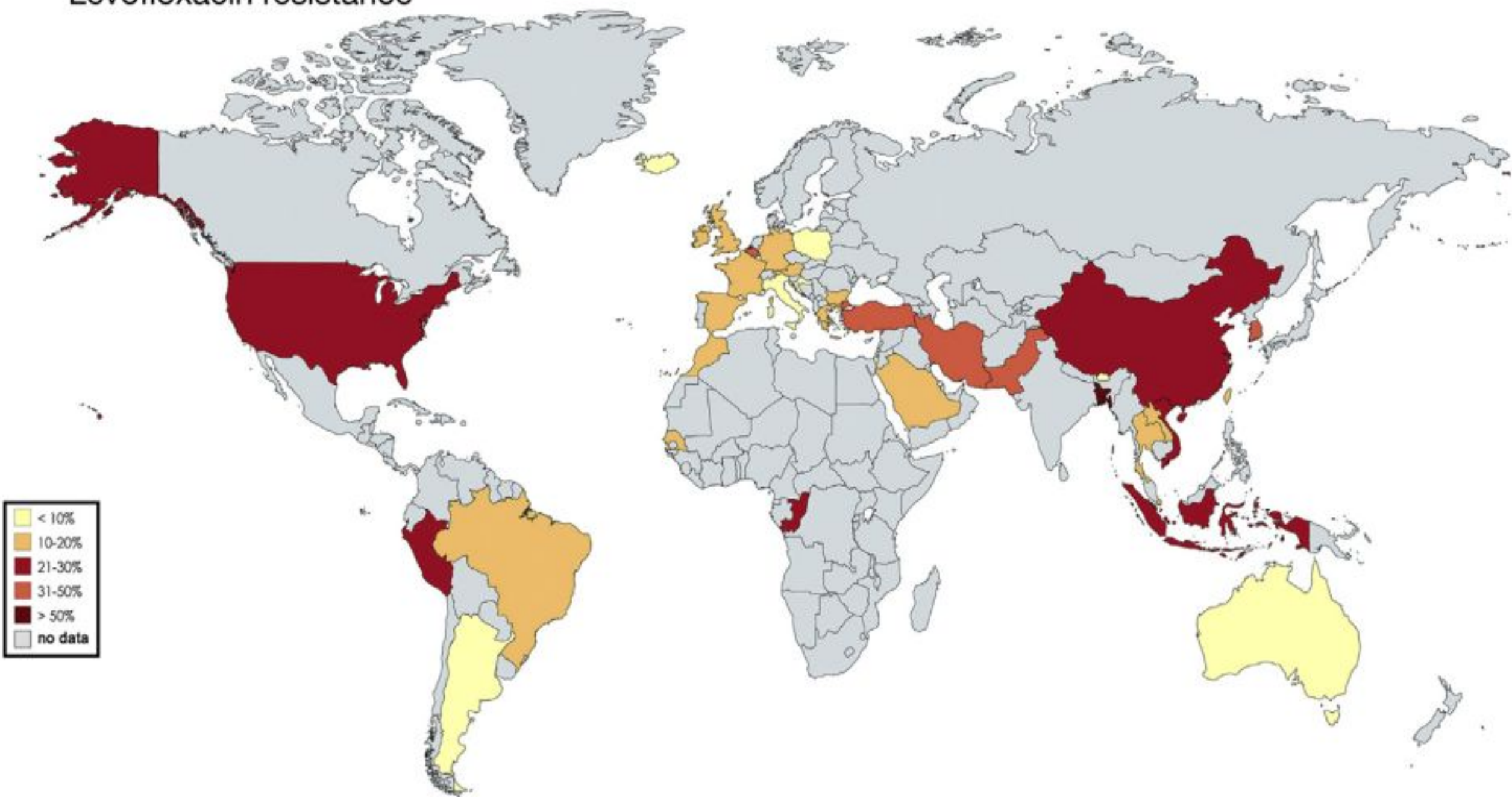
**Prevalence of Antibiotic Resistance in *Helicobacter pylori*:
A Systematic Review and Meta-analysis in World Health
Organization Regions**



Clarithromycin resistance



Levofloxacin resistance



Recommendation

Although *H. pylori* antimicrobial resistance can be determined by culture and/or molecular testing (strong recommendation; moderate quality of evidence), these tests are currently not widely available in the United States.



$$n = \frac{K[P_1(1-P_1) + P_2(1-P_2)]}{(P_1 - P_2)^2}$$

$$n = 7.8x \frac{0.325(1-0.325) + 0.275(1-0.275)}{(0.325-0.275)^2} = 1306.5$$



- Strong Method and well design Clinical Trail
 - Pilot study with right **sample size**
 - Right Patients to Treat
 - Right Randomization
 - **Data Quality**
 - Right **Statistics Test** & with their **conditions**
 - **Double Check** biopsy Results with two pathologist at **same lab**
 - Same Drugs in each treatment arm
 - **all above contribute to reduce bias in study**
- We did not culture of an endoscopic biopsy samples
 - Adherence to medication was from the patient's history.
 - We cannot confirm that all patients were naive to macrolides or fluoroquinolones
 - Small Sample size

ACG Clinical Guideline: Treatment of *Helicobacter pylori* Infection

William D. Chey, MD, FACG¹, Grigorios I. Leontiadis, MD, PhD², Colin W. Howden, MD, FACG³ and Steven F. Moss, MD, FACG

Am J Gastroenterol 2017; 112:212–238; doi:10.1038/ajg.2016.563; published online 10 January 2017

- ▶ Whenever *H. pylori* infection is identified and treated, testing to prove eradication should be performed. (Strong recommendation; Moderate quality of evidence).

Pilot study: Comparing efficacy X

← → ↺ 🏠

🔒 https://www.ncbi.nlm.nih.gov/pubmed/29404268

📄 ⋮ 🛡️ ⭐

📖 📄 👤 ☰

NCBI

Resources 📄

How To 📄

29 Sign in to NCBI

PubMed.gov

US National Library of Medicine

National Institutes of Health

PubMed

Advanced

Search

Help

Format: Abstract ▾

Send to ▾

Avicenna J Med. 2018 Jan-Mar;8(1):14-17. doi: 10.4103/ajm.AJM_70_17.

Pilot study: Comparing efficacy of 14-day triple therapy Clarithromycin versus levofloxacin on eradication of *Helicobacter pylori* infection in Syrian population single-center experience.

Cheha KM¹, Dib SOA¹, Alhalabi MM¹.

📄 **Author information**

1 Department of Digestive Disease, Damascus Hospital, Damascus, Syria.

Abstract

CONTEXT: Goals: To compare the efficacy of standard triple therapy with clarithromycin versus triple therapy with levofloxacin for treatment of *Helicobacter pylori*-positive infection in a referral hospital in Damascus, Syria.

DESIGN: pilot prospective open-label randomized controlled trial.

SUBJECTS AND METHODS: Eighty treatment-naïve patients who tested positive for *H. pylori* gastric infection were randomly assigned to one of two treatment groups with randomization ratio of 50/50. Group (A) was treated with clarithromycin (500 mg), amoxicillin (1000 mg), and esomeprazole (20 mg), each twice/day for 14 days, while Group (B) was treated with levofloxacin (500 mg), amoxicillin (1000 mg), and esomeprazole (20 mg), each twice/day for 14 days.[1] After 6 weeks of treatment, all patients underwent endoscopy and biopsy to evaluate *H. pylori* infection eradication.

RESULTS: Forty patients were allocated in each group; 37 patients completed the follow-up in each group. Thirteen patients in Group (A) were cured, with an eradication rate of 35.1% according to per-protocol analysis (PPA) and 32.5% according to intention-to-treat analysis (ITT), while in Group (B), 11 patients were cured, with an eradication rate of 29.7% according to PPA and 27.5% according to ITT with *P* = 0.80. No serious adverse events reported in both the groups.

CONCLUSIONS: Clarithromycin is slightly better than levofloxacin in treatment of *H. pylori* gastric infection, but both regimens show low effectiveness with suboptimal eradication rates in our selected population.

KEYWORDS: Clarithromycin; Clarithromycin resistance; Helicobacter pylori; Syria; levofloxacin; levofloxacin resistance; triple therapy

Full text links

Get Free Full Text

Wolters Kluwer | Medknow

PMC

FREE Full text

Save items

▾

Similar articles

▾

Cited by 1 PubMed Central article

▴

High primary resistance to metronidazole and levofloxacin, and a moderate r [Gut Pathog. 2019]

Related information

▴

Articles frequently viewed together

MedGen

References for this PMC Article

Free in PMC

Cited in PMC

Recent Activity

▴

Turn Off Clear

Pilot study: Comparing efficacy of 14-day

🌐 🦊 🌐 🌐 🎧 📄 📄 📄 🔍 📄 📄 📄 📄

EN 📶 📶 📶 📶 📶 📶 📶 📶 12:46 PM 06-Dec-19