ENDOVIDEO 2.000 Ltda
Unidad Especializada en Salud Digestiva

30 AÑOS DE COMPROMISO CON LA PREVENCION, DIAGNÓSTICO Y TRATAMIENTO DE ENFERMEDADES DIGESTIVAS.
1993 - 2023

ASOCIACION COLOMBIANA DE GASTROENTEROLOGIA

Jornada de Actualización en Patología Digestiva
Popayán junio 23, 2023

Helicobacter pylori
¿Cómo abordarlo en 2023?

William Otero R MD, FAGA, FASGE, FACP
Profesor Titular de Medicina,
Universidad Nacional de Colombia
Hospital Universitario Nacional de Colombia

Youtoube “William otero gastroenterólogo”

Management of *Helicobacter pylori* infection: the Maastricht VI/Florence consensus report

Peter Malfertheiner ,[1,2] Francis Megraud ,[3] Theodore Rokkas ,[4,5] Javier P Gisbert ,[6,7] Jyh-Ming Liou ,[8] Christian Schulz ,[1,9] Antonio Gasbarrini,[10] Richard H Hunt,[11,12] Marcis Leja ,[13,14] Colm O'Morain,[15] Massimo Rugge ,[16,17] Sebastian Suerbaum,[9,18] Herbert Tilg ,[19] Kentaro Sugano ,[20] Emad M El-Omar ,[21,22] On behalf of the European Helicobacter and Microbiota Study group

***Statement 1*: *H. pylori* infection always causes gastritis, irrespective of symptoms or complications.**

Agreement 100% **Grade A1**

Malfertheiner P, Maastricht VI, Gut 2020,Online agosto 8

Management of *Helicobacter pylori* infection: the Maastricht VI/Florence consensus report

Peter Malfertheiner [1,2] Francis Megraud [3] Theodore Rokkas [4,5] Javier P Gisbert [6,7] Jyh-Ming Liou [8] Christian Schulz [1,9] Antonio Gasbarrini,[10] Richard H Hunt,[11,12] Marcis Leja [13,14] Colm O'Morain,[15] Massimo Rugge [16,17] Sebastian Suerbaum,[9,18] Herbert Tilg [19] Kentaro Sugano [20] Emad M El-Omar [21,22] On behalf of the European Helicobacter and Microbiota Study group

***Statement 2*: *H. pylori* is a gastric pathogen. *H. pylori* gastritis is an infectious disease.**

Agreement 94% **Grade A1**

ICD 11th (International Classification of Disease

Malfertheiner P, Maastricht VI, Gut 2020,Online agosto 8

Muertes atribuidas a *H.pylori 2018*

Ulceras Pèpticas *247.000*

Càncer Gàstrico *783.000*

1 de cada 13 Muertes en el mundo

>1.000.000

Riesgo Atribuible 80-95%

Bray F, CA Cancer J Clin 2019;68:394-424
Sung H, CA Caner J Clin 2021;71:209-49

Houston Consensus Conference on Testing for *Helicobacter pylori* Infection in the United States

Hashem B. El-Serag,[*,‡] John Y. Kao,[§] Fasiha Kanwal,[*,‡,‖] Mark Gilger,[¶,#] Frank LoVecchio,[**] Steven F. Moss,[‡‡] Sheila Crowe,[§§] Adam Elfant,[‖‖] Thomas Haas,[¶¶] Ronald J. Hapke,[##] and David Y. Graham[*,‡]

Statement 1: We recommend that all patients with active *H pylori* infection be treated (100% agree/strongly agree, Grade 1A).

Clin Gastroenterol Hepatol 2018;16:992–1002

Kyoto global consensus report on *Helicobacter pylori* gastritis

Sugano K, et al. Gut 2015;64:1353–1367.

Kentaro Sugano,[1] Jan Tack,[2] Ernst J Kuipers,[3] David Y Graham,[4] Emad M El-Omar,[5] Soichiro Miura,[6] Ken Haruma,[7] Masahiro Asaka,[8] Naomi Uemura,[9] Peter Malfertheiner,[10] on behalf of faculty members of Kyoto Global Consensus Conference

Fifth Chinese National Consensus Report on the management of *Helicobacter pylori* infection

Helicobacter 2018;e12475

Wen Zhong Liu[1] | Yong Xie[2] | Hong Lu[1] | Hong Cheng[3] | Zhi Rong Zeng[4] | Li Ya Zhou[5] | Ye Chen[6] | Jiang Bin Wang[7] | Yi Qi Du[8] | Nong Hua Lu[2] | on behalf of Chinese Society of Gastroenterology, Chinese Study Group on *Helicobacter pylori* and Peptic Ulcer

Screening and eradication of *Helicobacter pylori* for gastric cancer prevention: the Taipei global consensus

Jyh-Ming Liou ,[1,2,3] Peter Malfertheiner,[4,5] Yi-Chia Lee ,[1,2,6] Bor-Shyang Sheu ,[7,8] Kentaro Sugano,[9] Hsiu-Chi Cheng,[7,10] Khay-Guan Yeoh ,[11] Ping-I Hsu,[12] Khean-Lee Goh,[13] Varocha Mahachai,[14] Takuji Gotoda ,[15] Wei-Lun Chang,[7] Mei-Jyh Chen,[1,2,16] Tsung-Hsien Chiang,[1,2,16] Chieh-Chang Chen,[1,2] Chun-Ying Wu ,[17,18] Alex Hwong-Ruey Leow,[13] Jeng-Yih Wu,[8] Deng-Chyang Wu,[8] Tzu-Chan Hong,[1,2,19] Hong Lu ,[20] Yoshio Yamaoka ,[21,22] Francis Megraud,[23] Francis K L Chan ,[24,25] Joseph JY Sung,[24,25] Jaw-Town Lin ,[1,26] David Y Graham ,[22] Ming-Shiang Wu ,[1,2] Emad M El-Omar ,[27,28] Asian Pacific Alliance on Helicobacter and Microbiota (APAHAM)

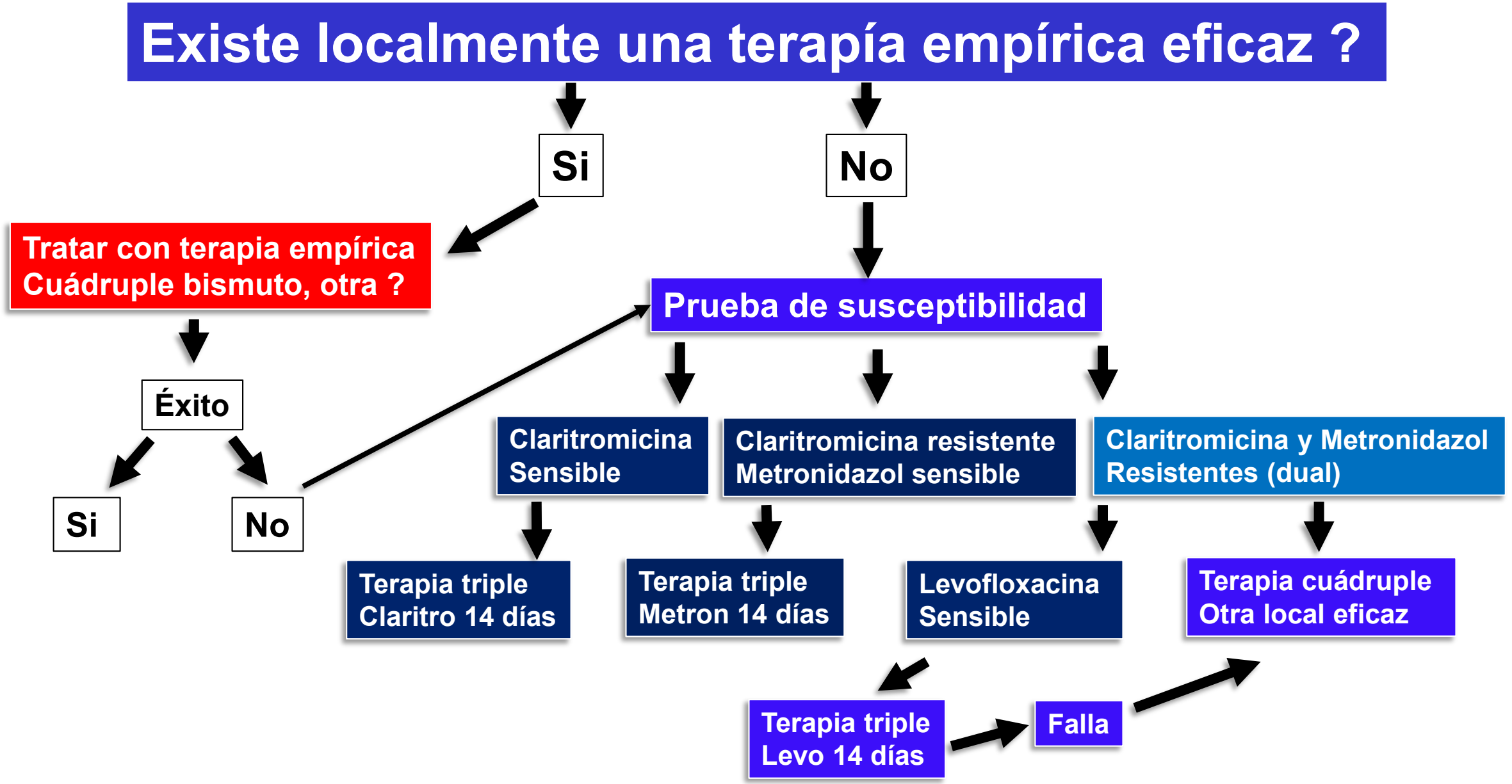
Liou J-M, et al. Gut 2020;69:2093–2112

Management of *Helicobacter pylori* infection: the Maastricht VI/Florence consensus report

Peter Malfertheiner ,[1,2] Francis Megraud ,[3] Theodore Rokkas ,[4,5] Javier P Gisbert ,[6,7] Jyh-Ming Liou ,[8] Christian Schulz ,[1,9] Antonio Gasbarrini,[10] Richard H Hunt,[11,12] Marcis Leja ,[13,14] Colm O'Morain,[15] Massimo Rugge ,[16,17] Sebastian Suerbaum,[9,18] Herbert Tilg ,[19] Kentaro Sugano ,[20] Emad M El-Omar ,[21,22] On behalf of the European Helicobacter and Microbiota Study group

Malfertheiner P, Gut 2022 Online agosto 15

Como toda infección
Pruebas susceptibilidad



Graham DY, Am J Gastroenterol 2022;117:524-8

Antimicrobial susceptibility testing for *Helicobacter pylori*

Traditional Approach

Best guess,
based on experience

↓

Antibiotic misuse and/or
low eradication rates

Antimicrobial Susceptibility Testing

WHEN Use when the cure rate with empiric therapy is <90% or after a failed attempt

HOW Gastric biopsy or stool

Culture or molecular testing (PCR or Next Generation Sequencing)

PCR or Next Generation Sequencing

WHY Use results to guide regimen selection, avoid inappropriate antibiotic use & improve eradication rates

Graham DY, Am J Gastroenterol 2022;117:524–528

Comparable Results of *Helicobacter pylori* Antibiotic Resistance Testing of Stools vs Gastric Biopsies Using Next-Generation Sequencing

Antibiotic	Gene evaluated	Gastric	Stool	Agreement between tests[b] (κ)
Clarithromycin	*23S rRNA*	34 (53.1)	34 (53.1)	0.94 (0.90–1.00)
Levofloxacin	*gyrA*	19 (29.7)	16 (25.0)	0.88 (0.75–1.00)
Metronidazole	*rdxA*	20 (31.3)	17 (26.6)	0.89 (0.76–1.00)
Tetracycline	*16S rRNA*	6 (9.4)	6 (9.4)	1.00
Amoxicillin	*pbp1*	4 (6.3)	4 (6.3)	1.00

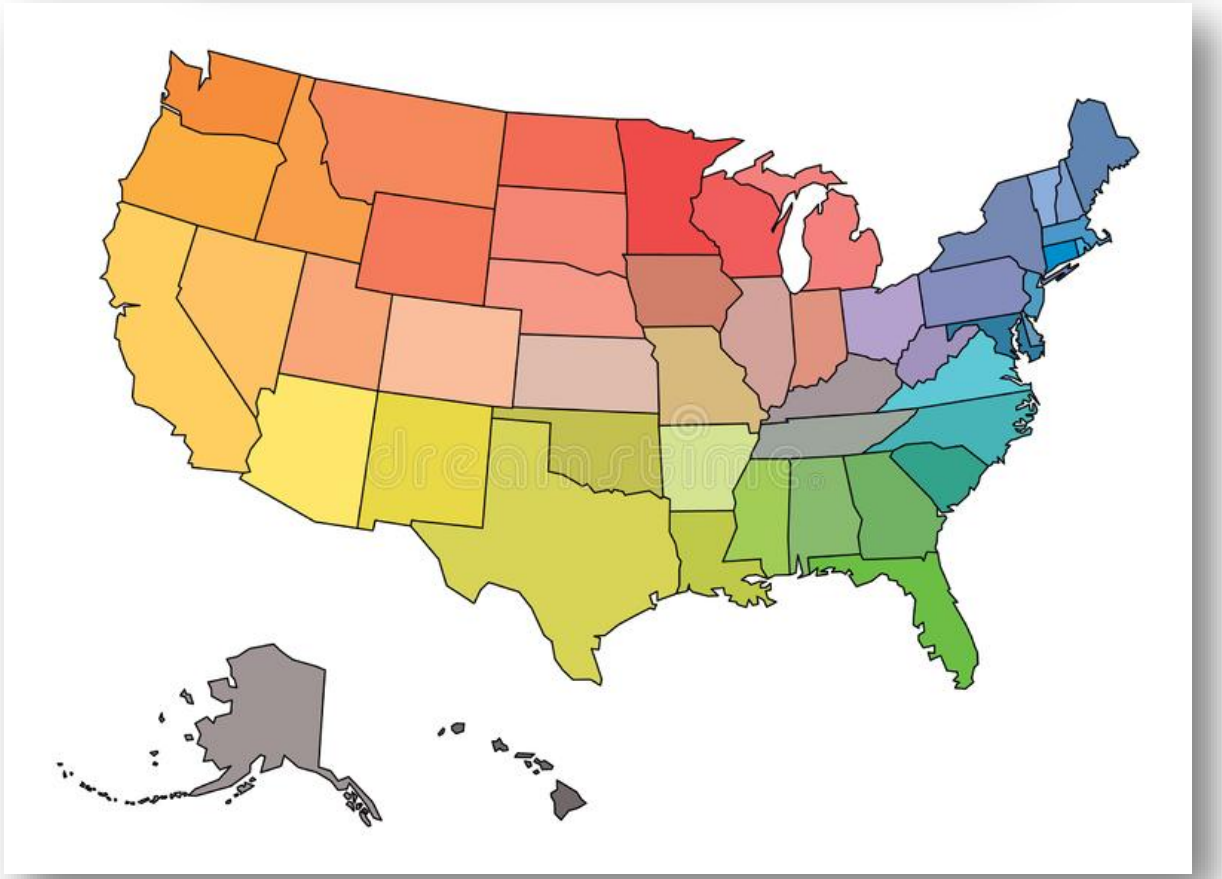
Moss SF, Gastroenterology 2022;162:2095–2097

Table 1. Where to obtain *Helicobacter pylori* susceptibility testing in the United States

Test	Laboratory	Web address	Catalog #
Culture	AURP Laboratories	https://ltd.aruplab.com/Tests/Pub/2006686	2006686
Culture	Mayo Clinical Laboratories	https://www.mayocliniclabs.com/test-catalog/Overview/62769	HELIS
Culture	QUEST	https://testdirectory.questdiagnostics.com/test/test-detail/8395/helicobacter-pylori-culture?cc=MASTER	369949
Culture	Labcorp	https://www.labcorp.com/tests/180885/i-helicobacter-pylori-i-culture	18085
Culture	Microbiology Specialists Inc.	https://microbiologyspecialists.com/helicobacter-pylori-testing/	058, 238
Reflex stool by polymerase chain reaction	Mayo Clinical Laboratories	https://www.mayocliniclabs.com/test-catalog/Overview/607594	HPFRP
Next-generation sequencing	American Molecular Laboratories	http://amlaboratories.com/testing-services/helicobacter-pylori-detection-antibiotic-resistant-analysis/	PyloriAR™/AmHPR®
Reflex stool by next-generation sequencing	American Molecular Laboratories	http://amlaboratories.com/testing-services/helicobacter-pylori-detection-antibiotic-resistant-analysis/	PyloriAR™/AmHPR®

Graham DY, Am J Gastroenterol 2022;117:524-28

Helicobacter pylori pruebas susceptibilidad



Tratamiento

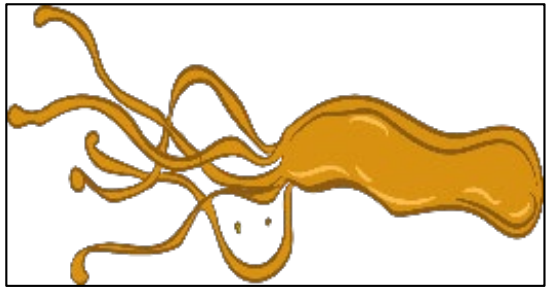
Enfermedades infecciosas

Susceptibilidad

98-100%

Helicobacter pylori

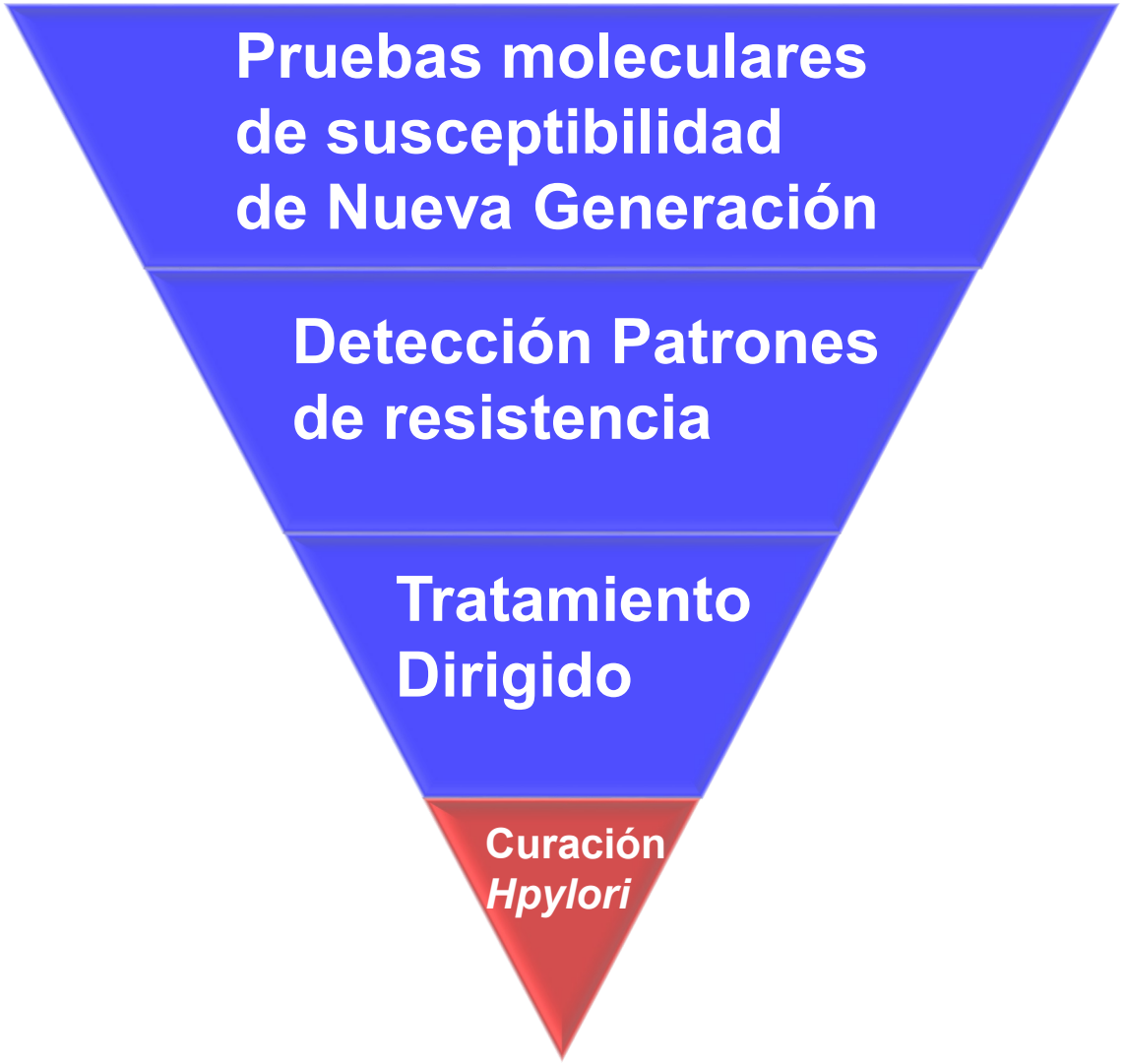
Empírica ensayo-error



80-90%

Graham DY, Ther Adv Gastroenterol 2023;16:1-6

Nuevo paradigma



Garrido-Teviño LF, et al Rev Gastroenterol Mex 2022, Junio 15

Terapia basada en Pruebas susceptibilidad

Versus

Terapias empíricas

Current role of tailored therapy in treating *Helicobacter pylori* infections. A systematic review, meta-analysis and critical analysis

34 estudios

Theodore Rokkas[1,2] | Konstantine Ekmektzoglou[1,2] | David Y. Graham[3]

Tipo terapia	Éxito < 90%	> 90%	>95%
Guiada Susceptibilidad			

Guiada y
Dosis, du
e

Rokkas T, Helicobacter 2023;28:e12936

Empirical vs. Susceptibility-Guided Treatment of *Helicobacter pylori* Infection: A Systematic Review and Meta-Analysis

*Olga P. Nyssen [1,2,3], Marta Espada [1,2,3] and Javier P. Gisbert [1,2,3]**

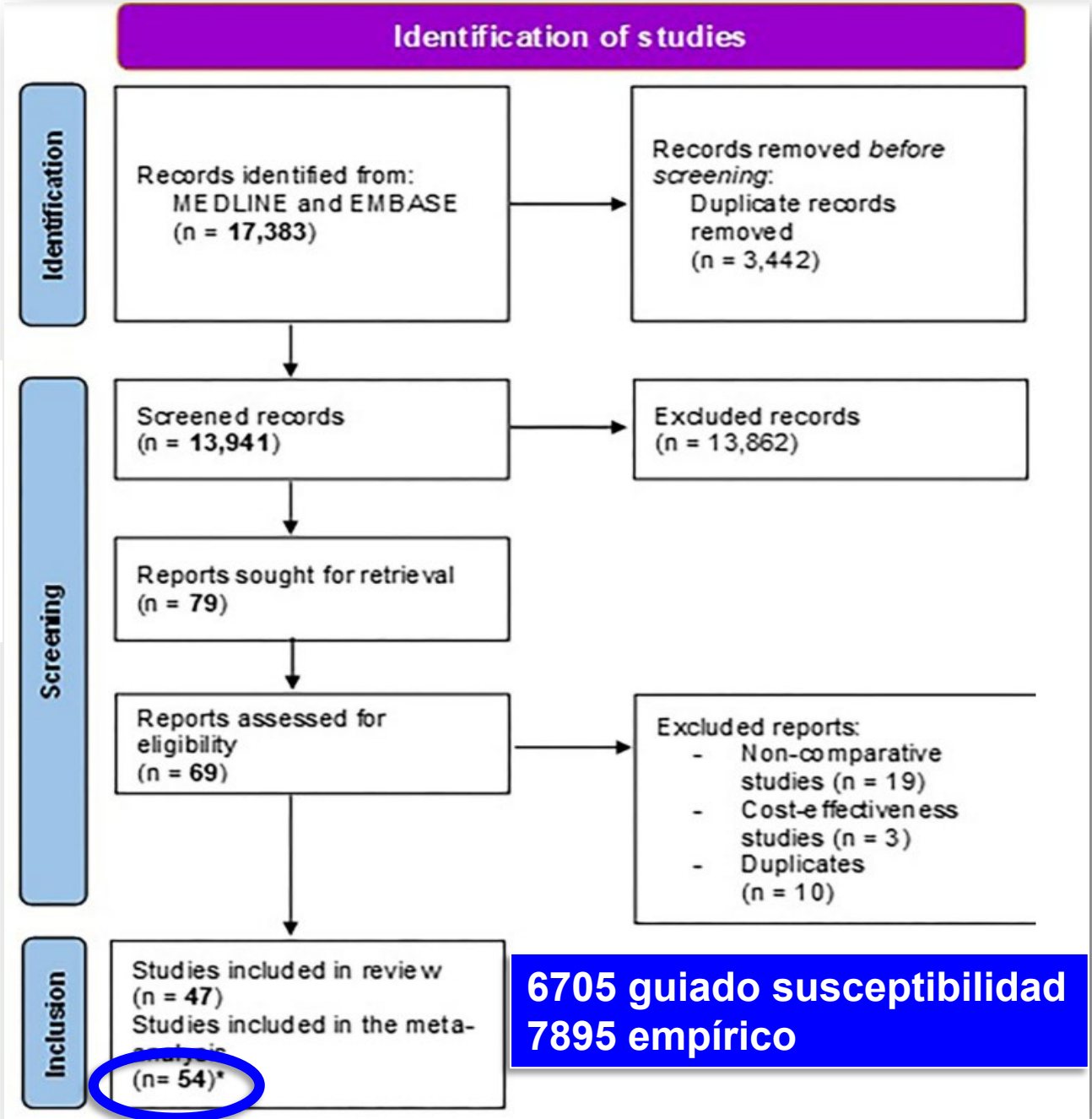
[1] Gastroenterology Unit, Instituto de Investigación Sanitaria Princesa (IIS-Princesa), Hospital Universitario de La Princesa, Madrid, Spain, [2] Universidad Autónoma de Madrid (UAM), Madrid, Spain, [3] Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBEREHD), Madrid, Spain

Nyssen OP, Front Microbiol 2022;13: Article 913436

Empirical vs. Susceptibility-Guided Treatment of *Helicobacter pylori* Infection: A Systematic Review and Meta-Analysis

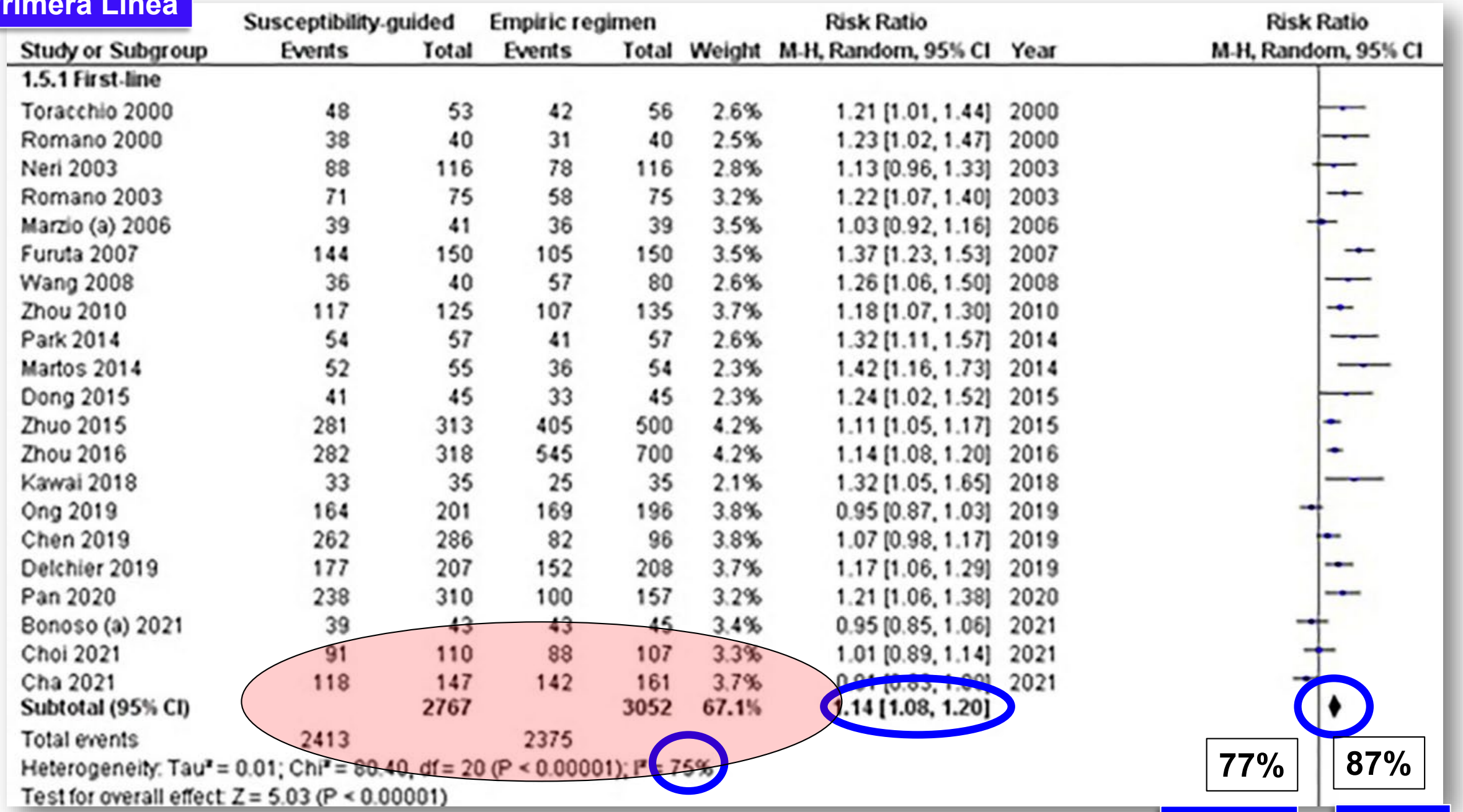
*Olga P. Nyssen [1,2,3], Marta Espada [1,2,3] and Javier P. Gisbert [1,2,3]**

[1] Gastroenterology Unit, Instituto de Investigación Sanitaria Princesa (IIS-Princesa), Hospital Universitario de La Princesa, Madrid, Spain, [2] Universidad Autónoma de Madrid (UAM), Madrid, Spain, [3] Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBEREHD), Madrid, Spain



Nyssen OP, Front Microbiol 2022;13: Article 913436

Primera Línea



Study or Subgroup	Susceptibility-guided Events	Total	Empiric regimen Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.5.1 First-line							
Toracchio 2000	48	53	42	56	2.6%	1.21 [1.01, 1.44]	2000
Romano 2000	38	40	31	40	2.5%	1.23 [1.02, 1.47]	2000
Neri 2003	88	116	78	116	2.8%	1.13 [0.96, 1.33]	2003
Romano 2003	71	75	58	75	3.2%	1.22 [1.07, 1.40]	2003
Marzio (a) 2006	39	41	36	39	3.5%	1.03 [0.92, 1.16]	2006
Furuta 2007	144	150	105	150	3.5%	1.37 [1.23, 1.53]	2007
Wang 2008	36	40	57	80	2.6%	1.26 [1.06, 1.50]	2008
Zhou 2010	117	125	107	135	3.7%	1.18 [1.07, 1.30]	2010
Park 2014	54	57	41	57	2.6%	1.32 [1.11, 1.57]	2014
Martos 2014	52	55	36	54	2.3%	1.42 [1.16, 1.73]	2014
Dong 2015	41	45	33	45	2.3%	1.24 [1.02, 1.52]	2015
Zhuo 2015	281	313	405	500	4.2%	1.11 [1.05, 1.17]	2015
Zhou 2016	282	318	545	700	4.2%	1.14 [1.08, 1.20]	2016
Kawai 2018	33	35	25	35	2.1%	1.32 [1.05, 1.65]	2018
Ong 2019	164	201	169	196	3.8%	0.95 [0.87, 1.03]	2019
Chen 2019	262	286	82	96	3.8%	1.07 [0.98, 1.17]	2019
Delchier 2019	177	207	152	208	3.7%	1.17 [1.06, 1.29]	2019
Pan 2020	238	310	100	157	3.2%	1.21 [1.06, 1.38]	2020
Bonoso (a) 2021	39	43	43	45	3.4%	0.95 [0.85, 1.06]	2021
Choi 2021	91	110	88	107	3.3%	1.01 [0.89, 1.14]	2021
Cha 2021	118	147	142	161	3.7%	[illegible]	2021
Subtotal (95% CI)		**2767**		**3052**	**67.1%**	**1.14 [1.08, 1.20]**	
Total events	2413		2375				
Heterogeneity: Tau² = 0.01; Chi² = [illegible], df = 20 (P < 0.00001); I² = 75%							
Test for overall effect: Z = 5.03 (P < 0.00001)							

Risk Ratio M-H, Random, 95% CI

77%

87%

Empírica

Guiada

Nyssen OP,et al. Front Microbiol 2022;13:Art 913436.

Empirical vs. Susceptibility-Guided Treatment of *Helicobacter pylori* Infection: A Systematic Review and Meta-Analysis

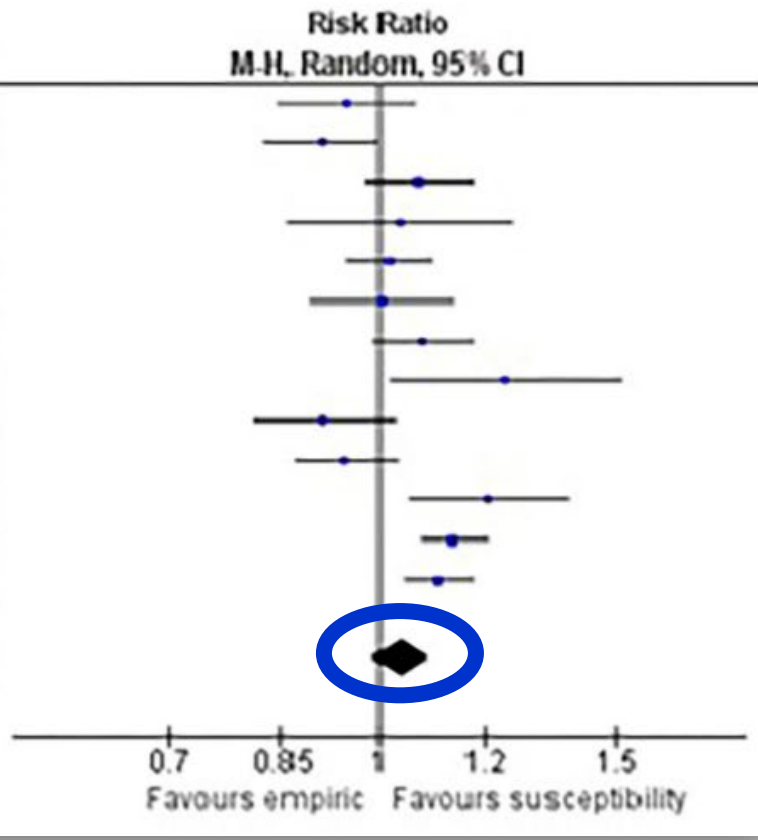
*Olga P. Nyssen [1,2,3], Marta Espada [1,2,3] and Javier P. Gisbert [1,2,3]**

Cuádruple con o sin Bismuto

Study or Subgroup	Susceptibility-guided Events	Total	Empiric regimen Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Bonoso (a) 2021	39	43	43	45	7.3%	0.95 [0.85, 1.06]
Cha 2021	118	147	142	161	8.1%	0.91 [0.83, 1.00]
Chen 2019	262	286	82	96	8.5%	1.07 [0.98, 1.17]
Choe (c) 2021	55	60	15	17	4.4%	1.04 [0.86, 1.26]
Choi 2019	48	50	98	104	9.3%	1.02 [0.95, 1.10]
Choi 2021	91	110	88	107	6.9%	1.01 [0.89, 1.14]
Cosme 2016	98	104	103	118	8.8%	1.08 [0.99, 1.17]
Dong 2015	41	45	33	45	4.1%	1.24 [1.02, 1.52]
Molina-Infante 2012	69	87	182	209	7.0%	0.91 [0.81, 1.03]
Ong 2019	164	201	169	196	8.7%	0.95 [0.87, 1.03]
Pan 2020	238	310	100	157	6.4%	1.21 [1.06, 1.38]
Zhou 2016	282	318	545	700	10.3%	1.14 [1.08, 1.20]
Zhuo 2015	281	313	405	500	10.2%	1.11 [1.05, 1.17]
Total (95% CI)		**2074**		**2455**	**100.0%**	**1.04 [0.99, 1.09]**
Total events	1786		2005			

Heterogeneity: Tau² = 0.01; Chi² = 42.74, df = 12 (P < 0.0001); I² = 72%

Test for overall effect: Z = 1.51 (P = 0.13)

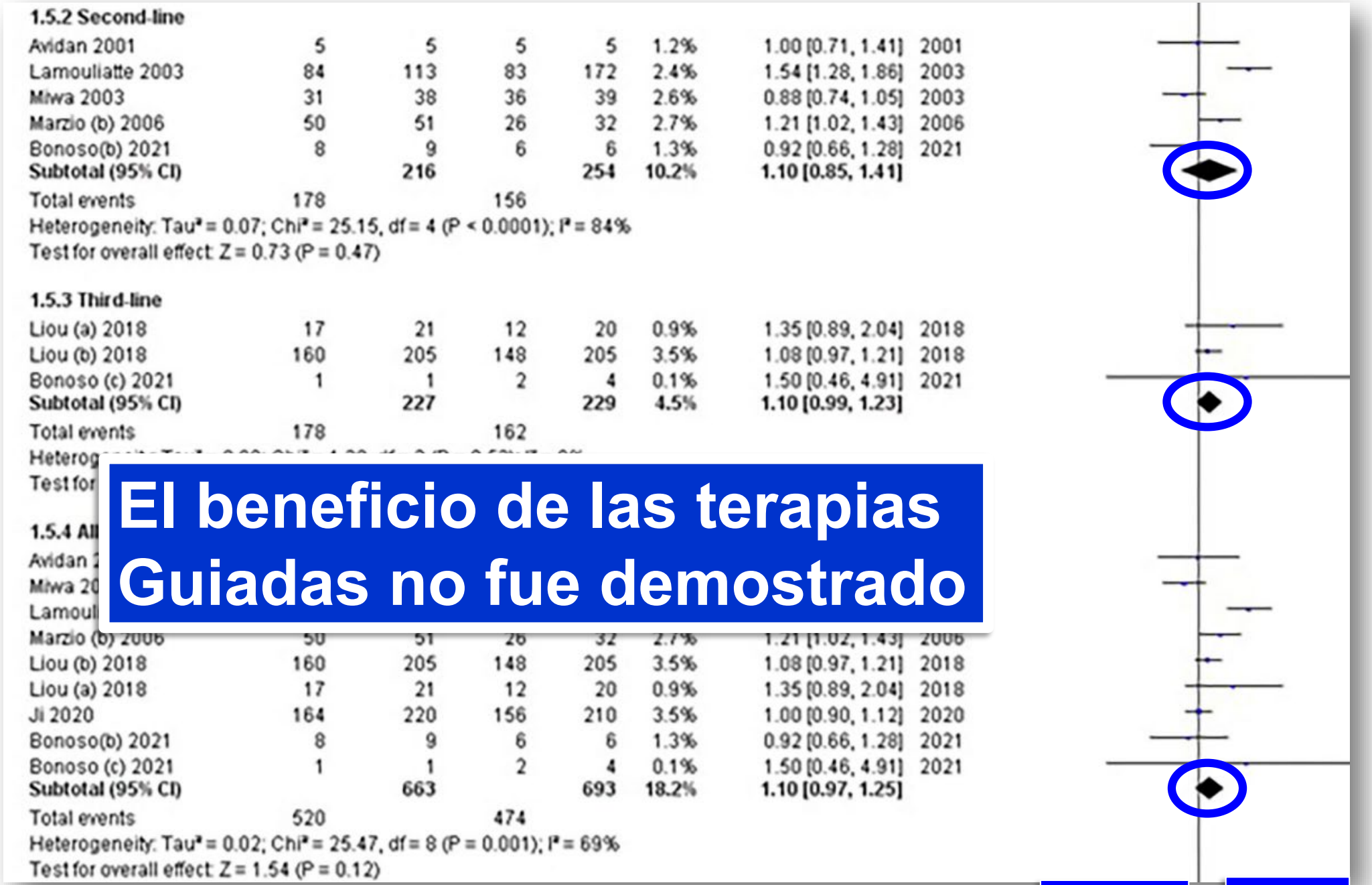


Nyssen OP,et al. Front Microbiol 2022;13:Art 913436.

Segunda Línea

Tercera Línea

Todas rescate



1.5.2 Second-line							
Avidan 2001	5	5	5	5	1.2%	1.00 [0.71, 1.41]	2001
Lamouliatte 2003	84	113	83	172	2.4%	1.54 [1.28, 1.86]	2003
Miwa 2003	31	38	36	39	2.6%	0.88 [0.74, 1.05]	2003
Marzio (b) 2006	50	51	26	32	2.7%	1.21 [1.02, 1.43]	2006
Bonoso(b) 2021	8	9	6	6	1.3%	0.92 [0.66, 1.28]	2021
Subtotal (95% CI)		**216**		**254**	**10.2%**	**1.10 [0.85, 1.41]**	
Total events	178		156				
Heterogeneity: Tau² = 0.07; Chi² = 25.15, df = 4 (P < 0.0001); I² = 84%							
Test for overall effect: Z = 0.73 (P = 0.47)							
1.5.3 Third-line							
Liou (a) 2018	17	21	12	20	0.9%	1.35 [0.89, 2.04]	2018
Liou (b) 2018	160	205	148	205	3.5%	1.08 [0.97, 1.21]	2018
Bonoso (c) 2021	1	1	2	4	0.1%	1.50 [0.46, 4.91]	2021
Subtotal (95% CI)		**227**		**229**	**4.5%**	**1.10 [0.99, 1.23]**	
Total events	178		162				
Heterog							
Test for							
1.5.4 All							
Avidan 2							
Miwa 20							
Lamoul							
Marzio (b) 2006	50	51	26	32	2.7%	1.21 [1.02, 1.43]	2006
Liou (b) 2018	160	205	148	205	3.5%	1.08 [0.97, 1.21]	2018
Liou (a) 2018	17	21	12	20	0.9%	1.35 [0.89, 2.04]	2018
Ji 2020	164	220	156	210	3.5%	1.00 [0.90, 1.12]	2020
Bonoso(b) 2021	8	9	6	6	1.3%	0.92 [0.66, 1.28]	2021
Bonoso (c) 2021	1	1	2	4	0.1%	1.50 [0.46, 4.91]	2021
Subtotal (95% CI)		**663**		**693**	**18.2%**	**1.10 [0.97, 1.25]**	
Total events	520		474				
Heterogeneity: Tau² = 0.02; Chi² = 25.47, df = 8 (P = 0.001); I² = 69%							
Test for overall effect: Z = 1.54 (P = 0.12)							

El beneficio de las terapias Guiadas no fue demostrado

Empírica **Guiada**

Nyssen OP,et al. Front Microbiol 2022;13:Art 913436.

Empirical rescue therapy after *Helicobacter pylori* treatment failure: a 10-year single-centre study of 500 patients

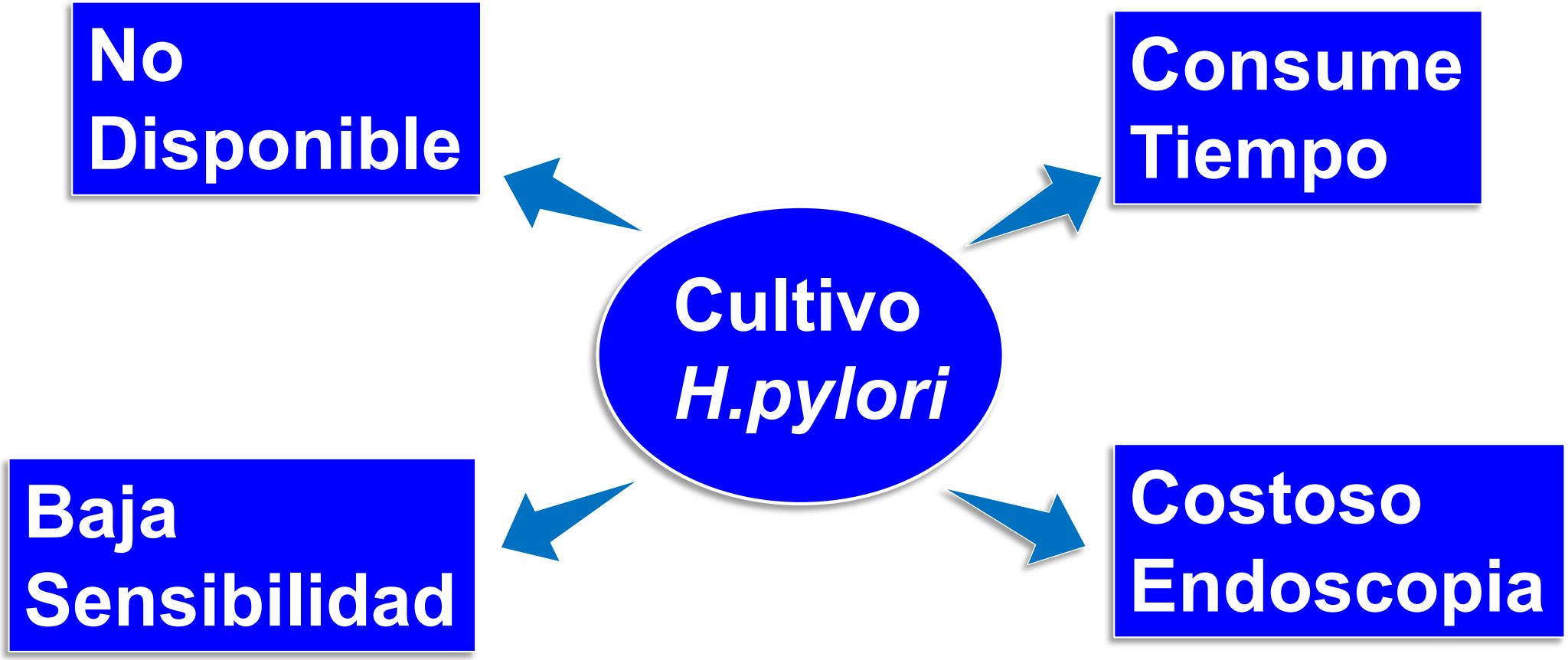
J. P. GISBERT, J.-L. GISBERT, S. MARCOS, I. JIMENEZ-ALONSO, R. MORENO-OTERO & J. M. PAJARES

500 pacientes

En cada región o país se desearía Conocer cuál sería la secuencia exitosa!

Primera línea	70% (64–75%)
Tercera línea	76% (55–89%)
Eficacia acumulada	99.5% (98.2-99.8%)

Aliment Pharmacol Ther 2008;27, 346–354



Nyssen OP, Front Microbiol 2022;13:A913436

Mundialmente por fuera de USA

No hay disponibilidad Pruebas susceptibilidad

Optimizar Tratamiento empírico

Resistencia Farmacogenómica

Management of *Helicobacter pylori* infection: the Maastricht VI/Florence consensus report

Peter Malfertheiner [1,2] Francis Megraud [3] Theodore Rokkas [4,5]
Javier P Gisbert [6,7] Jyh-Ming Liou [8] Christian Schulz [1,9]
Antonio Gasbarrini,[10] Richard H Hunt,[11,12] Marcis Leja [13,14] Colm O'Morain,[15]
Massimo Rugge [16,17] Sebastian Suerbaum,[9,18] Herbert Tilg [19]
Kentaro Sugano [20] Emad M El-Omar [21,22] On behalf of the European Helicobacter and Microbiota Study group

Malfertheiner P, Maastricht VI, Gut 2022,Online agosto 8

Resistencia a claritromicina > 15% o desconocida

Primera Línea

1ª opción Cuádruple Bismuto

Falla

2ª opción Cuádruple sin bismuto: Concomitante
IBP + Amoxicilina +Claritromicina+ metronidazol

Falla

Segunda Línea

Triple-Cu
IBP+Levo

Cuádruple

Triple/Cuádruple
ofloxacina

Falla

ádruple
Bismuto

Esto es una propuesta
Nadie lo ha verificado

Tercera Línea

Triple Rifabutina
Bismuto + otros antibióticos
Amoxi-Claritromicina-Metr

Triple-Levo

Falla

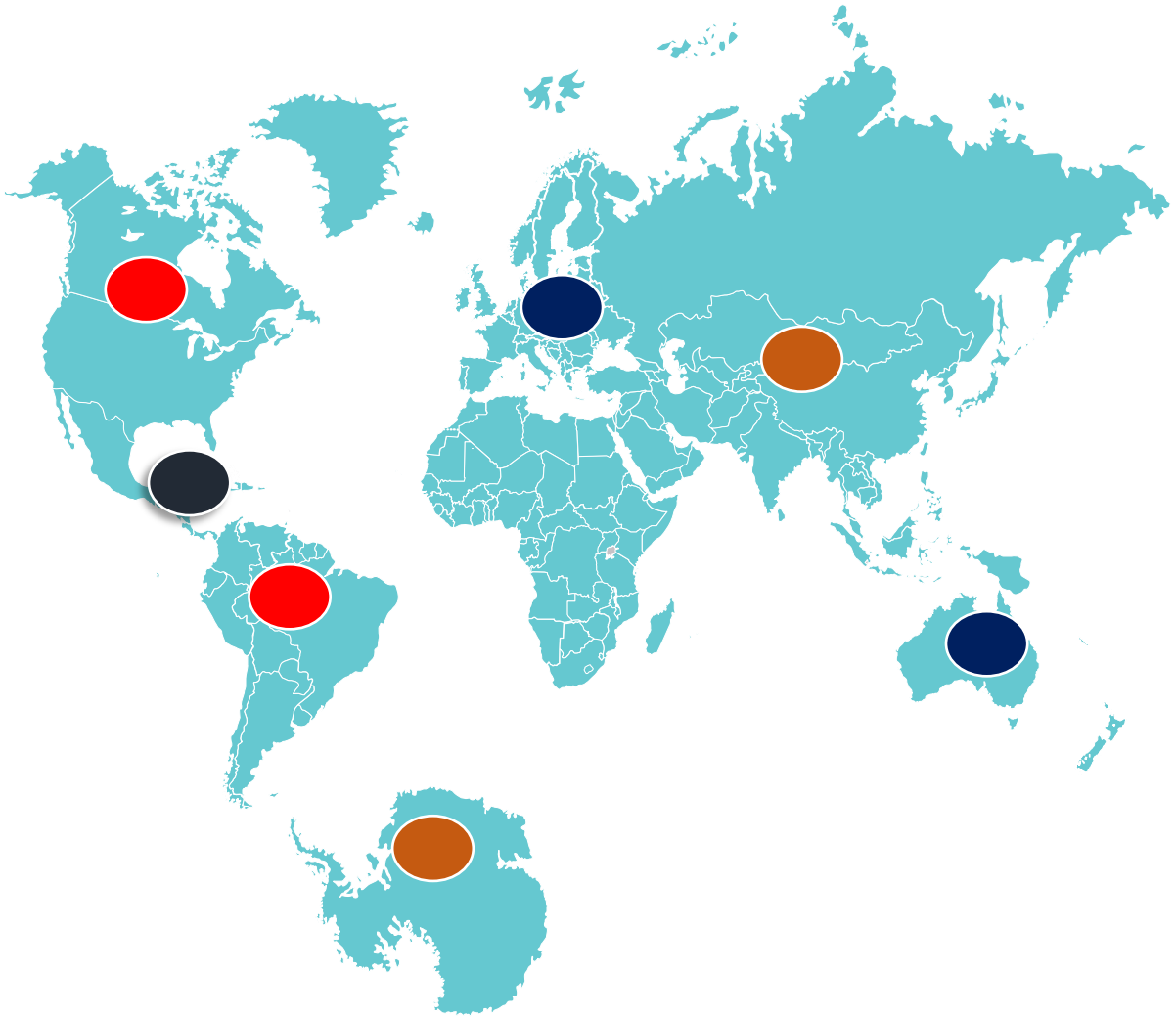
Triple Rifabutina

Falla

Triple Rifabutina

Terapia Dual

Malfertheiner P, Maastricht VI, Gut 2022,Online agosto 8



Resistencias

Claritromicina
> 15%

Levofloxacina
>15%

Metronidazol
>60%

No están disponibles
No existen
Todos los antibióticos

Tratamiento *H.pylori* 2023

Uno o más antibióticos

- Amoxicilina
- Tetraciclina
- Claritromicina
- Metronidazol
- Quinolonas
- Furazolidona
- Bismuto
- Rifabutina

LATAM Terapia cuádruple con bismuto 14 días

IBP +

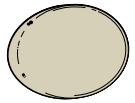
30 min antes desayuno
30 min antes de cena

Bismuto SS

Inmediatamente antes del desayuno
Inmediatamente antes de cena

+

Tetraciclina 500 mg



Cada seis horas
Una después de cada comida y 10 pm

+

Metronidazol 500 mg

Cada seis horas
Una después de cada comida y 10 pm

90-95% éxito independiente de resistencia

Bismuto dos veces al día

Year	Location	Bismuth[a]	Tetracyc	Metro	Meals	PPI**	Days	No.	PP%	ITT%	Ref.
1997	USA	BSS 524 b.i.d.	500 b.i.d.	500 b.i.d.	AM, PM	L 15 b.i.d.	10	46	75	70	56
2002	Italy	BSC 240 b.i.d.	500 b.i.d.	500 b.i.d.	Noon, PM	P 20 b.i.d.	14	118	98	95	52
2003	Italy	BSC 240 b.i.d.	500 b.i.d.	500 b.i.d.	Noon, PM	P 20 b.i.d.	14	71	97	93	53
2004	USA	BSS 524 b.i.d.	500 b.i.d.	500 b.i.d.	AM, PM	R 20 b.i.d.	14	37	92.3	92.3	56
2006	Italy	BSC 240 b.i.d.	500 b.i.d.	500 b.i.d.	AM, PM	E 20 b.i.d.	10	95	95	91	55
2009	China	BSC 220 b.i.d.	750 b.i.d.	400 b.i.d.	AM, PM	P 40 b.i.d.	7	43	82.9	79.1	57
2009	China[a]	BSC 220 b.i.d.	750 b.i.d.	400 b.i.d.	AM, PM	P 40 b.i.d.	10	45	90.9	88.9	57
2010	China[a]	BSC 220 b.i.d.	750 b.i.d.	400 b.i.d.	AM, PM	P 40 b.i.d.	10	85	91.6.	89.9	58
2011	Italy	BSC 240 b.i.d.	500 b.i.d.	500 b.i.d.	Noon, PM	P 20 b.i.d.	14	202	98	92	109
2011	Italy	BSC 240 b.i.d.	500 b.i.d.	500 b.i.d.	Noon, PM	P 20 b.i.d.	10	215	95	92	109
2013	Turkey	BSC 600 b.i.d.	500 b.i.d.	500 b.i.d.	AM, PM	O 20 b.i.d.	14	38	86.8	73.3	110
2005	Iran	BSC 240 b.i.d.	500 b.i.d.	500 b.i.d	AM, PM	O 20 b.i.d.	14	76	-	76.3	111
2006	Iran[a]	BSC 240 b.i.d.	750 b.i.d.	500 b.i.d.	AM, PM	O 20 b.i.d.	3	40	54	50	75
2006	Iran[a]	BSC 240 b.i.d.	750 b.i.d.	500 b.i.d.	AM, PM	O 20 b.i.d.	7	41	45.9	41.4	75
2006	Iran[a]	BSC 240 b.i.d.	750 b.i.d.	500 b.i.d.	AM, PM	O 20 b.i.d.	14	40	40	35	75

Graham DY, Gastroenterol Clin N Am 2015;44: 537–563

TERAPIA CUADRUPLE CON BISMUTO DOS VECES AL DIA EN PACIENTES COLOMBIANOS INFECTADOS CON *Helicobacter pylori*

65

William Otero Regino[1], Azucena Arévalo Galvis[2], Alba Alicia Trespalacios Rangel[2].

[1]Unidad de Gastroenterología, Facultad de Medicina, Universidad Nacional de Colombia, Centro de Gastroenterología y Endoscopia, Bogotá, - Colombia.
[2]Laboratorio de Bacteriología Especial, Grupo de Enfermedades Infecciosas, Departamento de Microbiología, Facultad de Ciencias, Pontificia Universidad Javeriana; Bogotá D.C - Colombia.

Introducción: La resistencia a los principales antibióticos utilizados para erradicar la infección de *Helicobacter pylori* (*H. pylori*) es alta y la eficacia de las terapias de erradicación utilizadas actualmente es inferior al 90%. La ausencia de pruebas de susceptibilidad hace que el clínico se vea en la necesidad de crear nuevas terapias.

Objetivo: Determinar la eficacia de la terapia cuádruple clásica con bismuto, a dosis más bajas (IBP, bismuto, metronidazol y tetraciclina), administrada dos veces al día

Metodología

Estudio de intervención cuasiexperimental realizado en Bogotá entre el año 2015 y 2017

Criterios de Inclusión: Individuos con edades entre 19 a 70 años, remitidos a endoscopia con diagnóstico inicial de dispepsia e infectados con *H. pylori*.

Criterios de Exclusión: Individuos con antecedentes de cirugías gastrointestinales superiores, atrofia gástrica, metaplasia intestinal o cáncer gástrico previo. Mujeres en estado de embarazo.

Se realizó endoscopia de vías digestivas, prueba rápida de ureasa e histología para verificar infección por *H. pylori*. La resistencia a metronidazol se evaluó por dilución en agar en 17 sujetos.

Los sujetos recibieron terapia cuádruple con bismuto así: esomeprazol (ESOZ ®) 40mg, una tableta 30 minutos antes del almuerzo y una tableta 30 minutos antes de la cena, Subsalicilato de Bismuto (Bisbacter ®) 262mg dos tabletas 15 minutos antes del almuerzo y dos tabletas 15 minutos antes de la comida, tetraciclina de 500mg una tableta con el almuerzo y una con la cena y metronidazol de 500mg una tableta con el almuerzo y una tableta con la comida. Durante 14 días.

El seguimiento se realizó vía telefónica. La medición de efectos adversos se realizó utilizando una escala Likert que evaluó la intensidad de cada síntoma de 0-3: 0: ausente, 3: severo.

La verificación de la erradicación se realizó por antígenos fecales (Meridiam®)

La eficacia de la terapia se midió por intención a tratar (ITT) y por protocolo (PP)

Resultados

Sujetos invitados a participar (n=98)

Excluidos (n=51)

Sujetos Incluidos (n=47)

88.2% (15/17) de los aislamientos de *H. pylori* estudiados fueron resistentes a metronidazol.

Eficacia de la terapia

ITT: 87.2% (41/47)
IC95%: (0.748–0.94)

PP: 95.3% (41/43)
CI95% (0.845-0.987)

Se destaca que los pacientes que presentaron resistencia a metronidazol tuvieron éxito terapéutico.

Conclusiones

1. La eficacia de esta terapia por ITT es aceptable (grado C) de acuerdo con la calificación de las terapias.
2. La posología y dosificación de metronidazol utilizados es capaz de vencer su resistencia.
3. Sería una alternativa como terapia de primera línea por su eficacia y facilidad de administración.
4. Se recomienda realizar un estudio más grande para corroborar estos hallazgos.

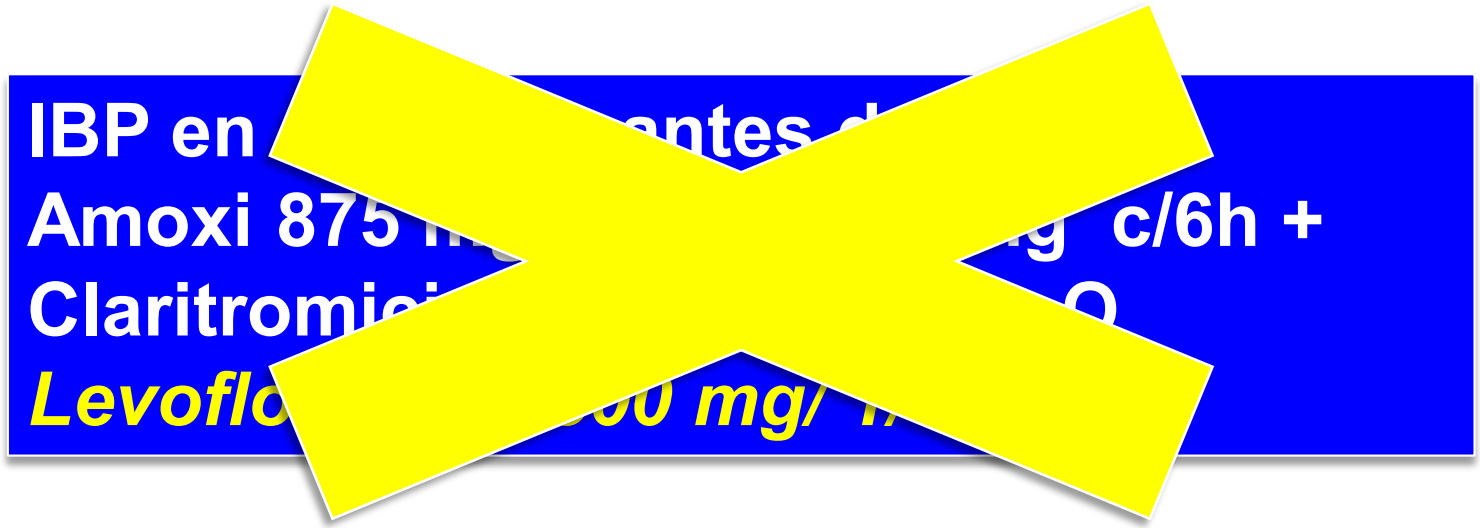
Cuádruple dos veces al día 14 días 47 pacientes

Esomeprazol (Ezos ®) 40 mg	**30 min antes Almuerzo, cena**
SSB (Bisbacter ®)	**15 min antes de Almuerzo y cena**
Tetraciclina 500 mg	**Con almuerzo y cena**
Metronidazol 500 mg	**Con almuerzo y cena**

Erradicación

ITT 87.2% (41/47) **PP 95.3% (41/42**

Colombia y LATAM



Sólo con pruebas de susceptibilidad

Empíricamente Agregando bismuto

Lee YC, Annu Rev Med 2022; 73:183-95
Ko SW, Helicobacter 2019;24:e12570
Gilbert JP, Moleculas 2020;25:5084

Efficacy of bismuth for antibiotic-resistant *Helicobacter pylori* strains eradication: A systematic review and meta-analysis

Zhongxue Han[1,2,3] | Yueyue Li[1,2,3] | Qingzhou Kong[1,2,3] | Jing Liu[1,2,3] | Juan Wang[1,2,3] | Meng Wan[1,2,3] | Minjuan Lin[1,2,3] | Boshen Lin[1,2,3] | Wenlin Zhang[1,2,3] | Yuming Ding[1,2,3] | Shaotong Wang[1,2,3] | Yijun Mu[1,2,3] | Miao Duan[1,2,3] | Xiuli Zuo[1,2,3] | Yan-qing Li[1,2,3]

Triple con Metron
87% vs 61%

Resistencia dual
Claritro-Metron
77% vs 18%

Triple con claritro
77% vs 37%

Han Z, et al. Helicobacter. 2022;27:e12930.

Combination of Bismuth and Standard Triple Therapy Eradicates *Helicobacter pylori* Infection in More than 90% of Patients

Adrian G. McNicholl,[*] Dmitry S. Bordin,[‡] Alfredo Lucendo,[§] Galina Fadeenko,[‖] Manuel Castro Fernandez,[¶] Irina Voynovan,[#] Natalia Valerievna Zakharova,[**] Aiman Silkanovna Sarsenbaeva,[‡‡] Luis Bujanda,[§§] Ángeles Perez-Aisa,[‖‖] Liudmila Vologzhanina,[¶¶] Oleg Zaytsev,[##] Tatiana Ilchishina,[***] Cristobal de la Coba,[‡‡‡] Jorge Perez Lasala,[§§§] Sergey Alekseenko,[‖‖‖] Ines Modolell,[¶¶¶] Javier Molina-Infante,[###] Rafael Ruiz-Zorrilla Lopez,[****] Horacio Alonso-Galan,[§§] Nuria Fernandez Moreno,[‖‖] Jen Hinojosa,[‖‖] Inmaculada Santaella,[‖‖] Pilar Varela,[‡‡‡] Pedro Luis Gonzalez-Cordero,[###] Jesus Barrio,[‡‡‡‡] Jose Luis Dominguez-Jimenez,[§§§§] Oscar Nuñez,[‖‖‖‖] Javier Alcedo,[¶¶¶¶] Olga P. Nyssen,[*] Maria Caldas,[*] Maria G. Donday,[*] Oleg Shvetz,[####] Francis Megraud,[*****] Colm O'Morain,[‡‡‡‡‡] and Javier P. Gisbert[*]

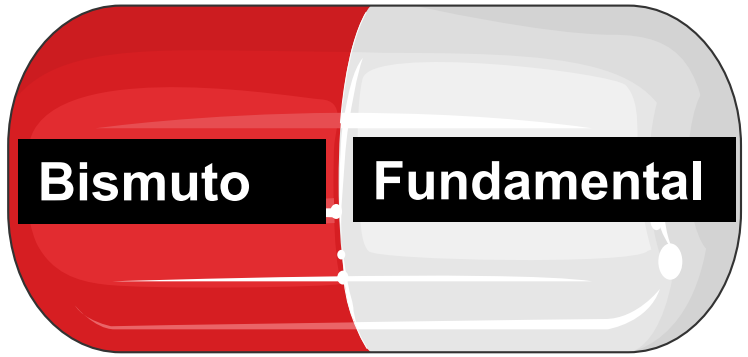
1141 pacientes "naive"

Amoxicilina+ clariromicina+ Bismuto+1bp 14 días

90%

Clin Gastroenterol Hepatol 2020;18:89-98

7 terapias



Cuádruple Clásica
IBP + Tetracicl + Metronid + *Bi*

Triples tradicionales
IBP + Amox + Clar +*Bi*

IBP + Amox + levo+ *Bi*

IBP + Amox + Metr + *Bi*

20-30%

Cuádruple FRZ
IBP + FRZ + Tetrac + *Bi*

Cuádruple FRZ
IBP + FRZ+ Amox + *Bi*

Otras Cuádruples
IBP + Amoxi +Tetraci + Bi

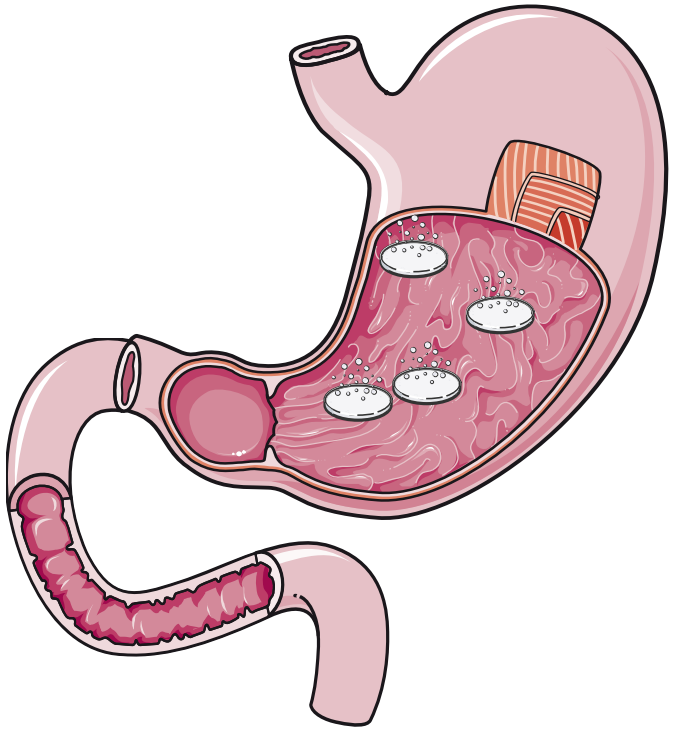
Otero W, Rev Col Gastroenterol 2022, sometido a publicación
Cho JH, et al. World J Clin Cas 2022;10:6349-59

Dual
14 dìas

Amoxicilina optimizada
1gr 3v/dia o 1 gr cada 6h (peso)

Dosis altas IBP
Esomeprazol 40 mg 3v/d

Consensos
Rescate



ORIGINAL PAPER

The efficacy of dual therapy for eradicating *H. pylori* in a Colombian population

JOHANNA BUITRAGO-LAGUADO, CARLOS RUIZ-LINARES, WILLIAM ALBERTO OTERO-REGINO
• BOGOTÁ, D. C. (COLOMBIA)

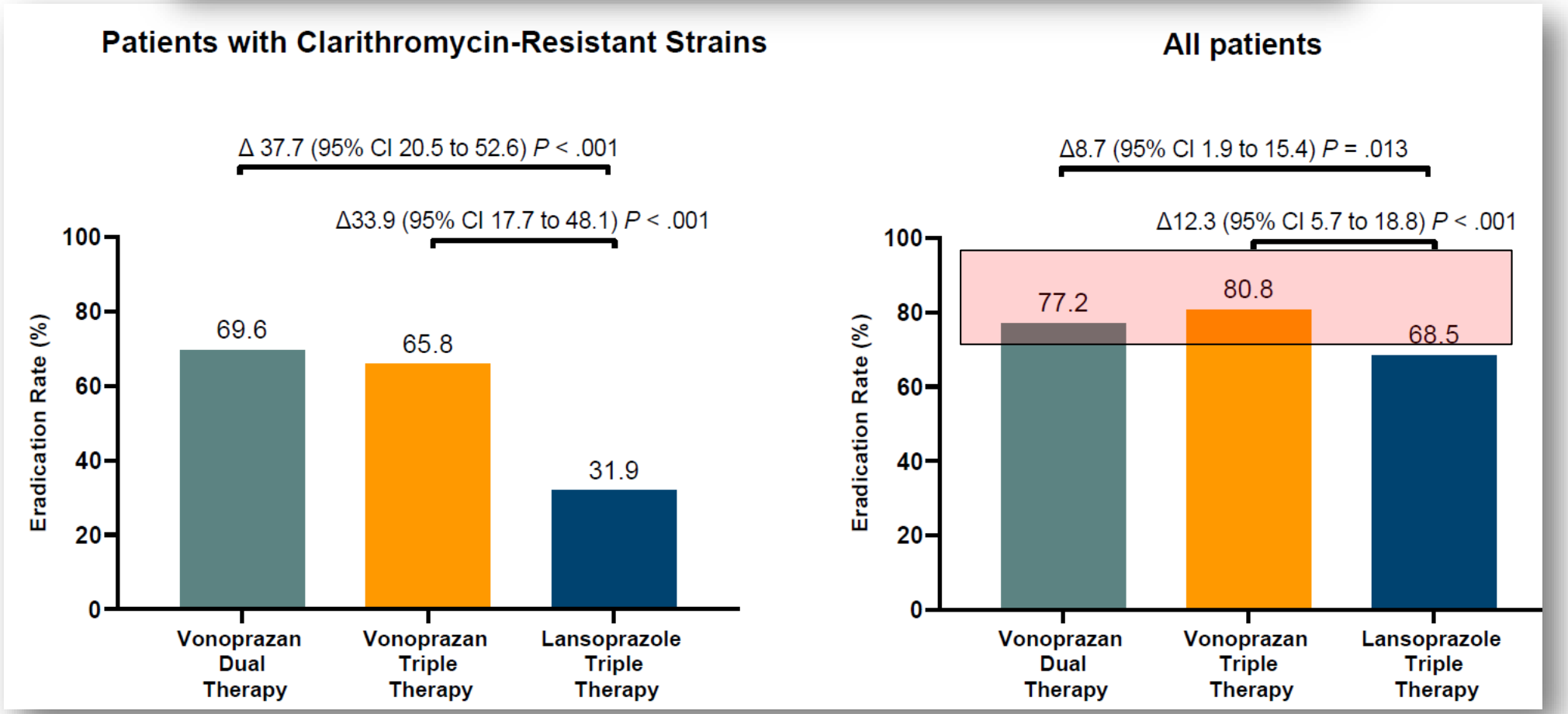
108 pacientes, Edad 67, 70% mujeres

	ITT
Sin terapia previa	86% (95%CI 79.4-92.5%)
2da terapia	85.7% (95%CI 71.8-99.5%)
Efectos adversos leves 31%	Náuseas (26%) Distensión 15%

Buitrago-Laguado J, Acta Med Colomb 2021; 46.

Vonoprazan Triple and Dual Therapy for *Helicobacter pylori* Infection in the United States and Europe: Randomized Clinical Trial

William D. Chey,[1] Francis Mégraud,[2] Loren Laine,[3,4] Luis J. López,[5] Barbara J. Hunt,[6] and Colin W. Howden[7]



Chey WD, Gastroenterology 2022;163:608-19

ORIGINAL ARTICLE

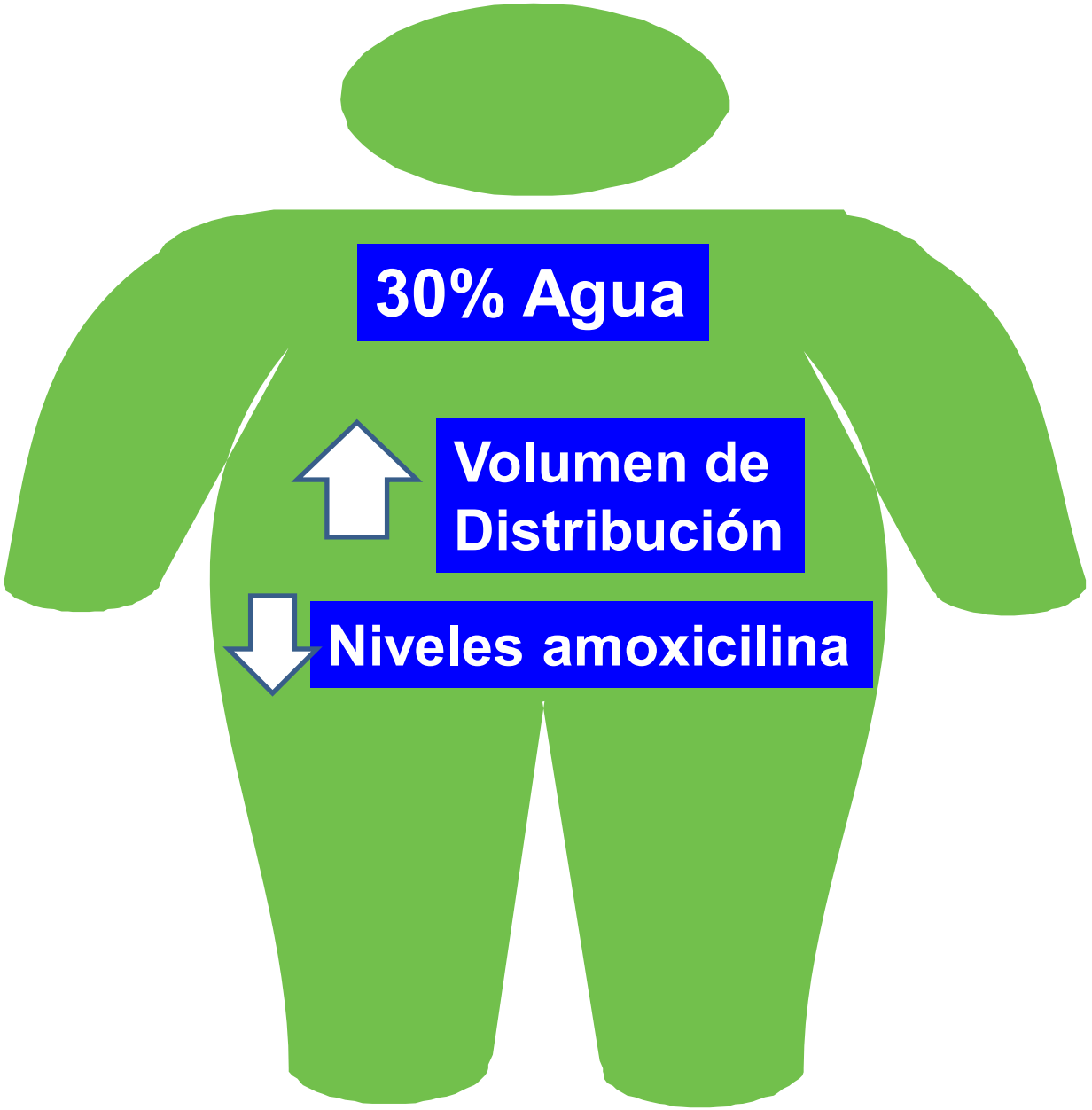
Helicobacter WILEY

Impact of body size on first-line *Helicobacter pylori* eradication success using vonoprazan and amoxicillin dual therapy

Hiroyuki Eto[1] | Sho Suzuki[2,3] | Chika Kusano[2] | Hisatomo Ikehara[2] | Ryoji Ichijima[2] | Hirotaka Ito[4] | Koichi Kawabe[5] | Masashi Kawamura[6] | Yoshioki Yoda[7] | Moriyasu Nakahara[1] | Takuji Gotoda[2]

Factors	Eradication success	*P*-value
<1.723	90.8% (99/109)	0.045‡
≥1.723	79.6% (43/54)	
BMI (kg/m^2)		
<22.4	95.6% (43/45)	0.047‡
≥22.4	83.9% (99/118)	

Eto H, et al. Helicobacter. 2021;26:e12788



Eto H, et al. Helicobacter. 2021;26:e12788

High-Dose Dual Therapy Versus Bismuth-Containing Quadruple Therapy for the Treatment of Helicobacter pylori *Infection: A Systematic Review with Meta-Analysis*

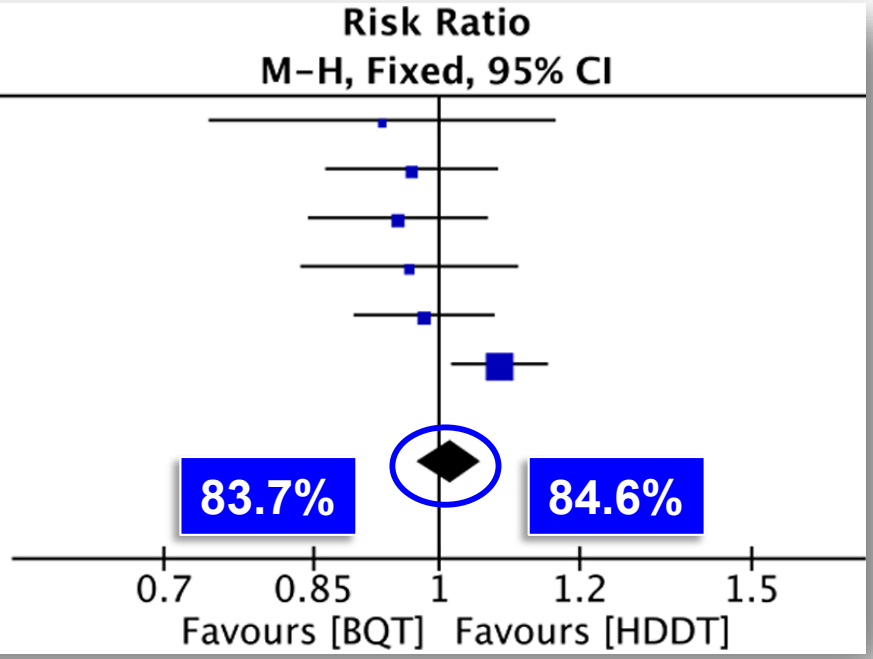
Zhikun Yin[1,2], Ji Li[2], Weifeng Huang[2], Xiaoyi Lei[1,2], Dong Xu[2], Guihua Xu[2], Hua Li[2], Jinyan Zhang[1,2]

[1]*Fujian Medical University The Third Clinical Medical College, Fuzhou, Fujian, China*
[2]*Department of Gastroenterology, The First Affiliated Hospital of Xiamen University Faculty of Medicine, Xiamen,*

Eficacia ITT

Study or Subgroup	HDDT Events	HDDT Total	BQT Events	BQT Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
S. Miehlke 2003	31	41	35	43	4.9%	0.93 [0.74, 1.16]	2003
F. Sapmaz 2017	83	98	86	98	12.5%	0.97 [0.86, 1.08]	2017
JL Hu 2017	139	174	75	89	14.4%	0.95 [0.84, 1.07]	2017
CP Gao 2018	58	70	62	72	8.9%	0.96 [0.84, 1.11]	2018
J Yang 2019	102	116	104	116	15.1%	0.98 [0.90, 1.07]	2019
ZQ Song 2020	331	380	306	380	44.3%	1.08 [1.02, 1.15]	2020
Total (95% CI)		**879**		**798**	**100.0%**	**1.01 [0.97, 1.06]**	
Total events	744		668				

Heterogeneity: $Chi^2 = 7.72$, $df = 5$ ($P = 0.17$); $I^2 = 35\%$
Test for overall effect: $Z = 0.69$ ($P = 0.49$)



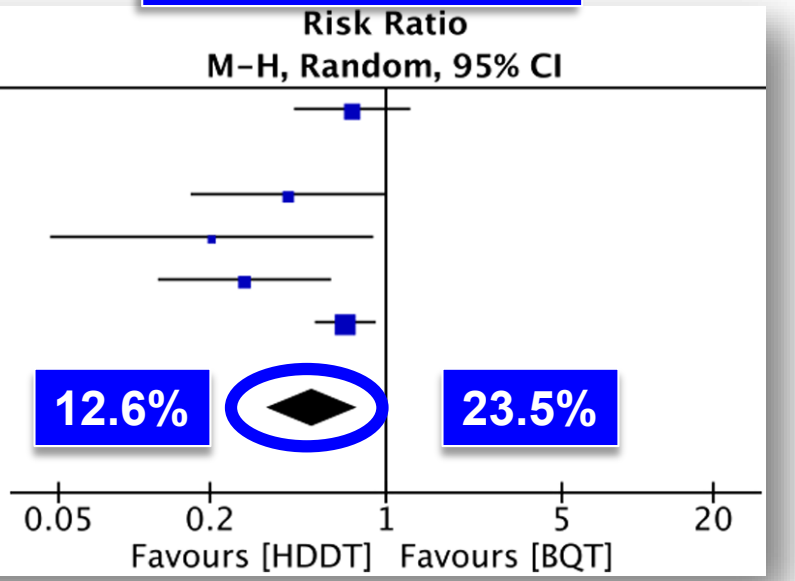
Yin Z, Turk J Gastroenterol 2022; 33:454-62

Efectos adversos

Study or Subgroup	HDDT Events	HDDT Total	BQT Events	BQT Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
S. Miehlke 2003	14	41	20	43	25.4%	0.73 [0.43, 1.25]	2003
F. Sapmaz 2017	0	0	0	0		Not estimable	2017
JL Hu 2017	8	174	10	89	14.5%	0.41 [0.17, 1.00]	2017
CP Gao 2018	2	65	10	66	6.7%	0.20 [0.05, 0.89]	2018
J Yang 2019	7	112	26	114	16.9%	0.27 [0.12, 0.61]	2019
ZQ Song 2020	66	375	96	376	36.3%	0.69 [0.52, 0.91]	2020
Total (95% CI)		**767**		**688**	**100.0%**	**0.51 [0.34, 0.78]**	
Total events	97		162				

Heterogeneity: $Tau^2 = 0.11$; $Chi^2 = 8.21$, df = 4 (P = 0.08); $I^2 = 51\%$

Test for overall effect: Z = 3.14 (P = 0.002)

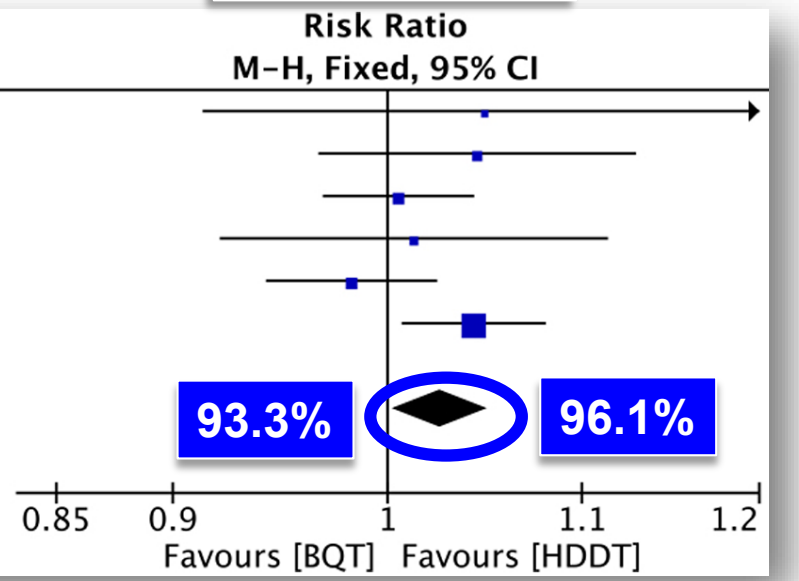


Cumplimiento

Study or Subgroup	HDDT Events	HDDT Total	BQT Events	BQT Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
S. Miehlke 2003	38	41	38	43	4.8%	1.05 [0.91, 1.20]	2003
F. Sapmaz 2017	93	98	89	98	11.6%	1.04 [0.97, 1.13]	2017
JL Hu 2017	171	174	87	89	15.0%	1.01 [0.97, 1.04]	2017
CP Gao 2018	65	70	66	72	8.5%	1.01 [0.92, 1.11]	2018
J Yang 2019	112	116	114	116	14.9%	0.98 [0.94, 1.02]	2019
ZQ Song 2020	361	375	347	376	45.2%	1.04 [1.01, 1.08]	2020
Total (95% CI)		**874**		**794**	**100.0%**	**1.03 [1.00, 1.05]**	
Total events	840		741				

Heterogeneity: $Chi^2 = 6.53$, df = 5 (P = 0.26); $I^2 = 23\%$

Test for overall effect: Z = 2.23 (P = 0.03)

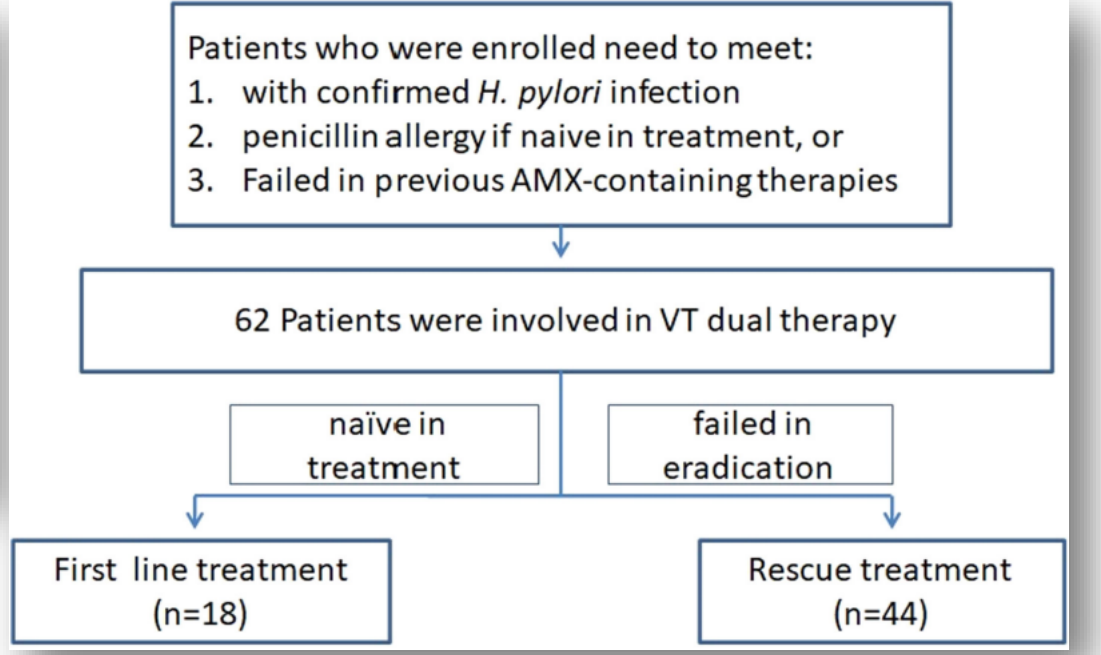


Yin Z, Turk J Gastroenterol 2022; 33:454-62

A real-world exploratory study on the feasibility of vonoprazan and tetracycline dual therapy for the treatment of *Helicobacter pylori* infection in special populations with penicillin allergy or failed in previous amoxicillin-containing therapies

Wen Gao[1] | Ying Xu[1] | Jianxiang Liu[1] | Xiaolei Wang[1] | Xinhong Dong[1] | Guigen Teng[1] | Binbin Liu[1] | Jinpei Dong[1] | Chaoyi Ge[1] | Hui Ye[2] | Xuezhi Zhang[2] | Hong Cheng[1]

< 75 Kg Tetraciclina 500 mg 3 v/día
>75 Kg Tetraciclina 500 mg 4 v/día



	VT dual therapy			
	First-line treatment (n = 18)	Rescue treatment (n = 44)	p Value	Total (n = 62)
Eradicated	18	40	.18	58
Failed	0	4		4
Eradication rate (95% CI)	100% (82.4–100%)	90.9% (78.8–96.4%)		93.5% (84.5–97.5%)

Gao W, Helicobacter 2023 On line Enero 30

Bismuth quadruple regimen with tetracycline or doxycycline versus three-in-one single capsule as third-line rescue therapy for *Helicobacter pylori* infection: Spanish data of the European *Helicobacter pylori* Registry (Hp-EuReg)

Olga P. Nyssen[1] | Angeles Perez-Aisa[2] | Luis Rodrigo[3] | Manuel Castro[4] | Pilar Mata Romero[5] | Juan Ortuño[6] | Jesus Barrio[7] | Jose Maria Huguet[8] | Ines Modollel[9] | Noelia Alcaide[10] | Alfredo Lucendo[11] | Xavier Calvet[12] | Monica Perona[13] | Barbara Gomez[14] | Blas Jose Gomez Rodriguez[15] | Pilar Varela[16] | Manuel Jimenez-Moreno[17] | Manuel Dominguez-Cajal[18] | Liliana Pozzati[19] | Diego Burgos[20] | Luis Bujanda[21] | Jenifer Hinojosa[2] | Javier Molina-Infante[5] | Tommaso Di Maira[6] | Luis Ferrer[8] | Luis Fernández-Salazar[10] | Ariadna Figuerola[12] | Llucia Tito[14] | Cristobal de la Coba[16] | Judith Gomez-Camarero[17] | Nuria Fernandez[2] | Maria Caldas[1] | Ana Garre[1] | Elena Resina[1] | Ignasi Puig[22] | Colm O'Morain[23] | Francis Megraud[24] | Javier P. Gisbert[1]

Nyssen OP, et al. Helicobacter. 2020;25:e12722.

Doxiciclina vs Tetraciclina

TABLE 3 Effectiveness and compliance according to treatment and length

Effectiveness, N (%)		Compliance	mITT, N	mITT	(95% CI)	PP, N	PP	(95% CI)
BQT-Tet	All	82 (97%)	64	76%	(66-86)	63	77%	(67-86)
	10 d*	29 (97%)	19	66%	(47-85)	19	66%	(47-85)
	14 d	45 (96%)	45	82%	(71-93)	44	83%	(72-94)
BQT-Dox	All	85 (93%)	58	65%	(55-76)	56	66%	(55-77)
	10 d*	37 (90%)	25	63%	(46-79)	23	63%	(45-79)
	14 d	53 (96%)	32	70%	(55-84)	32	71%	(57-85)
BQT-three-in-one	All	267 (95.5%)	261	88%	(83-92)	251	84%	(84-93)
	10 d*	249(96%)	222	88%	(83-92)	245	88%	(84-92)
	14 d	5 (80%)	5	100%	NA	4	100%	NA

Nyssen OP, et al. Helicobacter. 2020;25:e12722.

H.pylori
300 mg 2v/dìa ?

Tratamiento *H.pylori*

1ª línea

Cuádruple clásica
IBP +Amox+Tetrac+Bi
Triple Claritromicina + Bi
Dual: IBP+ AMOX
IBP +Tetrac

2ª línea
10-20%

Cuádruple clásica
IBP+Amox+ Tetrac +Bi
Triple ***levofloxacina*** +Bi
Dual

3ª línea
5-10%

Cuádruple clásica
Triple ***levofloxacina*** +Bi
Concomitante
Dual

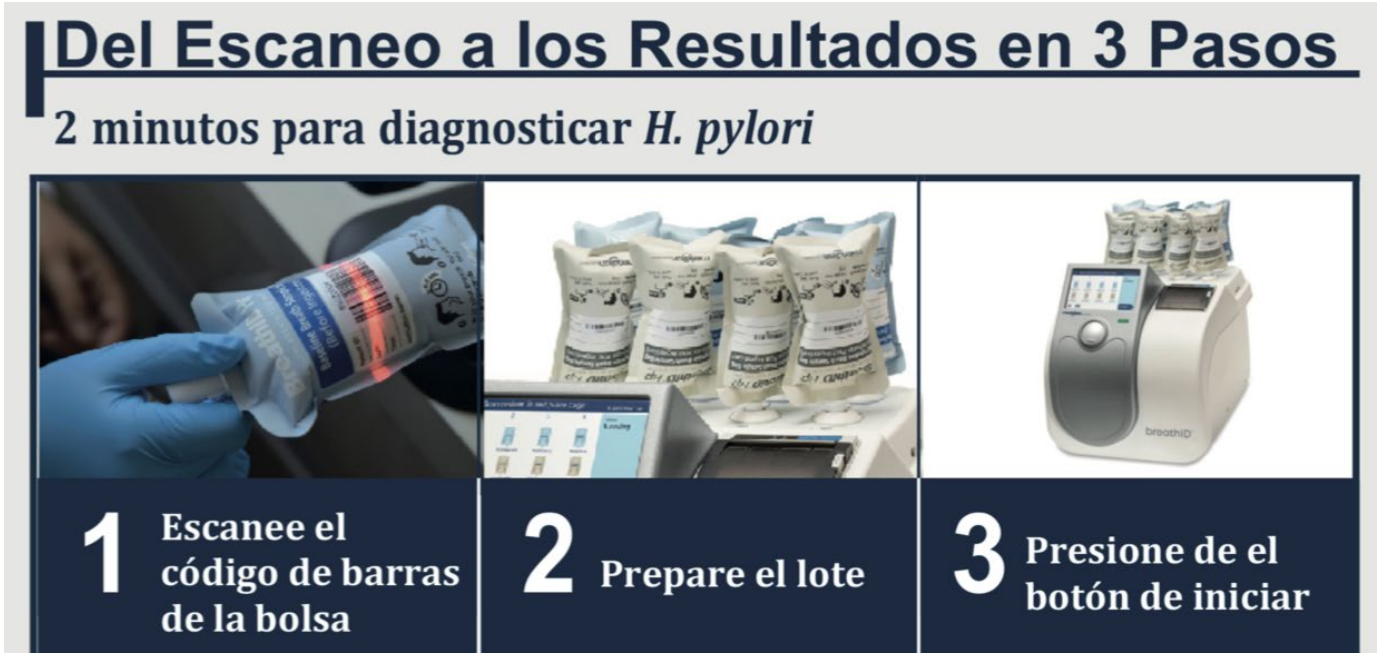
4ª línea

Cuádruples Furazolidona
Cuádruple Rifabutina

Liou JM, Gut Liv 2021 On line March 31c
Otero W, Temas Escogidos Gastroenterlogia, ACG 2022
Otero W, PLM Ecuador 2023

Verificaciòn de curaciòn
> 4 semanas pos tratamiento

UBT C^{13} No radiactivo



UBT C^{14}

Antìgenos fecales

Endoscopia alta

Board Review Gastroenterology 202
Maastricht 2022

Mensajes para la casa

H.pylori, muy difícil de matar

Pruebas
Susceptibilidad
Optimización

Morirás

Morirás

Morirás

Morirás

Empíricas
Bien elegidas
Optimización

Muchas gracias !