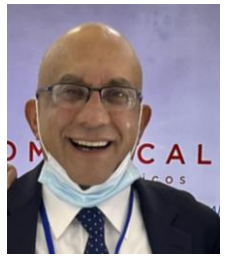
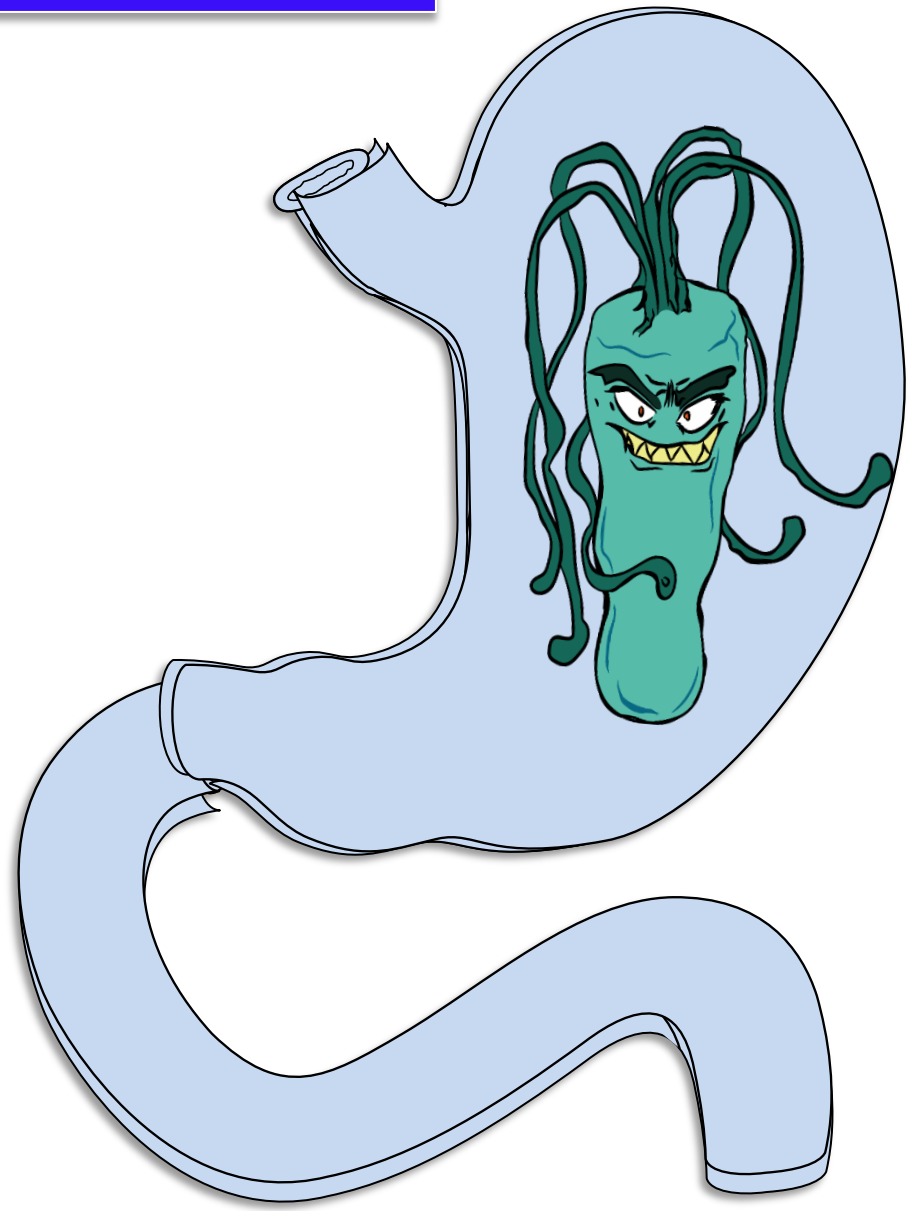
III CURSO FORMATIVO de Residentes de Medicina Interna ACMI 2022

Porqué y cómo tratar H.pylori actualmente



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

Canal YouTube "William Otero Gastroenterólogo"



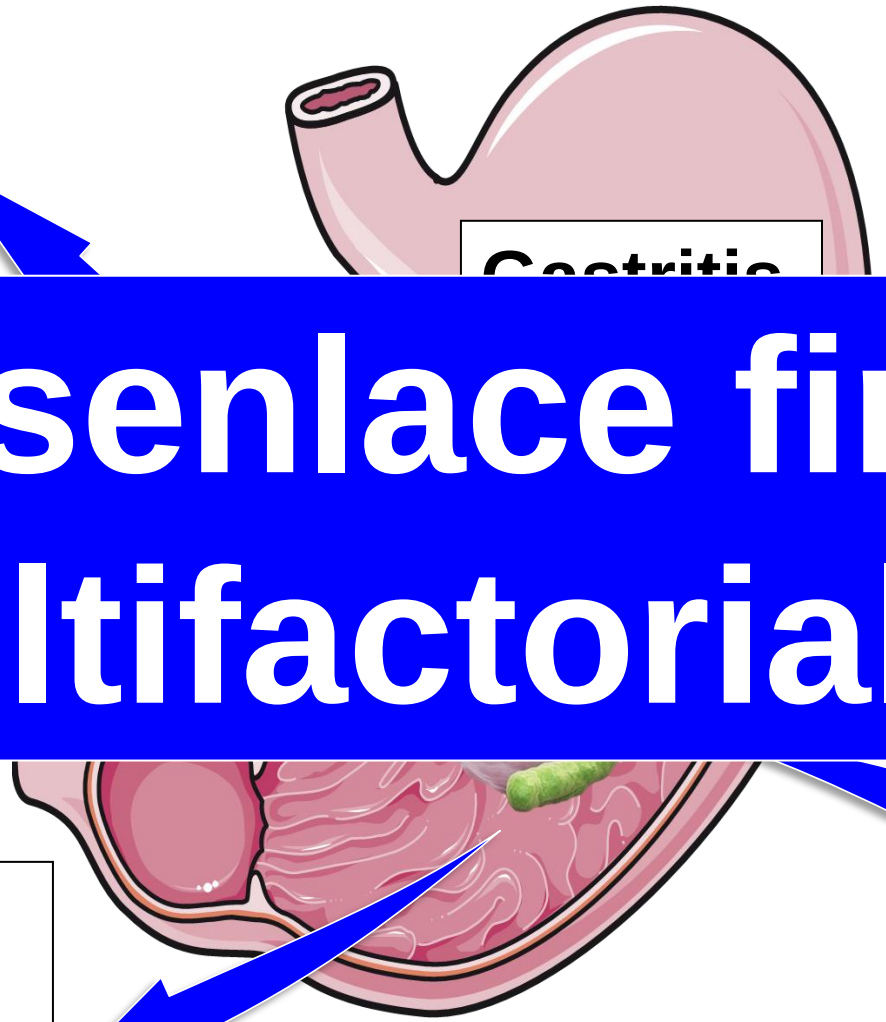
Prevalencia mundial *H.pylori* 60%

Hooi JKY, Gastroenterology 2017;153:420-9

Consecuencias *H.pylori*

Úlceras pépticas
10-15%

Linfoma
MALT gástrico
<0.1%



Dispepsia 5

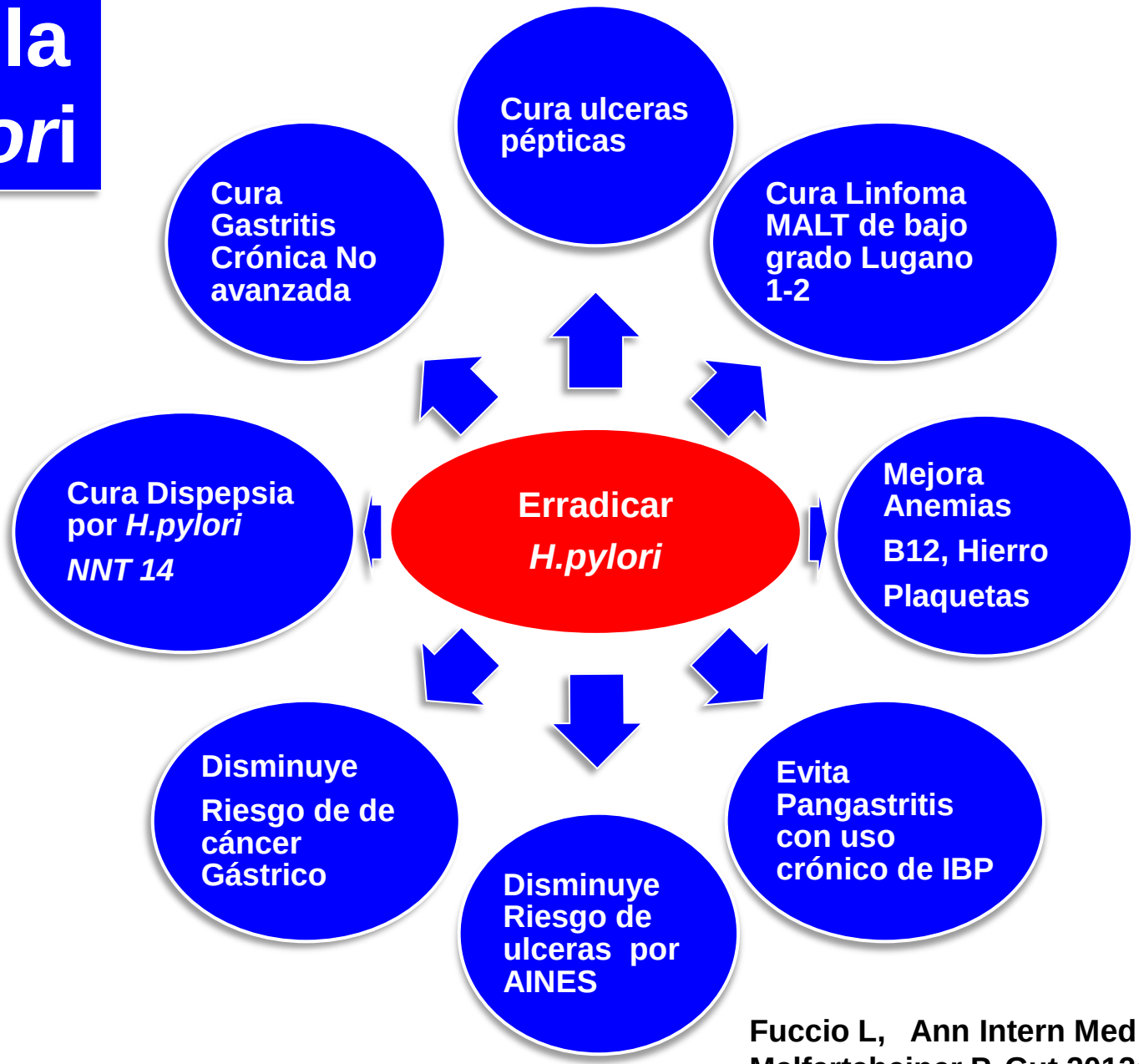
Desenlace final
Multifactorial

Anemia ferropénica
Anemia déficit B12
Trombocitopenia inmune
% desconocido

Cáncer
Gástrico 1-3%

Otero W, 2022

Beneficios con la Curación *H.pylori*



Fuccio L, Ann Intern Med 2009;151:121-8
Malferteheiner P, Gut 2012;61:646-64

H.pylori encontrado = *H. pylori tratado*

Sugano K, Kyoto Consensus. Gut 2015;65:1353-67

Erradicación de *Helicobacter pylori* en el mundo

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[*,‡]

Clin Gastroenterol Hepatol 2018;16:992–1002

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

Received: 7 February 2019 | Revised: 8 April 2019 | Accepted: 14 April 2019
DOI: 10.1111/hel.12597

Helicobacter. 2019;24:e1259

Helicobacter WILEY

Guidelines for the management of *Helicobacter pylori* infection in Japan: 2016 Revised Edition

Mototsugu Kato[1] | Hiroyoshi Ota[2] | Masumi Okuda[3] | Shogo Kikuchi[4] | Kiichi Satoh[5] | Tadashi Shimoyama[6] | Hidekazu Suzuki[7] | Osamu Handa[8] | Takahisa Furuta[9] | Katsuhiro Mabe[1] | Kazunari Murakami[10] | Toshiro Sugiyama[11] | Naomi Uemura[12] | Shin'ichi Takahashi[13]

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 V/Florence Consensus Report

P Malfertheiner,[1] F Megraud,[2] C A O'Morain,[3] J P Gisbert,[4,5] E J Kuipers,[6] A T Axon,[7] F Bazzoli,[8] A Gasbarrini,[9] J Atherton,[10] D Y Graham,[11] R Hunt,[12,13] P Moayyedi,[14] T Rokkas,[15] M Rugge,[16] M Selgrad,[17] S Suerbaum,[18] K Sugano,[19] E M El-Omar,[20] on behalf of the European Helicobacter and Microbiota Study Group and Consensus panel

Malfertheiner P, et al. Gut 2017;66:6–30

H.pylori

Difícil de erradicar

Curación *H.pylori*

1982

No hay tratamiento universal

Guías generales

Terapias locales optimizadas
Patrón de resistencia
Farmacogenética IBP

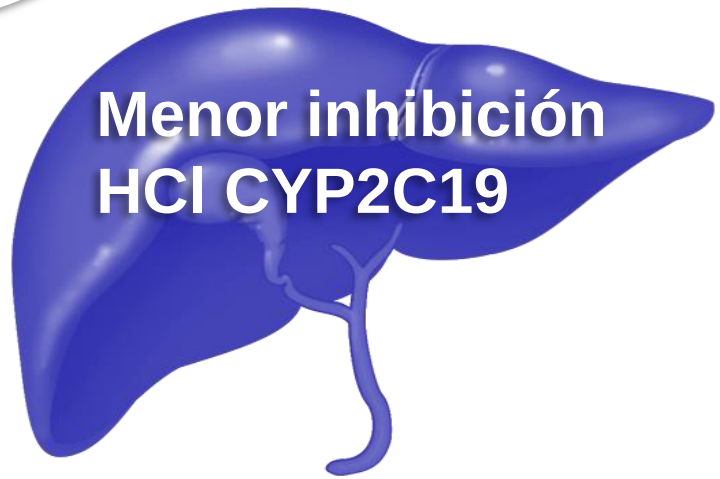
Resistencia H.pylori
A los antibióticos

Tabaquismo
***H.p* baja virulencia**

Causas de falla en la erradicación

60-90%

No Cumplimiento

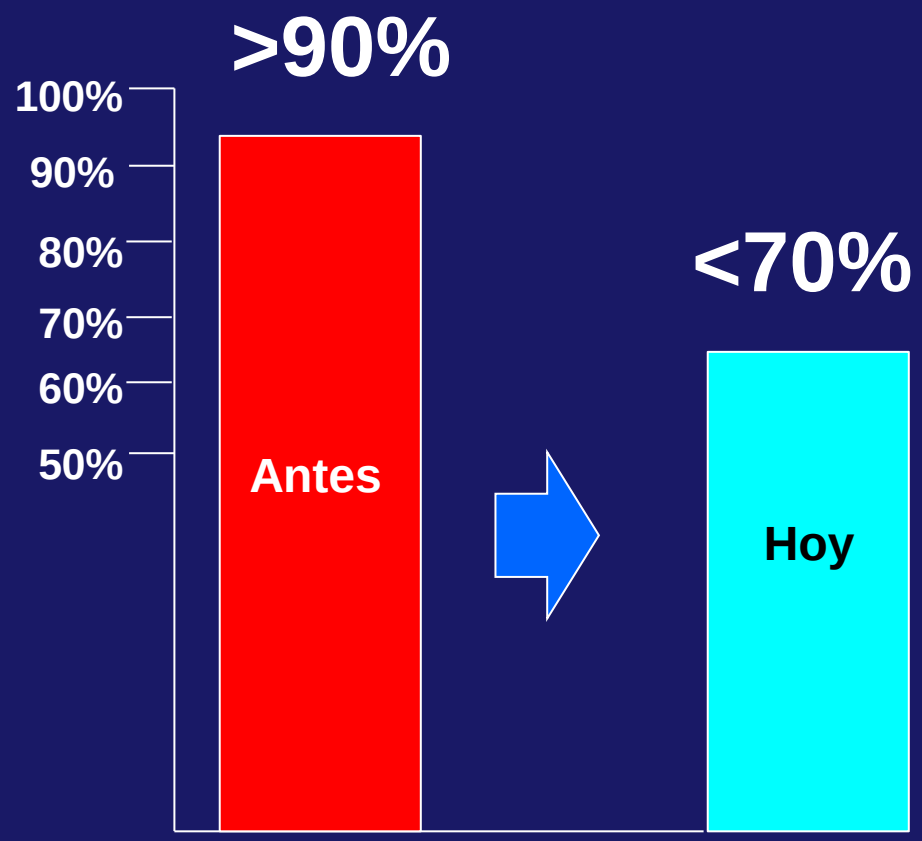


Shah SC, Gastroenterology 2021;160:1831-41

H.pylori

Resistencia antimicrobiana

Terapia triple estándar claritromicina



Chey WD, Am J Gastroenterol 2007;102:1808-25
Graham DY, Nat clin Pract Gastroenterol Hepatol 2008;5:321-31

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

Alessia Savoldi,[1] Elena Carrara,[2] David Y. Graham,[3] Michela Conti,[2] and Evelina Tacconelli[1,2]

Resistencia in vitro	Probabilidad falla Terapéutica
Claritromicina	7.0 (IC 95% 5.2-9.3)
Levofloxacina	8.2 (IC 95% 3.8-17.6)
Metronidazol	2.5 (IC 95%1.8-3.5)

Gastroenterology 2018;155:1372-82

Cigarrillo

ORIGINAL ARTICLE

Helicobacter WILEY

Impact of smoking on the eradication of *Helicobacter pylori*

Jing Yu[1,2*] | Peng Yang[1,2*] | Xiangrong Qin[1*] | Chunjian Li[1] | Yiming Lv[1] | Xiaoyong Wang[1]

Meta-análisis 39 estudios

	Fracaso terapéutico
Fumar	OR 1.70 (IC 05% 1.49-1.93)
> 5 cigarrillos/dia	OR 2.59, 95% (IC 96% 1.28–5.24
Fumar actualmente	OR 2.49, 95% (IC95% 1.52–4.06).
Vonoprazan	OR 0.94, 95% (IC 95% 0.51–1.75)

Yu J, et al. Helicobacter. 2022;27:e12860.

H. pylori

Secreción HCl
Bacterias no replicativas
Actividad CYP 2c19
Flujo sanguíneo, menos AB
Adherencia tratamiento

Itskoviz D, et al *Dig Liver Dis* 2017;49:764-768.
Parente F, et al *Gut*. 1985;26:1327-1332.
Molina-Infante, et al *World J Gastroenterol* 2014;14:10338-347.
Endoh K, *Gastroenterology*. 1994;107:864-878.
Yang YN,. *Clin Appl Thromb Hemost*. 2010;16:579-583.

Esquemas de Erradicación

IBP altas dosis

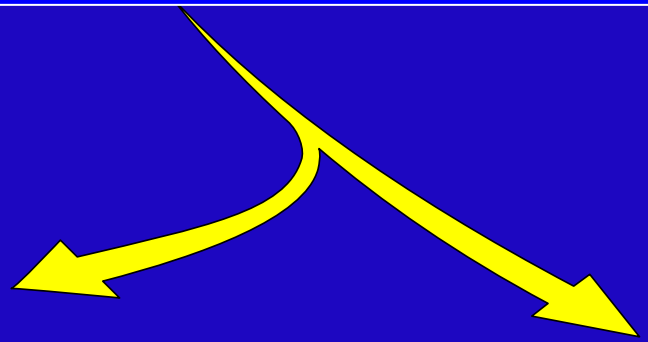
pH

Actividad Antibióticos
Amoxicilina
Claritromicina
Levofloxacina

Aumentar Replicación *H.pylori*
pH 6-8

Ierardi E, World J Gastroenterol 2019;25: 5097-5104
Otero W, Temas Escogidos de Gastroenterologia 2021

CYP2C19 **"Normal, ultraràpidos, pobres"**
Ràpido: inactiva el IBP < inhibiciòn HCl
Pobre: no inactiva el IBP > inhibiciòn HCl



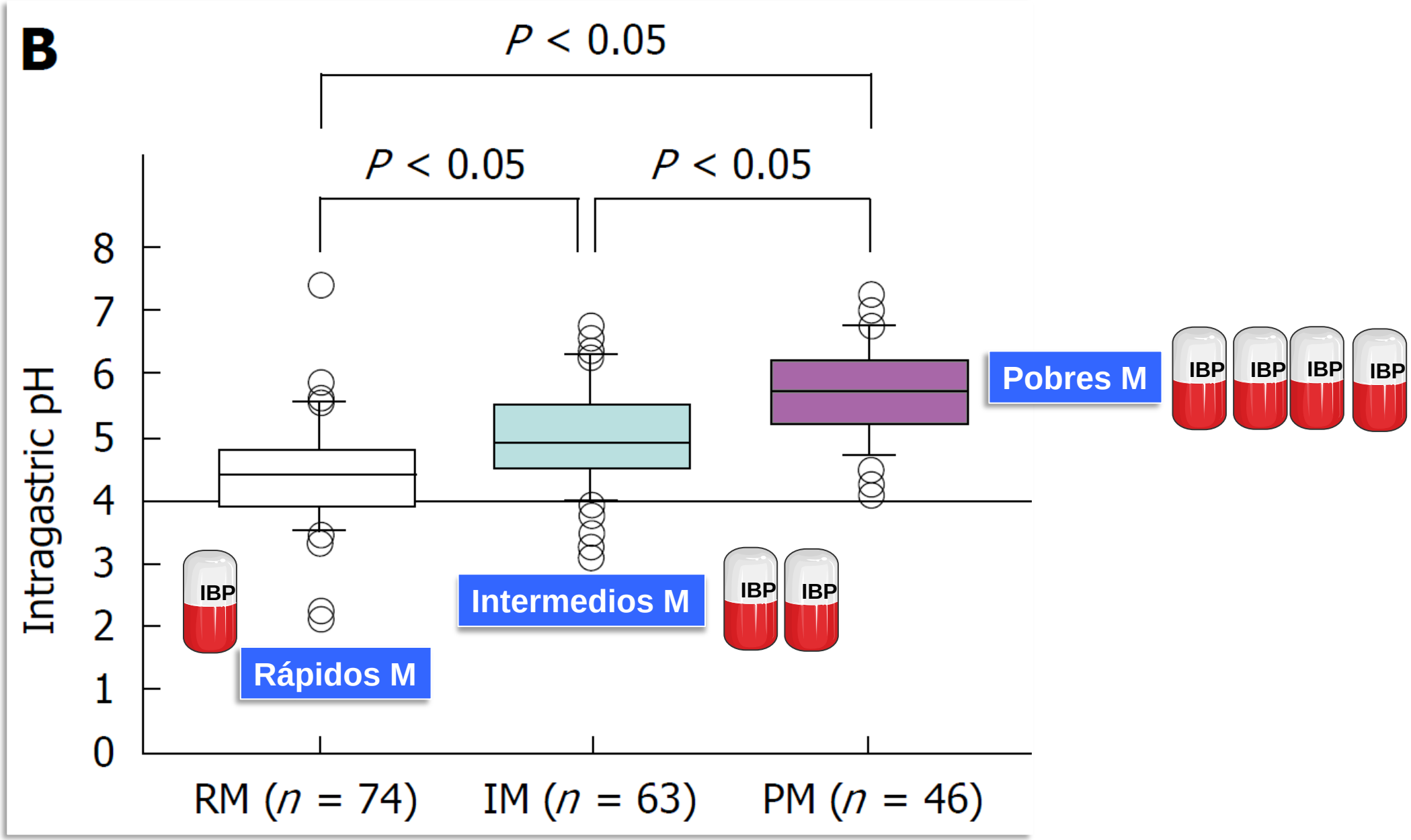
1a generación
Dependientes

Omeprazol
Lansoprazol
Pantoprazol

2a generación
Mínima influencia

Esomeprazol
Rabeprazol

El Rouby N, Exp Opin Drug Metab Toxicol 2018;14:447-60
Hagymàsi K, Pharmacogenomics 2011;12:873-88



Sugimoto M, World J Gastroenterol 2014;20: 6400-11

Host Genetic Determinants Associated With *Helicobacter pylori* Eradication Treatment Failure: A Systematic Review and Meta-analysis

Shailja C. Shah,[1,2,3,4] Adam Tepler,[3] Cecilia P. Chung,[6,7] Giovanni Suarez,[3] Richard M. Peek Jr,[3] Adriana Hung,[8,9] Christianne Roumie,[8,10] and Neeraj Narula[11]

57 estudios
Pacífico Asiático (Japón 24, Taiwan 6, Korea 5, Tailandia 1)
Europa (Alemania 3, Polonia 3, Italia 1)
Sur américa (Brazil 2)

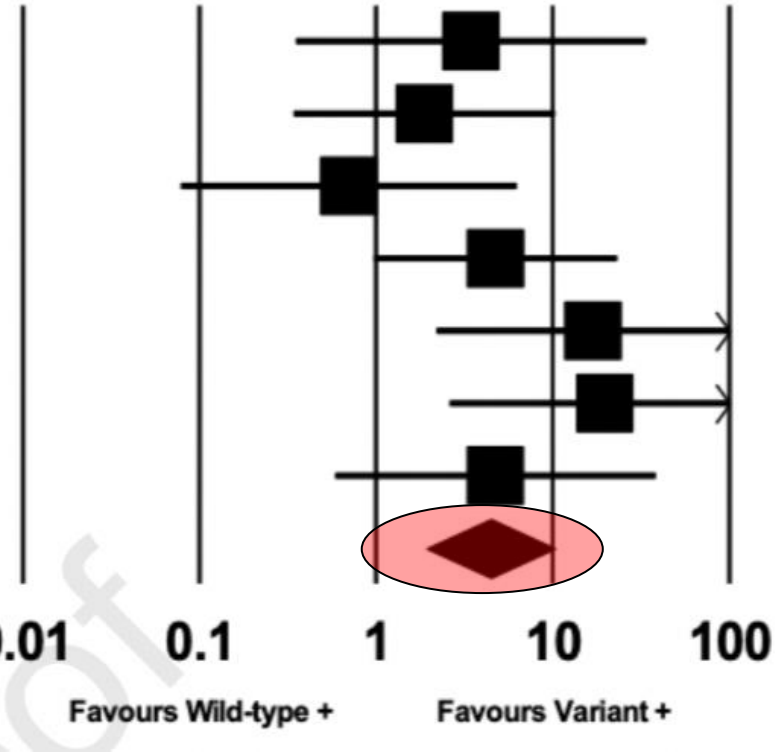
Gastroenterology 2021;161:1443–1459

Hpylori sensible a claritromicina o resistencia < 15% IBP primera generaciòn Lansoprazol, omeprazol pantoprazol Metabolizadores ràpidos

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Isomoto, 2003	3.438	0.352	33.612	1.061	0.289
Kawabata, 2004	1.875	0.342	10.269	0.725	0.469
Miki, 2003	0.700	0.079	6.224	-0.320	0.749
Sheu, 2005	4.742	0.975	23.062	1.929	0.054
Furuta, 2001	16.875	2.202	129.312	2.720	0.007
Furuta, 2004	19.753	2.617	149.103	2.893	0.004
Kang, 2008	4.738	0.589	38.140	1.462	0.144
	4.443	1.944	10.157	3.535	0.000

Statistics for each study

Odds ratio and 95% CI



Riesgo de Falla terapùtica

Shah SC, Gastroenterology 2021;161:1443–1459

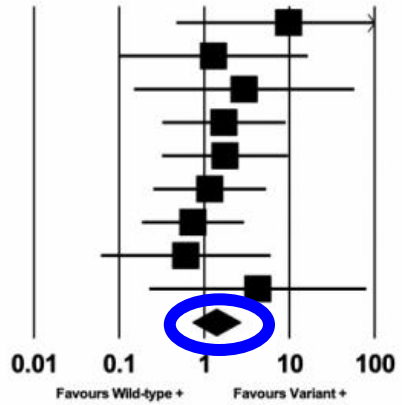
Ràpidos versus Pobres metabolizadors

Esomeprazol 9 estudios

Rabeprazol 18 estudios

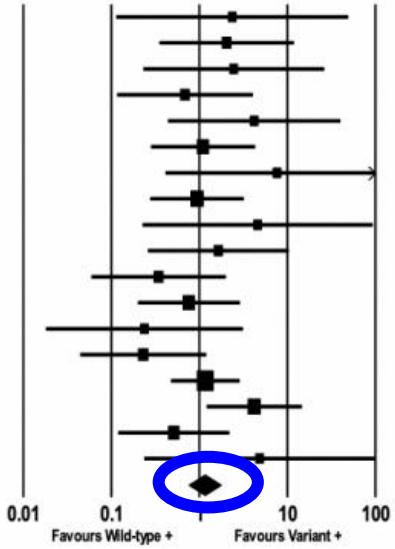
2B.

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Pan, 2010	9.783	0.473	202.374	1.475	0.140
Pan*, 2010	1.286	0.101	16.340	0.194	0.846
Miehlke, 2008	2.941	0.150	57.555	0.711	0.477
Sheu, 2005	1.705	0.323	9.007	0.628	0.530
Wu, 2011	1.750	0.321	9.554	0.646	0.518
Song, 2016	1.159	0.253	5.304	0.191	0.849
Okimoto, 2016	0.735	0.186	2.908	-0.438	0.661
Liou, 2011	0.606	0.061	5.985	-0.429	0.668
Kang, 2008	4.248	0.227	79.518	0.968	0.333
	1.387	0.723	2.662	0.984	0.325



2C.

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Isomoto*, 2003 - 7 days	2.368	0.114	49.041	0.558	0.577
Isomoto*, 2003 - 14 days	2.045	0.354	11.820	0.800	0.424
Yang, 2009	2.462	0.232	26.114	0.748	0.455
Pan, 2010	0.688	0.117	4.056	-0.414	0.679
Inaba, 2002	4.200	0.442	39.943	1.249	0.212
Miyoshi, 2001	1.100	0.283	4.282	0.137	0.891
Lay, 2010	7.638	0.414	140.829	1.367	0.172
Okimoto, 2016	0.942	0.278	3.189	-0.096	0.924
Lin, 2017	4.600	0.227	93.032	0.995	0.320
Dojo, 2001	1.647	0.262	10.359	0.532	0.595
Miki, 2003	0.345	0.060	1.993	-1.190	0.234
Lee, 2003	0.762	0.201	2.884	-0.400	0.689
Phiphatpatthamaamphan, 2016	0.238	0.018	3.121	-1.093	0.274
Kawabata, 2003	0.231	0.045	1.197	-1.746	0.081
Lee, 2010*	1.169	0.478	2.862	0.343	0.732
Kuwayama, 2007	4.211	1.216	14.585	2.268	0.023
Hokari, 2001	0.513	0.120	2.190	-0.902	0.367
Jiang, 2005	4.846	0.237	98.960	1.025	0.305
	1.153	0.761	1.748	0.674	0.501



Shah SC, Gastroenterology 2021;161:1443–1459

Influence of *Cytochrome P450 2C19* Genotype on *Helicobacter pylori* Proton Pump Inhibitor-Amoxicillin-Clarithromycin Eradication Therapy: A Meta-Analysis

OPEN ACCESS

Edited by:

Yuko Morino[1], Mitsushige Sugimoto[2], Naoyoshi Nagata[2], Ryota Niikiura[2], Eri Iwata[2], Mariko Hamada[2], Yusuke Kawai[2], Tatsuhiro Fujimiya[3], Hironori Takeuchi[4], Sakae Unezaki[3] and Takashi Kawai[2]*

25 ensayos clínicos controlados aleatorizados

24 ASIA, 1 Suramérica (Colombia), 5318 pacientes, Tasa resistencia: Amoxi 8.9%, Cla 13%

Morino Y, Front Pharmacol 2021;12:759240

Influence of *Cytochrome P450 2C19* Genotype on *Helicobacter pylori* Proton Pump Inhibitor-Amoxicillin-Clarithromycin Eradication Therapy: A Meta-Analysis

Yuko Morino[1], Mitsushige Sugimoto[2], Naoyoshi Nagata[2], Ryota Niikiura[2], Eri Iwata[2], Mariko Hamada[2], Yusuke Kawai[2], Tatsuhiro Fujimiya[3], Hironori Takeuchi[4], Sakae Unezaki[3] and Takashi Kawai[2]*

Extensos metabolizadores

Lansoprazol y omeprazol
Menor tasa erradicación

Esomeprazol y rapeprazol
No son influidos

Morino Y, Front Pharmacol 2021;12:759240

Gastroenterology 2021;160:1831–1841

CLINICAL PRACTICE UPDATE

AGA Clinical Practice Update on the Management of Refractory *Helicobacter pylori* Infection: Expert Review

Shailja C. Shah,[1,2,3] Prasad G. Iyer,[4] and Steven F. Moss[5]

Best Practice Advice 7: Inadequate acid suppression is associated with *H pylori* eradication failure. The use of high-dose and more potent PPIs, PPIs not metabolized by *CYP2C19*, or potassium-competitive acid blockers, if available, should be considered in cases of refractory *H pylori* infection.

Opciòn Rabeprazol, Esomeprazol, Vonoprazan, Tegoprazan o aumentar dosis de IBP 1era generaciòn

Cyp2C19

Rápido, Ultrarrápido
80-84%

Esomeprazol menos Influido por el CYP 70% vs 90% OME Rabeprazol

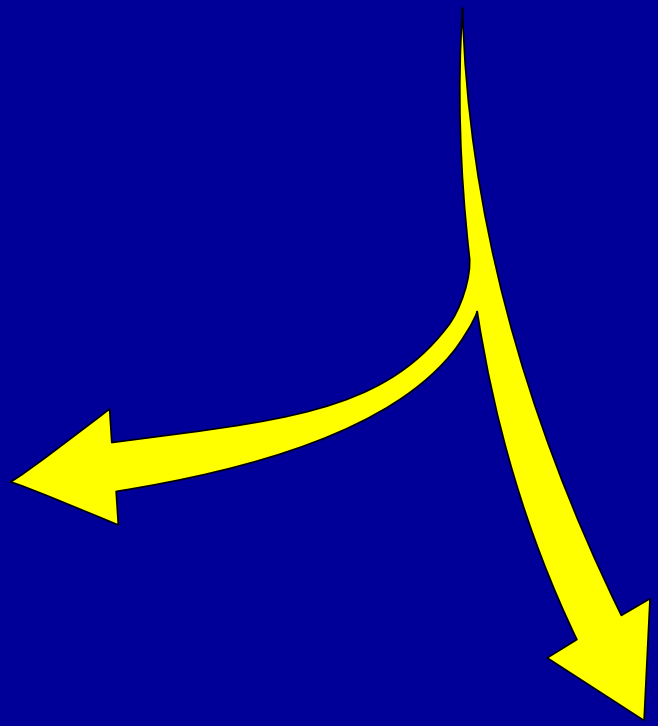
Isaza C, BMC Clin Pharmacol. 2007;7:6.
Arévalo A, Tresplacios A, Otero W, Helicobacter 2019;24:e12574
Arevalo A, Otero W PLoS One. 2021;16:e0245401

Antibióticos utilizados

H.pylori

Otero W, Rev Gastroenterol Per 2018;38:54-63.

Tratamientos para curar *Hpylori*



Pruebas Susceptibilidad

Empìricas

Mundialmente

No hay disponibilidad
Pruebas susceptibilidad

Optimizar Tratamiento empírico

Esquemas

Cuádruples

Clásica

Triples tradicionales +bismuto

Dual

Concomitante

Híbridas

Otero W, 2022

LATAM Terapia cuádruple con bismuto 14 días

IBP +

30 min antes desayuno
30 min antes de cena

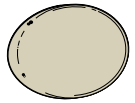
Bismuto SS

+

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

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

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

Triples terapias “Antiguas” + Bismuto: 14d

IBP en ayunas y antes de cena +
Amoxicilina 875 mg 3 v/d o 500mg c/6h +
Claritromicina 500 mg 2v/día O
Levofloxacina 500 mg/ 1/vd

+

SS Bismuto (Bisbacter)
2 tabletas dos veces al día

Eficacia 88-94%

Ko SW, Helicobacter 2019;24:e12570
Gilbert JP, Moleculas 2020;25:5084
Zhang W, Gut 2015;64:171

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 + IBP 14 días

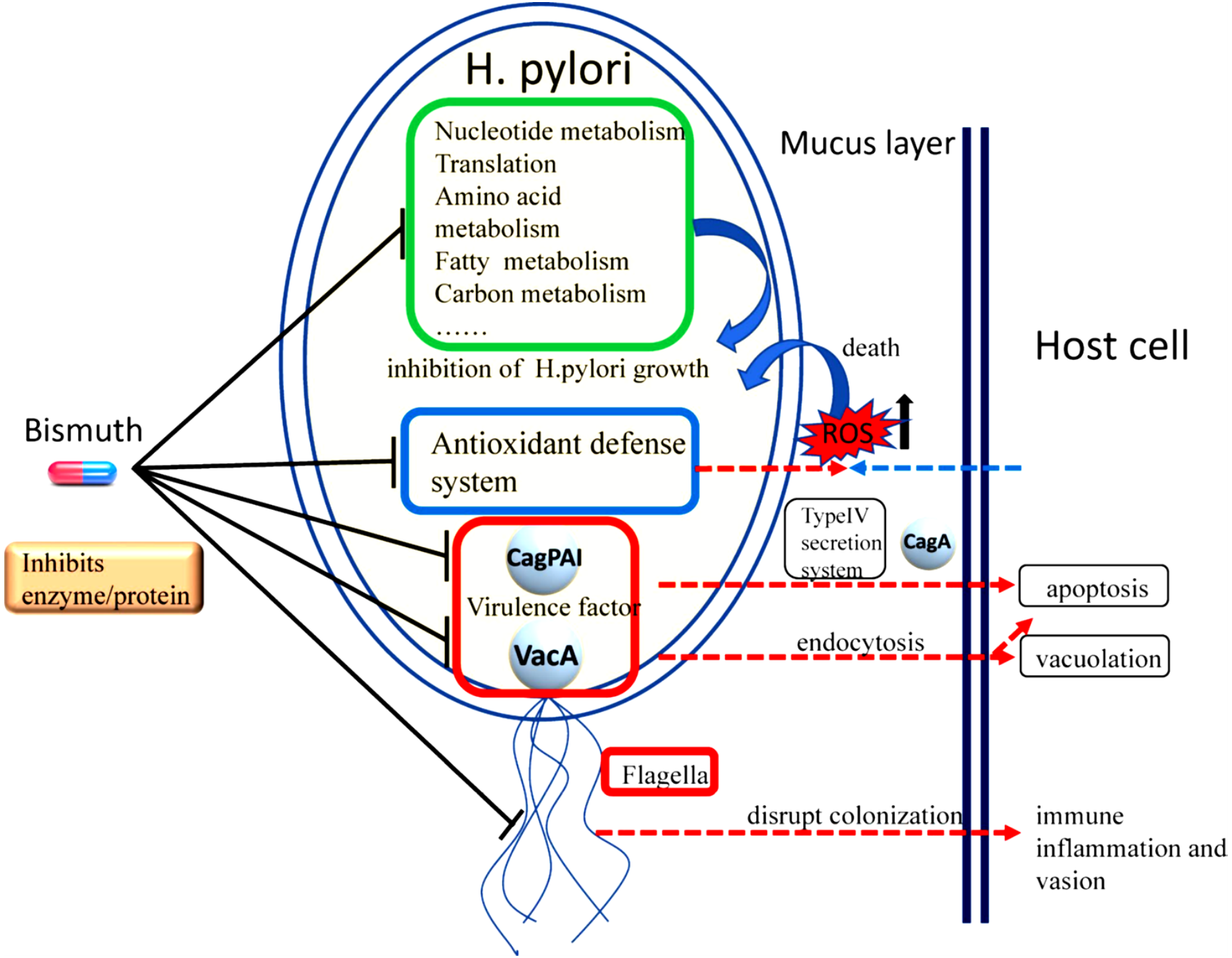
90%

Clin Gastroenterol Hepatol 2020;18:89-98

Adiciòn de Bismuto

10-30%

Dore MP, Gut 2016;65:870-8
Zhang W, Gut 2015;64:1715
Marcus EA, Aliment Pharmacol Ther 2015;42:922-33


H. pylori
Nucleotide metabolism
Translation
Amino acid metabolism
Fatty metabolism
Carbon metabolism
……
inhibition of H.pylori growth
Mucus layer
Host cell
death
Bismuth
Antioxidant defense system
ROS
Inhibits enzyme/protein
CagPAI
Virulence factor
VacA
TypeIV secretion system
CagA
apoptosis
endocytosis
vacuolation
Flagella
disrupt colonization
immune inflammation and vasion

Terapias triples clásicas
IBP + Amoxicilina +
Claritro O Metro O Levo

Terapia cuádruple Clásica

Terapias híbridas

Terapias cuádruples con
Rifabutina

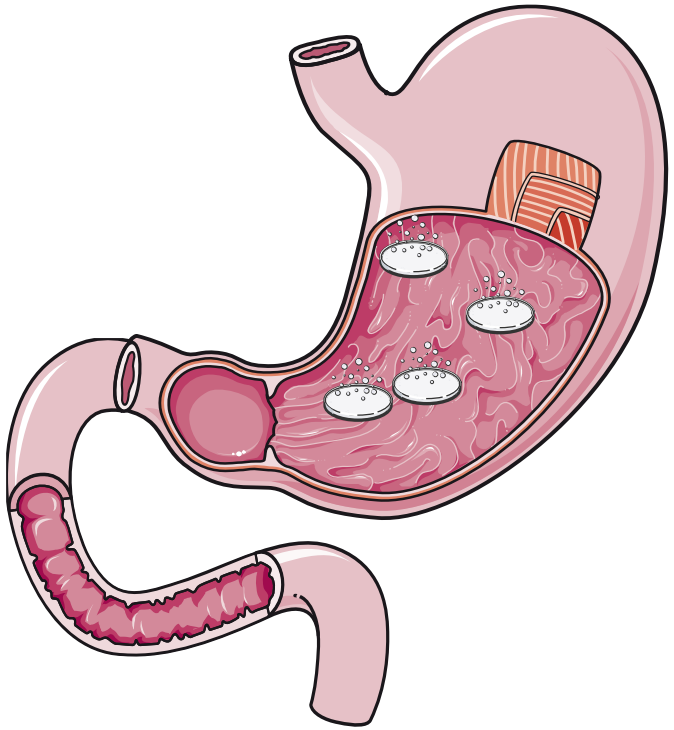
Otero W, Rev Col Gastroenterol 2022, sometido a publicación

Dual
14 dìas

Consensos
Rescate

Amoxicilina
1gr 3v/dia o 750 mg cada 6h?

Dosis altas IBP
Esomeprazol 40 mg 3v/d



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.

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

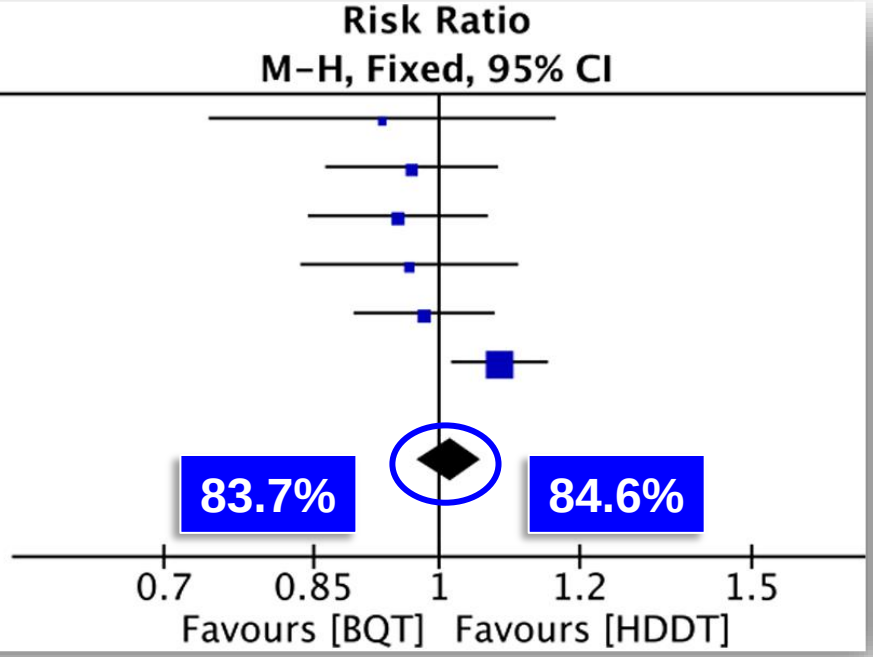
Zhikun Yin[1,2], Ji Li[2], Weifeng Huang[2], Xiaoyi Lei[1,2], Dong Xu[2], Guihua Xu[2], Hua Li[2], Jinyan Zhang[1,2]

[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

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

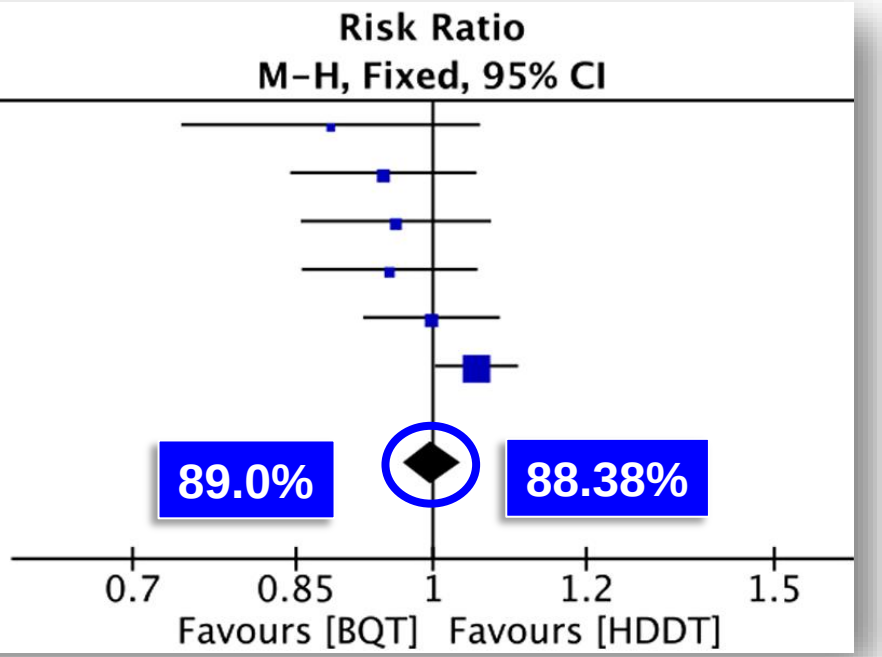
Zhikun Yin[1,2], Ji Li[2], Weifeng Huang[2], Xiaoyi Lei[1,2], Dong Xu[2], Guihua Xu[2], Hua Li[2], Jinyan Zhang[1,2]

[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, China*

Eficacia PP

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
S. Miehlke 2003	31	38	35	38	5.1%	0.89 [0.74, 1.06]	2003
JL Hu 2017	139	171	75	87	14.5%	0.94 [0.84, 1.05]	2017
F. Sapmaz 2017	79	93	79	89	11.8%	0.96 [0.85, 1.07]	2017
CP Gao 2018	58	65	62	66	9.0%	0.95 [0.86, 1.05]	2018
J Yang 2019	102	112	104	114	15.0%	1.00 [0.92, 1.08]	2019
ZQ Song 2020	329	356	301	343	44.7%	1.05 [1.00, 1.11]	2020
Total (95% CI)		**835**		**737**	**100.0%**	**1.00 [0.97, 1.04]**	
Total events	738		656				

Heterogeneity: $Chi^2 = 8.60$, $df = 5$ ($P = 0.13$); $I^2 = 42\%$
Test for overall effect: $Z = 0.01$ ($P = 0.99$)



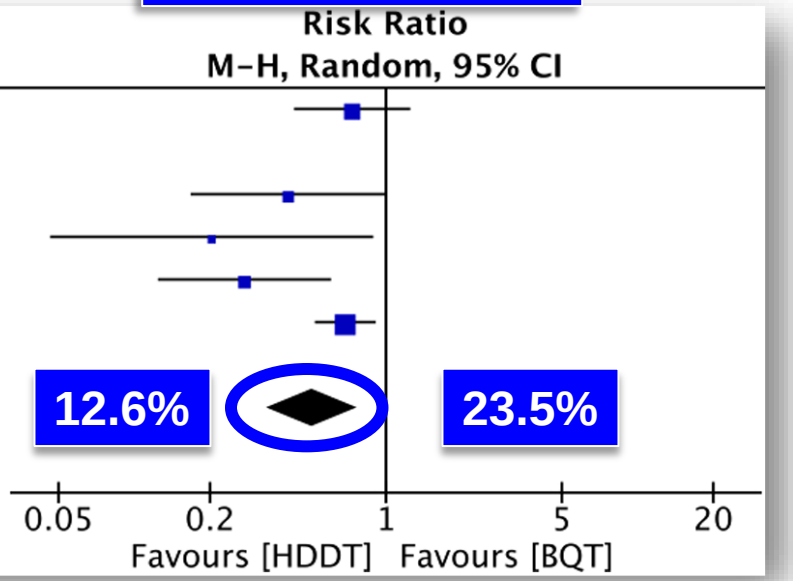
Yin Z, Turk J Gastroenterol 2022; 33:454-62

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)

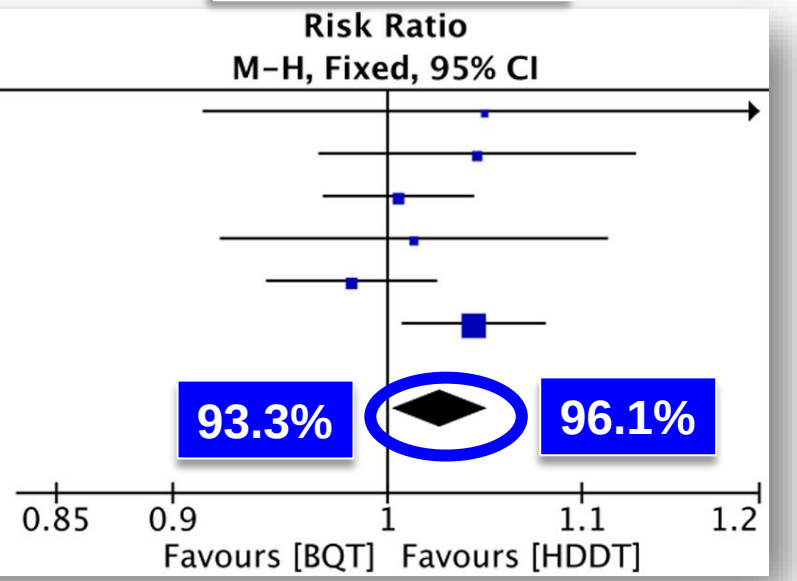


Cumplimiento

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

ORIGINAL ARTICLE

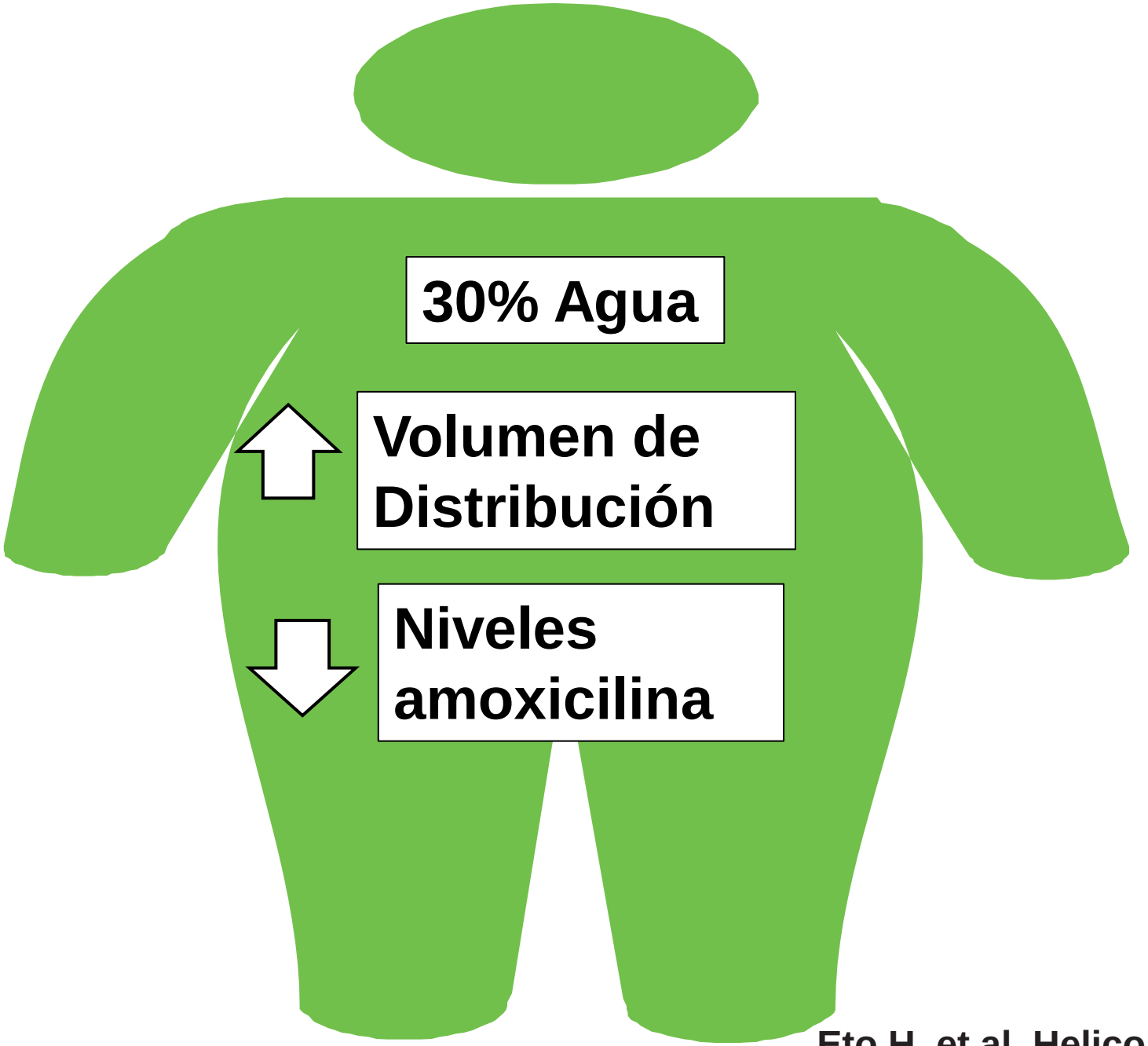
Helicobacter WILEY

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]

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

Ningún tratamiento cura siempre a todas las personas

No hay 100% de éxito

Tratamiento *H.pylori*

1ª línea

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

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

Cuádruple Furazolidona
Cuádruple Rifabutina

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

Terapias de salvamento o rescate

Tres tratamientos previos fallidos

Cuádruple
Furazolidona
14 días

IBP 2v/d +
FZLD 100 mg 3v/dia +
Amoxi 3-4 v/d o Tetrac +
Bismuto 2v/d
Eficacia >95%

Rifabutina
Triple o cuádruple
10 días-14d?

IBP 2 v/día +
Rifabutina 150 mg 2v/día +
Amoxi 3-4v/d: Eficacia 79%
Bismuto 2v/d 96.6%

Hong L, Eur J Gastroenterol Hepatol 2013;25:1134-40
Gisbert JP, Gastroenterol Hepato 2016;39:697-721
Ciccaglione AF, Helicobacter 2016;21:375-81
ShahSC, Gastroenterology 2021;160:1831-41

H. pylori
Erradicación

Probióticos

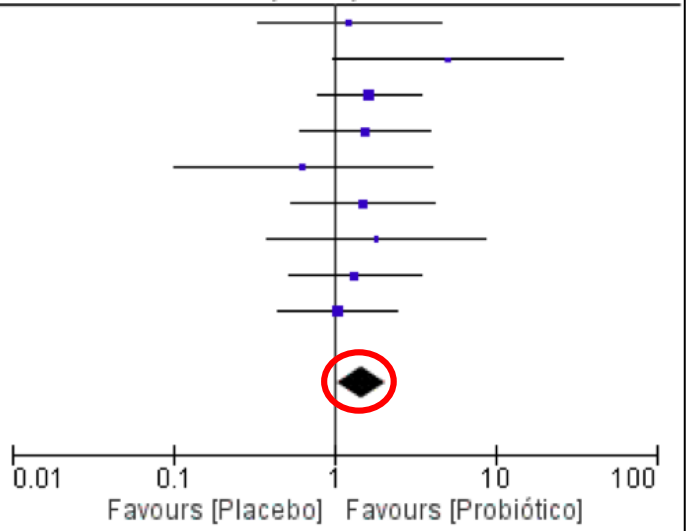
Presión de la Industria

Erradicación de *H. pylori* en terapia triple

Study or Subgroup	PROBIOTICO Events	Total	PLACEBO Events	Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Armuzzi, 2001	25	30	24	30	7.6%	1.25 [0.34, 4.64]
Chitapanaru, 2015	28	30	22	30	2.8%	5.09 [0.98, 26.43]
Cindoruk, 2007	44	62	37	62	20.5%	1.65 [0.78, 3.49]
Francavilla, 2014	33	44	29	44	13.8%	1.55 [0.62, 3.91]
McNicholl, 2018	31	34	32	34	5.4%	0.65 [0.10, 4.13]
Mohamed,2014	26	35	23	35	11.3%	1.51 [0.54, 4.22]
Myllyuoma, 2005	21	24	19	24	4.5%	1.84 [0.39, 8.77]
Navarro, 2013	45	55	40	52	14.2%	1.35 [0.53, 3.46]
Nista, 2004	39	54	37	52	19.9%	1.05 [0.45, 2.45]
Total (95% CI)		**368**		**363**	**100.0%**	**1.48 [1.05, 2.09]**
Total events	292		263			

Heterogeneity: Chi² = 3.82, df = 8 (P = 0.87); I² = 0%

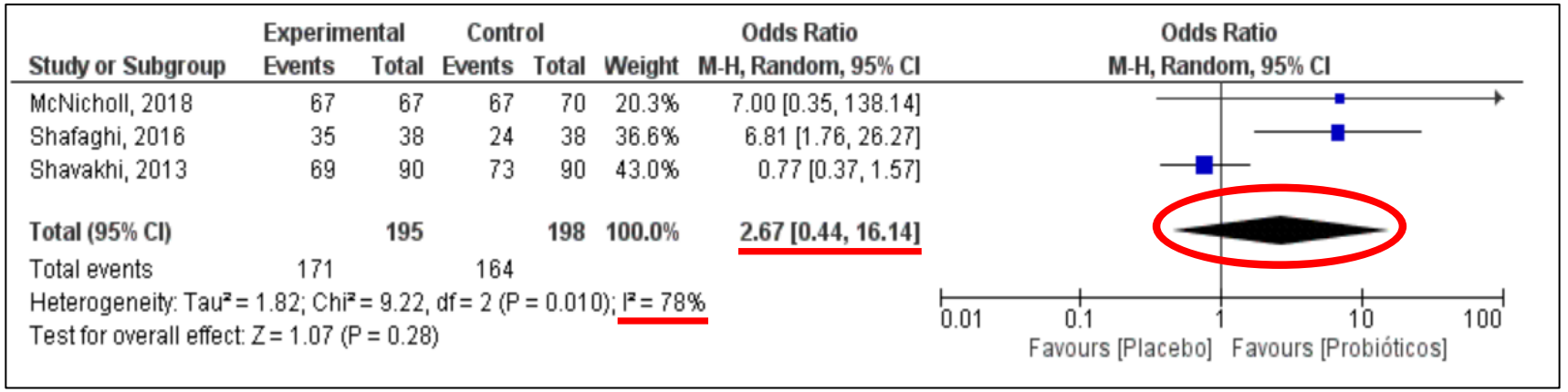
Test for overall effect: Z = 2.21 (P = 0.03)



Aumento de efectividad 8.3%
71.1%. Vs 79.4% NO logró 90-95%

Jaramillo G, Otero W, Estrada K
Rev Fac Med Univ Nacional 2022, On line Junio 20

Erradicación de *H. pylori* terapia cuádruple



Study or Subgroup	Experimental Events	Total	Control Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
McNicholl, 2018	67	67	67	70	20.3%	7.00 [0.35, 138.14]
Shafaghi, 2016	35	38	24	38	36.6%	6.81 [1.76, 26.27]
Shavakhi, 2013	69	90	73	90	43.0%	0.77 [0.37, 1.57]
Total (95% CI)		**195**		**198**	**100.0%**	**2.67 [0.44, 16.14]**
Total events	171		164			

Heterogeneity: Tau² = 1.82; Chi² = 9.22, df = 2 (P = 0.010); I² = 78%

Test for overall effect: Z = 1.07 (P = 0.28)

Jaramillo G, Otero W, Estrada K
Rev Fac Med Univ Nacional 2022, On line Junio 20

The Toronto Consensus for the Treatment of *Helicobacter pylori* Infection in Adults

2016

Carlo A. Fallone,[1] Naoki Chiba,[2,3] Sander Veldhuyzen van Zanten,[4] Lori Fischbach, Javier P. Gisbert,[6] Richard H. Hunt,[3,7] Nicola L. Jones,[8] Craig Render,[9] Grigorios I. Leontiadis,[3,7] Paul Moayyedi,[3,7] and John K. Marshall[3,7]

Management of *Helicobacter pylori* infection—the Maastricht V/Florence Consensus Report

2017

P Malfertheiner,[1] F Megraud,[2] C A O'Morain,[3] J P Gisbert,[4,5] E J Kuipers,[6] F Bazzoli,[8] A Gasbarrini,[9] J Atherton,[10] D Y Graham,[11] T Rokkas,[15] M Rugge,[16] M Selgrad,[17] on behalf of the Europ

ACG Clinical

2021

Javier P. Gisbert[1], Javier Alcedo[2], Javier Amador[3], Luis Bujanda[4], Xavier Calvet[5], Manuel Castro-Fernández[6], Luis Fernández-Salazar[7], Emili Gené[8], Ángel Lanas[9], Alfredo J. Lucendo[10], Javier Molina-Infante[11], Olga P. Nyssen[1], A. Pérez-Aisa[12] e Ignasi Puig[13]

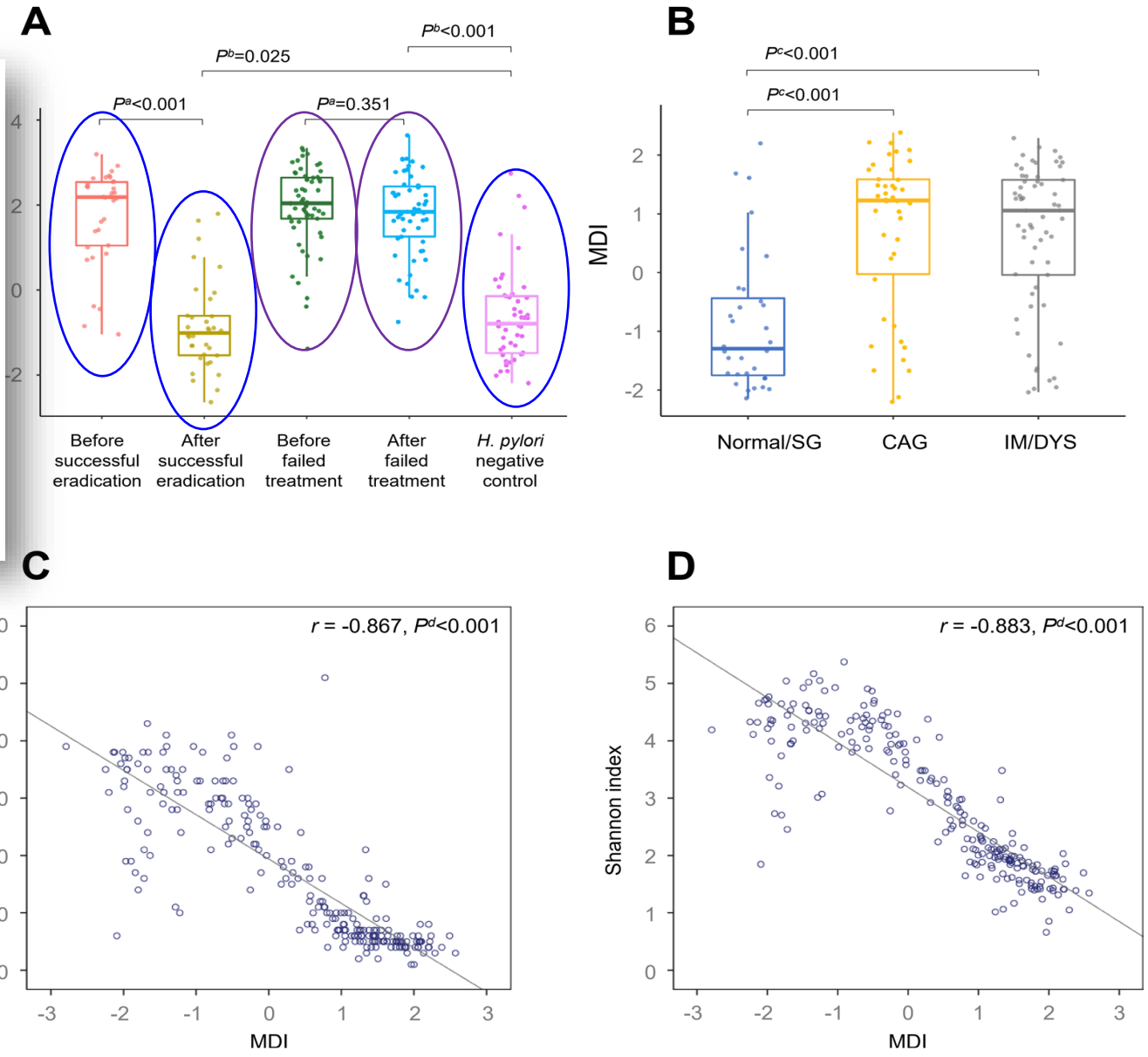
Ninguna guìa los Recomienda por ahora

Cura de *H.pylori* y microbiota

ORIGINAL RESEARCH

Effect of *Helicobacter pylori* on gastrointestinal microbiota: a population-based study in Linqu, a high-risk area of gastric cancer

Yang Guo,[1] Yang Zhang ,[1,2] Markus Gerhard,[2,3,4] Juan-Juan Gao,[1] Raquel Mejias-Luque,[2,3,4] Lian Zhang,[1] Michael Vieth,[2,5] Jun-Ling Ma,[1] Monther Bajbouj,[2,6] Stepan Suchanek,[2,7] Wei-Dong Liu,[8] Kurt Ulm,[2,9] Michael Quante ,[2,6] Zhe-Xuan Li,[1,2] Tong Zhou,[1] Roland Schmid,[2,6] Meinhard Classen,[2,6] Wen-Qing Li,[1,2] Wei-Cheng You,[1,2] Kai-Feng Pan[1,2]



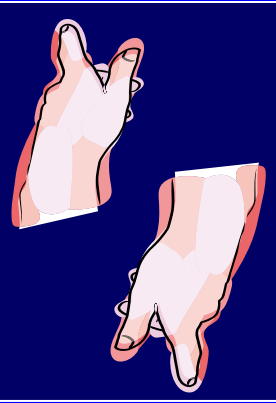
Guo Y, et al. Gut 2020;69:1598–1607

Verificación de la erradicación

Verificación de la erradicación

>4 semanas métodos infección activa
Test respiratorio con urea (UBT) C^{13} C^{14}
Antígenos fecales (Acs Monoclonales)

EVDA NO!

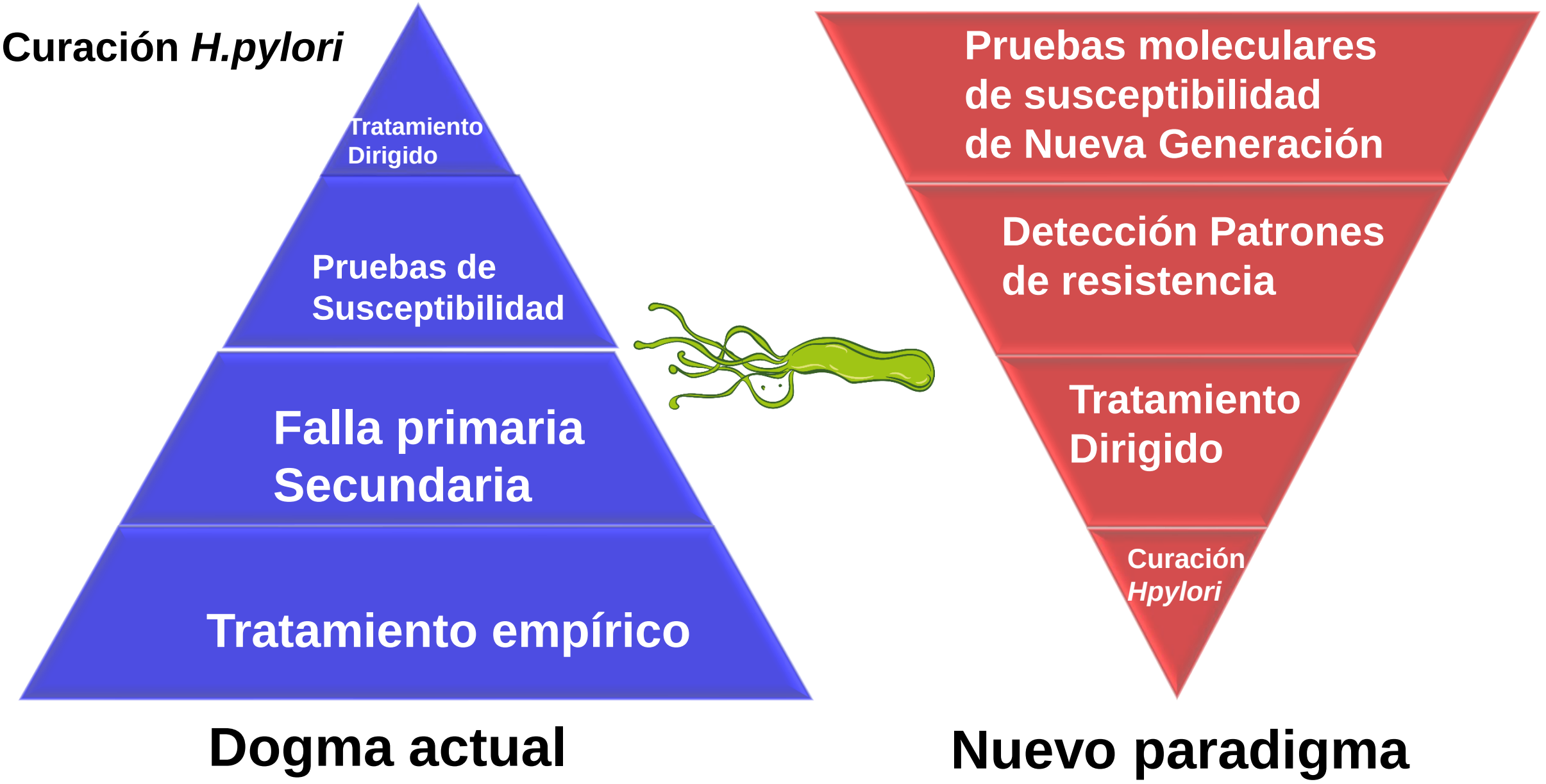


Solo si necesita
EVDA de control
***H.pylori* histologìa**

Serología
No identifica
Infección activa

Chey WD, Am J Gastroenterol 2017;112:212-39
Malfertheiner P, Gut 2017;66:6-30
Gisbert JP, Gastroenterol Hepatol 2016;39:697-721
Otero W, 2020, Perú en prensa

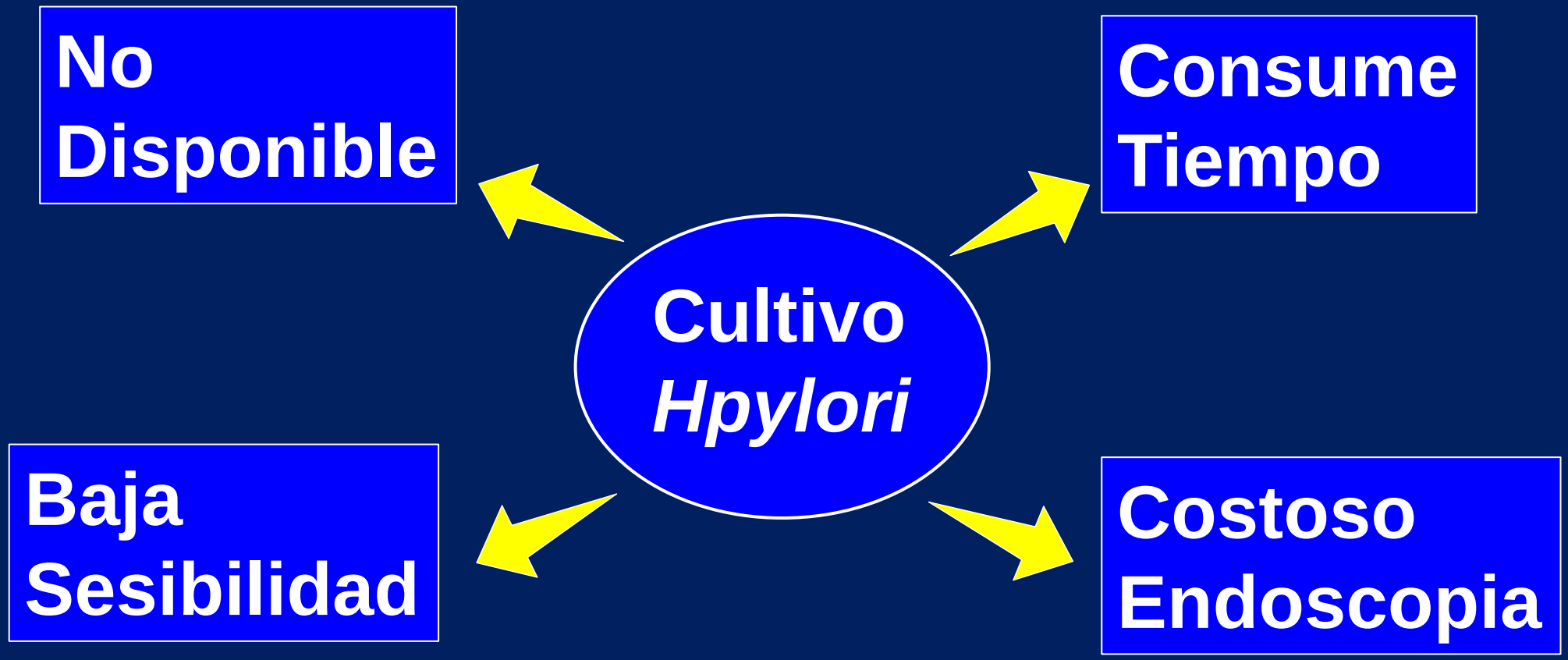
Curación *H.pylori*



Dogma actual

Nuevo paradigma

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



Nyssen OP, Front Microbiol 2022;13:A913436

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

Table 1. Comparison of NGS Analysis of Antibiotic Resistant Mutations in 6 Antibiotics Between Stool and Fresh Gastric Tissue Samples

		Resistance-associated mutations by NGS[a]		
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
Rifabutin	*rpoB*	0	0	1.00

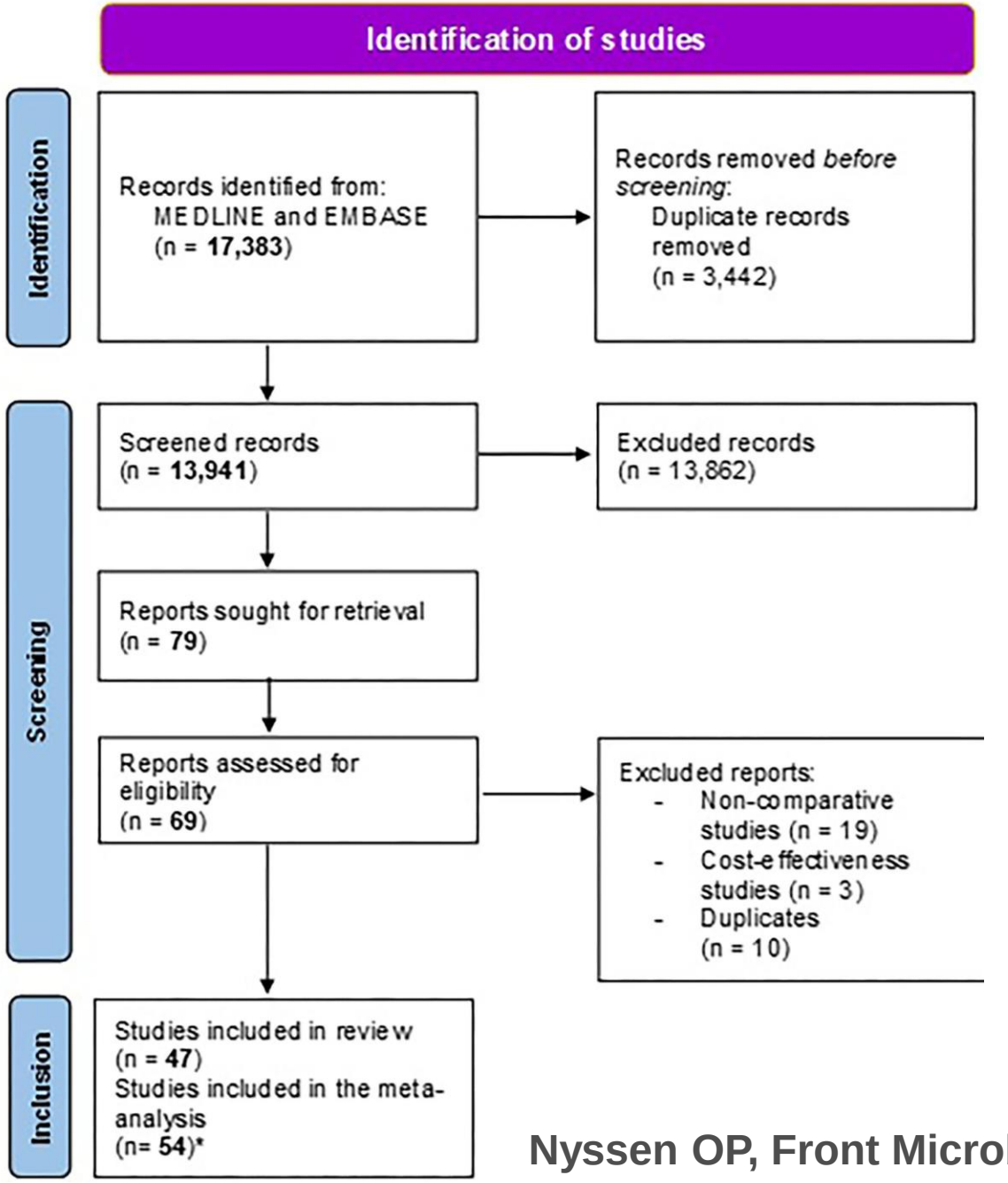
Moss SF, Gastroenterology 2022;162:2095–2097

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

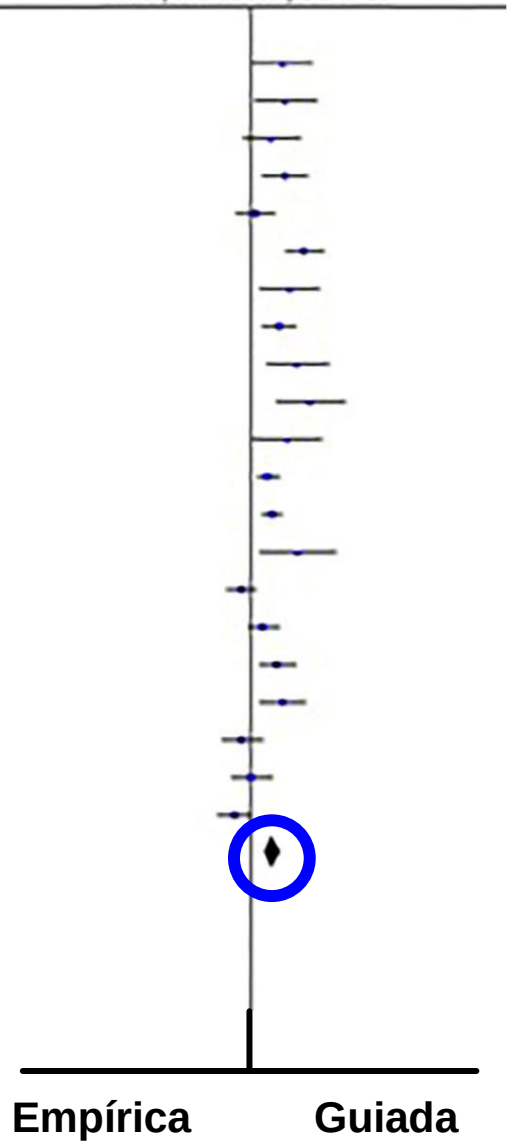


Nyssen OP, Front Microbiol 2022;13: Article 913436

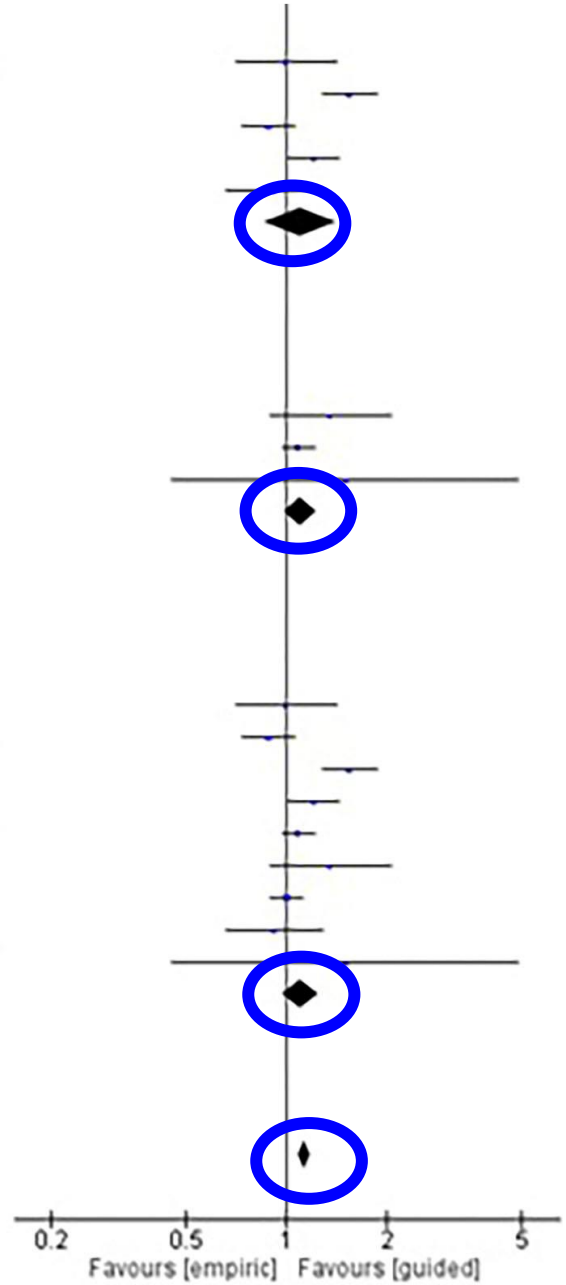
Study or Subgroup	Susceptibility-guided Events	Total	Empiric regimen Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.5.1 First-line							
Toracchio 2000	48	53	42	56	2.6%	1.21 [1.01, 1.44]	2000
Romano 2000	38	40	31	40	2.5%	1.23 [1.02, 1.47]	2000
Neri 2003	88	116	78	116	2.8%	1.13 [0.96, 1.33]	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%	0.91 [0.83, 1.00]	2021
Subtotal (95% CI)		**2767**		**3052**	**67.1%**	**1.14 [1.08, 1.20]**	
Total events	2413		2375				

Heterogeneity: Tau² = 0.01; Chi² = 80.40, df = 20 (P < 0.00001); I² = 75%

Test for overall effect: Z = 5.03 (P < 0.00001)



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		1[illegible]				
Heterogeneity: Tau² = 0.00; Chi² = 1.30, df = 2 (P = 0.[illegible]2); I² = 0%							
Test for overall effect: Z = 1.74 (P = 0.08)							
1.5.4 All rescue lines (>1)							
Avidan 2001	5	5	5	5	1.2%	1.00 [0.71, 1.41]	2001
Miwa 2003	31	38	36	39	2.6%	0.88 [0.74, 1.05]	2003
Lamouliatte 2003	84	113	83	172	2.4%	1.54 [1.28, 1.86]	2003
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)							
Total (95% CI)		**3873**		**4228**	**100.0%**	**1.13 [1.08, 1.18]**	
Total events	3289		3167				
Heterogeneity: Tau² = 0.01; Chi² = 129.47, df = 37 (P < 0.00001); I² = 71%							
Test for overall effect: Z = 5.48 (P < 0.00001)							
Test for subgroup differences: Chi² = 0.48, df = 3 (P = 0.92), I² = 0%							



Mensajes para la casa

Tratamiento por 14 dìas
IBP mas 3 antibiòticos excepto dual
No hay esquema universal
Cada país estudia sus esquemas
Verificar erradicaciòn UBT antígenos fecales
Probióticos todavía faltan estudios en el 2022
Investigar tratamientos basados susceptibilidad

Un hombre sabio dijo una vez……

“El único *Helicobacter* bueno Es el que está muerto”

Muchas gracias !