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P0225

FIRST-LINE *H. PYLORI* ERADICATION THERAPY IN EUROPE: RESULTS FROM 24,882 CASES OF THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: The best approach for *Helicobacter pylori* management re-mains unclear. An audit process is essential to ensure clinical practice is aligned with best standards of care.

Aims & Methods: International multicentre prospective non-interventional registry starting in 2013 aimed to evaluate the decisions and outcomes in *H. pylori* management by European gastroenterologists. Patients were registered in an e-CRF by AEG-REDCap up to April 2020. *Variables included*: demographics, previous eradication attempts, prescribed treatment, ad-verse events, and outcomes. Modified intention-to-treat (mITT) and per-protocol (PP) analyses were performed and data were subject to quality review to ensure information reliability.

Results: In total 36,319 patients from 29 European countries were evaluat-ed and 24,882 (70%) first-line empirical H. pylori treatments were included for analysis. Triple therapy with amoxicillin and clarithromycin was most commonly prescribed (40%), followed by concomitant treatment (19%) and bismuth quadruple (Pylera®) (10%) achieving 83%, 91% and 95% mITT eradication rate, respectively.

Over 90% effectiveness was obtained only with 10 and 14-day bismuth quadruple or 14-day concomitant treatment (Table). Longer treatment duration, higher acid inhibition and compliance were associated with higher eradication rates.

Conclusion: Management of *H. pylori* infection by European gastroenter-ologists is heterogeneous. Only quadruple therapies lasting at least ten days are able to achieve over 90% eradication rates.

Disclosure: Dr. Nyssen has received research funding from Mayoly, Allergan. Dr. Gisbert has served as a speaker, a consultant and advisory mem-ber for or has received research funding from Mayoly, Allergan, Diasorin.

First-line treatment	Length (days)	mITT, N (%)	(95% CI)	PP, N (%)	(95% CI)
Triple-C+A	7 / 10 / 14	1,903 (83) / 3,057 (83) / 72,264 (89)	(81-84) / (82-85) / (88-90)	1,886 (83) / 3,015 (84) / 2,238 (89)	(81-85) / (82-85) / (88-91)
Triple-A+M	7 / 10	118 (81) / 163 (85)	(74-89) / (79-90)	117 (81) / 161(85)	(74-89) / (79-91)
Triple-C+M	7 / 10 / 14	724 (84) / 114 (65) / 80 (70)	(82-87) / (56-74) / (59-81)	721 (85) / 112 (66) / 80 (70)	(82-87) / (57-75) / (59-81)
Triple-A+L	7 / 10	178 (79) / 142 (85)	(72-85) / (79-91)	176 (78) / 136(86)	(72-85) / (80-92)
Sequential-C+A+M/T	10	596 (83)	(80-86)	556(85)	(82-88)
Quadruple-C+A+M/T	10 / 14	2,378 (88) / 2,228 (93)	(87-90) / (92-94)	2,316 (89) / 2,180 (93)	(88-90) / (92-94)
Quadruple-C+A+B	10 / 14	394 (86) / 1,194 (91)	(82-89) / (89-93)	390 (86) / 1,178 (91)	(83-90) / (90-93)
Quadruple-M+Tc+B	10	130 (94)	(89-98)	130(94)	(89-98)
Pylera® (M+Tc+B)	10	2,267 (95)	(94-96)	2,223(95.5)	(95-96)

[Table 1 Effectiveness (by modified intention-to-treat and per-protocol analyses) of first-line empirical treatments in Europe .]

mITT: modified intention-to-treat; PP: per-protocol; A - amoxicillin, C - clarithromycin; M - metronidazole; T - tinidazole; L - levofloxacin B; - bismuth salts; Tc - tetracycline.

P0226

EUROPEAN REGISTRY ON H. PYLORI MANAGEMENT (HP-EUREG): ANALYSIS OF EMPIRICAL SECOND-LINE TREATMENTS IN EUROPE

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Introduction: Even with the currently most effective treatment regimens, approximately 10-20% of patients will fail to obtain *H. pylori* eradication. **Aims & Methods:** To evaluate the effectiveness and safety of second-line empirical treatments in Europe.

A systematic prospective registry of the clinical practice of European gas-troenterologists regarding *H. pylori* infection and treatment was estab-lished. All infected adult patients were systematically registered at AEG-REDCap e-CRF from June 2013 to April 2020. *Variables included*: Patient's demographics, previous eradication attempts, prescribed treatment, ad-verse events, and outcomes. Modified intention-to-treat (mITT) and per-protocol (PP) analyses were performed and data were subject to quality review.

Results: Overall, 5,516 patients from 29 countries were given a second-line therapy; from those, 4,862 (88%) were treated empirically and were therefore included for analysis. Mean age was of 49 (±15) years, 64% were women and 5% had penicillin allergy. Most frequent treatment indications were dyspepsia (54%) and gastroduodenal ulcer (17%). Endoscopy was performed in 48% of the cases and ^{13}C-UBT was used in 45% to diagnose the infection. Overall effectiveness was 83.7% (by mITT) and 84% (by PP). Over 97% of patients were compliant. AEs were reported in 28% of the cases and tolerance was similar among therapies. Most frequent second-line prescriptions and effectiveness per antibiotic combination is shown in table 1. After failure of first-line clarithromycin-containing treatment, optimal eradication (>90%) was obtained with moxifloxacin-containing triple therapy, the single capsule (Pylera®) or quadruple therapy with le-vofloxacin and bismuth. In patients receiving triple regimens containing levofloxacin or the standard bismuth quadruple regimen, cure rates were optimized with 14-day regimens using high doses of proton pump inhibi-tors (PPIs). However, Pylera® or quadruple therapy with levofloxacin and bismuth achieved reliable eradication rates regardless of the PPI dose, duration of therapy, or previous first-line treatment regimen.

Conclusion: Empirical second-line triple therapies generally provided low eradication rates unless they included 14 days of levofloxacin or moxiflox-acin. However, high effectiveness was obtained with second-line bismuth-containing quadruple therapies.

Treatment	N	% Use	mITT, N (%)	(95% CI)	PP, N (%)	(95% CI)
Triple-A+L	1,522	33.2	1,341 (81)	(79-83)	1,320 (81)	(79-83)
Pylera (single capsule	692	15.1	622 (90)	(87-92)	607 (90)	(88-93)
Quadruple-A+L+B	529	11.5	478 (89)	(86-92)	462 (89)	(86-92)
Triple-C+A	477	10.4	231 (81)	(76-86)	226 (81)	(76-86)
Quadruple-M+Tc+B	204	4.4	183 (83)	(77-89)	177 (84)	(78-90)
Quadruple-C+A+M	179	3.9	169 (85)	(79-90)	167 (84)	(79-90)
Triple-A+Mx	143	3.1	135 (91)	(86-96)	135 (91)	(86-96)
Triple-A+M	93	2.0	76 (60.5)	(49-72)	76 (60.5)	(49-72)
Total*	4,862	100%	3,966 (84)	(82-85)	3,966 (84)	(81-83)

[Table 1. Frequency of second-line empirical treatment prescriptions and effectiveness by modified intention-to-treat and per-protocol analyses]

mITT - modified intention-to-treat, PP - per-protocol, 95%CI - 95% confidence interval, C - clarithromycin, M - metronidazole, T - tinidazole, A - amoxicillin, L - levofloxacin, B - bismuth salts, Tc - tetracycline, Mx - moxifloxacin, N - Total of patients receiving an empirical treatment, Total* - accounted also 1,023 (21%) second-line empirical treatments with less than 100 patients treated in each category, that are not reported in the table.

Disclosure: Dr. Nyssen has received research funding from Mayoly, Aller-gan. Dr. Gisbert has served as a speaker, a consultant and advisory mem-ber for or has received research funding from Mayoly, Allergan, Diasorin.

P0227

BISMUTH QUADRUPLE THREE-IN-ONE SINGLE CAPSULE: 3 OR 4 TIMES DAILY? SUB-ANALYSIS OF THE SPANISH DATA OF THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Bismuth quadruple with the single capsule Pylera® (PPI, bis-muth, tetracycline and metronidazole) includes the intake of 3 capsules four times a day (3c/6h), according to the technical sheet. This scheme may not be suitable for Spanish eating habits; therefore, some physicians prescribe the treatment in the form of 4 capsules three times a day (4c/8h). **Aims & Methods:** To assess the effectiveness and safety of quadruple single capsule bismuth therapy (Pylera®) administered three times a day (4c/8h) in the European Registry on the management of *Helicobacter py-lori* (Hp-EuReg).

Methods: Systematic prospective registry of the clinical practice of Euro-pean gastroenterologists (27 countries) on the management of *H. pylori* infection and its treatment. All infected adult patients were systematically registered at AEG-REDCap e-CRF from June 2013 to June 2019. Extraction and analysis of all cases treated with Pylera® were subject to quality con-trol. Effectiveness was provided for both the modified intention-to-treat and per-protocol sets.

Results: Of the 2,326 Spanish patients treated with Pylera® in the Hp-EuReg, 1,140 (74%) were treated with 3c/6h and 403 (17%) with the 4c/8h scheme. The average age was 48 years, 63% were women, and 11% had a peptic ulcer. Most of the cases (72%) were naïve to treatment. The dose of PPI did not influence eradication rates. Both treatment schedules showed equivalent compliance, adverse events, and eradication rates (table 1). One patient suffered a serious adverse event (*C. difficile* infection), in the group 3c/6h.

Conclusion: The prescription of quadruple therapy with single capsule bismuth (Pylera®) given as four capsules three times a day seems to have the same compliance, tolerance and effectiveness as the scheme included in the data sheet (three capsules four times a day).

			Modified intention-to-treat (%)			Per-protocol (%)		
Pylera®	Compliance (%)	AEs (%)	Pylera®	Overall	91	Pylera®	Overall	93
4c/8h	97	22	4c/8h	1st line	95	4c/8h	1st line	96
				2nd line	92		2nd line	94
				3rd line	86		3rd line	92
Pylera®	Compliance (%)	AEs (%)	Pylera®	Overall	86	Pylera®	Overall	90
3c/6h	98	24	3c/6h	1st line	93	3c/6h	1st line	95
				2nd line	83		2nd line	87
				3rd line	84		3rd line	86

[Table 1. Effectiveness, compliance and safety of treatment with Pylera® in first-, second-, and third-line.]

AEs: adverse events. 4c/8h: four capsules three times a day (every 8 hours); 3c/6h: three capsules four times a day (every 6 hours).

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P0228

EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG): EXPERIENCE WITH SINGLE CAPSULE BISMUTH QUADRUPLE THERAPY IN 3,439 PATIENTS

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Introduction: There has been a resurgence in the use of bismuth-quadru-ple therapy (PPI, bismuth, tetracycline and metronidazole) in Europe with the commercialization of a single-capsule formulation (Pylera®), but the experience with this regimen is still limited.

Aims & Methods: To evaluate the effectiveness and safety of Pylera® in the European Registry on *Helicobacter pylori* management (Hp-EuReg). International multicenter prospective non-interventional registry aimed to evaluate the decisions and outcomes of *H. pylori* management by European gastroenterologists. All infected adult patients treated with Pylera® according to data sheet (3 capsules/6h) were systematically registered at AEG-REDCap e-CRF until December 2019. Variables included: Patient's demographics, previous eradication attempts, prescribed treatment, adverse events, and outcomes. Modified intention-to-treat (mITT) analyses were performed and data were subject to quality review.

Results: Of the 34,460 patients in the Hp-EuReg, 2,100 (6.1%) were prescribed single-capsule bismuth-quadruple therapy (10 days, 3 capsules q.i.d.). The majority of these patients were naïve (63%), with an average age of 50 years, 64% female and 16% with peptic ulcer. Pylera® achieved a high eradication rate based on the mITT (91.9%). Effectiveness was higher when using Pylera® as a first-line treatment (94.6%) but it had also high ef-fectiveness as a rescue therapy, both in second-line (89.3%) or subsequent lines of therapy (3rd-6th line: 91.9%) (Table1). Compliance was the fac-tor most closely associated with the effectiveness of treatment. Adverse events (AEs) were generally mild-to-moderate and transient, only 3% of patients reporting a severe AE, leading to discontinuation of treatment in 1.7% of patients.

Conclusion: The 10-day treatment with single-capsule bismuth-quadruple therapy (Pylera®) achieves *H. pylori* eradication in approximately 90% of patients by mITT in real-world clinical practice, both as a first-line and rescue treatment, with a favourable safety profile.

	Use, N (%)	mITT, N (%)	95% CI	PP, N (%)	95% CI
Overall	2,100 (6*)	1,777 (92)	(91-93)	1,761 (92-94)	(92-94)
Naïve	1.335(63)	1,166 (95)	(93-96)	1,158 (94-97)	(94-97)
2nd line	465 (22)	375 (89)	(86-92)	370 (87-93)	(87-93)
3rd line	212 (10)	174 (89)	(84-93)	177 (83-93)	(83-93)

[Table 1. Pylera® effectiveness (by modified intention-to-treat) in first-, and consecutive rescue treatment lines.]

*Of the total of treatments included in the Hp-EuReg up to December 2019 (i.e. N= 34,460); mITT: modified intention-to-treat; PP: per-protocol, N: total number of patients analysed.

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P0229

SAFETY OF THE TREATMENT OF *H. PYLORI* INFECTION: EXPERIENCE FROM THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG) ON 22,000 PATIENTS

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Introduction: The safety of *Helicobacter pylori* eradication treatments and to what extent adverse events (AEs) may influence therapeutic compli-ance is unknown.

Aims & Methods: To assess the frequency, type, intensity and duration of AEs, and their impact on compliance, for the most frequently used treat-ments in the European Registry on *Helicobacter pylori* management (Hp-EuReg). Systematic prospective non-interventional registry of the clinical practice of European gastroenterologists (27 countries, 300 investigators) on the management of *H. pylori* infection in routine clinical practice, pro-moted by the EHMSG. All prescribed eradication treatments and their cor-responding safety profile were recorded in an e-CRF in AEG-REDCap until June 2019. AEs were classified depending on the intensity of symptoms as mild/moderate/severe, and as serious AEs (death, hospitalisation, disabil-ity, congenial anomaly and/or requires intervention to prevent permanent damage). All data were subject to quality control.

Results: The different treatments prescribed to a total of 22,492 naïve and non-naïve patients caused at least one AE in 22% of the cases (Table 1), the classic bismuth-based quadruple therapy being the worst tolerated (37% of AEs). Taste disturbance (7%), diarrhoea (7%), nausea (6%) and ab-dominal pain (3%) were the most frequent AEs. The majority of AEs were mild (57%), 6% were severe, and only 0.08% were serious, with an average duration of 7 days. The treatment compliance rate was 97%. Only 1.3% of the patients discontinued treatment due to AEs.

Conclusion: *H. pylori* eradication treatment frequently induces AEs, al-though they are usually mild and of limited duration. Its appearance does not interfere significantly with the compliance of treatment.

Adverse events	Yes	%	95%CI
Triple-C+A	1,037	15	(14-16)
Quadruple-C+A+M	926	25	(23-26)
Pylera®	642	28	(26-30)
Quadruple -C+A+B	627	34	(34-37)
Triple-A+L	339	21	(19-23)
Triple-C+M	184	20	(18-23)
Quadruple -A+L+B	180	32	(28-36)
Quadruple -M+Tc+B	84	37	(30-43)
TOTAL	4,298	22	(22-23)

[Table 1. Safety in naïve and non-naïve patients]

CI- confidence interval; A - amoxicillin, C - clarithromycin; M - metronidazole; L - levofloxacin; B; - bismuth; Tc - tetracycline. **Disclosure:** Dr. Nyssen has received research funding from Mayoly, Aller-gan. Dr. Gisbert has served as a speaker, a consultant and advisory mem-ber for or has received research funding from Mayoly, Allergan, Diasorin.

P0230

VONOPRAZAN-AMOXICILLIN DUAL THERAPY FOR H. PYLORI INFECTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: *H. pylori* infection is associated with several gastrointestinal and extra-gastrointestinal conditions and is the leading cause of gastric cancer. Its eradication is therefore performed worldwide to improve or prevent these conditions[1]. Unfortunately, the eradication rate of the currently available regimens is declining, mostly owing to the increase its resistance to antimicrobials[1,2]. Several studies have shown the importance of profound and long-lasting acid suppression for *H. pylori* eradication[3]. Vonoprazan, a novel potassium-competitive acid blocker, provides a stronger and longer-lasting antisecretory effect than proton pump inhibitors. A dual therapy, combining vonoprazan with amoxicillin, could be a simple regimen for *H. pylori* infection and, because it contains a single antibiotic, could allow antimicrobial stewardship compared with triple or quadruple regimens. In addition, since - even after multiple treatments - *H. pylori* resistance to amoxicillin is very low[2], this dual regimen has the potential to overcome the ever-lower eradication rate of regimens employing clarithromycin, imidazole or/and quinolone antimicrobial agents, toward which resistance is constantly increasing[2].

Aims & Methods: Performing a systematic review and meta-analysis to evaluate the effectiveness and the safety (adverse events - AEs) of vonoprazan-amoxicillin dual therapy for *H. pylori* eradication. MEDLINE, EMBASE, and Cochrane Central Register of Controlled Trials were searched from inception to April 2020. Furthermore, abstract books of major European, American and Asian gastroenterological meetings were also examined. Data for primary and secondary outcomes were pooled using a random effects model.

Results: The search strategy identified 4 studies, all performed in Asia: 2 studies where dual therapy lasted 7 days, and 2 studies where dual therapy lasted 14 days. According to the ITT analysis, the pooled eradication rate was 85.6% (95%CI: 74.8 to 94.0), with evidence of significant

heterogeneity (Cochrane Q: p = 0.036; I_2 = 64.8%). According to the PP analysis, the pooled eradication rate was 89.1% (95%CI: 76.9 to 97.5), with evidence of significant heterogeneity (Cochrane Q: p = 0.008; I_2 = 74.7%). One study showed an outlier eradication rate, and after its removal, the pooled eradication rate was 88.6% (95%CI: 82.4 to 93.8 - Cochrane Q: p = 0.264; I_2 = 24.9%) and 92.8% (95%CI: 85.0 to 98.1 - Cochrane Q: p = 0.128; I_2 = 51.3%), according to ITT and PP analysis, respectively. The eradication rate in patients harboring strains resistant to clarithromycin was 95.4% (95% CI: 86.6 to 100). Finally, the overall AEs were 26.5% (95% CI: 20.0 to 33.5), without any severe event.

Conclusion: Vonoprazan-amoxicillin dual therapy provided clinically rel-evant *H. pylori* eradication rates, even in patients harboring strains resis-tant to clarithromycin. Further European and North American studies are needed to confirm these results.

References: 1. Fallone CA, Moss SF, Malfertheiner P. Reconciliation of Recent Helicobacter pylori Treatment Guidelines in a Time of Increasing Resistance to Antibiotics. Gastroenterology 2019;157: 44-53. 2. Gatta L, Scarpignato C, Fiorini G, et al. Impact of primary antibiotic resistance on the effectiveness of sequential therapy for Helicobacter pylori infection: lessons from a 5-year study on a large number of strains. Alimentary Phar-macology & Therapeutics 2018; 47: 1261-9. 3. Scarpignato C, Gatta L, Zullo A, et al. Effective and safe proton pump inhibitor therapy in acid-related diseases - A position paper addressing benefits and potential harms of acid suppression. BMC Med 2016; 14: 179.

Disclosure: Nothing to disclose

P0232

EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG): CLINICAL PHENOTYPES THROUGH *MACHINE LEARNING* OF FIRST-LINE TREATED PATIENTS IN SPAIN DURING THE PERIOD 2013-2018

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Introduction: The segmentation of patients in homogeneous groups, ac-cording to their clinical variables and treatments, could help to improve the effectiveness of current eradication therapy.

Aims & Methods: 1) To group patients from the European Registry on *Heli-cobacter. pylori* management (Hp-EuReg) according to their demographic and clinical characteristics as well as to the different treatment types by means of a multivariate categorical analysis and, subsequently, a cluster decomposition. 2) To evaluate the treatments' effectiveness in the result-ing patients' clusters.

Systematic prospective registry of the routine clinical practice of Europe-an gastroenterologists on the management of *H. pylori* infection. First-line empirical treatments were included. The following categorical variables were used: sex, ethnicity, diagnosis, symptoms, therapeutic indication, treatment scheme, duration of treatment, proton-pump inhibitor (PPI) dose, compliance, adverse events, and region of the prescribing center.

Results: In total, 8,322 patients from Spanish centers were analysed from June 2013 to December 2018. Table 1 shows the upward average effective-ness trend of treatments, ranging from 78.4% in 2013 to 92.2% in 2018. The lowest effectiveness, for clusters with more than 100 patients, was ob-tained in cluster 1 in 2015, with an eradication rate of 82.8%. This cluster was composed by two first-line treatments: triple therapy with PPI-clar-ithromycin-amoxicillin and concomitant therapy with PPI-clarithromycin-amoxicillin-metronidazole/tinidazole, lasting both 10 days in the vast majority of cases. Pylera® treatment administered together with high PPI doses during 10 days obtained over 95% effectiveness (cluster 3, in 2018), uniformly distributed among Malaga, Valencia, Ciudad Real, Sevilla, Ma-drid, and Valladolid' cities. Concomitant therapy with high PPI dose given for 14 days achieved an effectiveness of 90.7% during the 2018 year (94% of patients in cluster 1), distributed mainly between Malaga, Ciudad Real and Madrid' cities.

Conclusion: The cluster analysis allows both identifying homogeneous groups of patients as well as assessing the effectiveness of the different first-line treatments evaluated.

		Effectiveness % (number of patients) per cluster				
Year	Number of clusters	1	2	3	4	5
2013	3	89.6 (280)	83.2 (619)	80.0 (80)		
2014	3	88.2 (1685)	69.6 (46)	83.3 (6)		
2015	5	91.6 (83)	89.4 (839)	82.9 (615)	70.8 (24)	88.2 (17)
2016	3	94.7 (359)	86.1 (853)	92.6 (296)		
2017	3	94.3 (630)	90.6 (636)	91.6 (153)		
2018	3	91.8 (122)	90.7 (161)	96.5 (338)		

[Table 1. Trends in the overall effectiveness (by modified intention-to-treat, per cluster) between 2013 and 2018 in Spain]

Simple underlining highlights the lowest effectiveness for groups of more than 100 patients and double underlining the highest effectiveness. **Disclosure:** Dr. Nyssen has received research funding from Mayoly, Aller-gan. Dr. Gisbert has served as a speaker, a consultant and advisory mem-ber for or has received research funding from Mayoly, Allergan, Diasorin.

P0233

REAL-WORLD COMPARATIVE EFFECTS OF THREE-IN-ONE SINGLE CAPSULE BISMUTH QUADRUPLE THERAPY VS. NON-BISMUTH QUADRUPLE CONCOMITANT THERAPY: INTERIM ANALYSIS OF THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: RCTs have strict selection criteria that render results not fully transferable to the clinical practice.

Aims & Methods: To assess the comparative effects of first-line bismuth-single-capsule (PPI-bismuth-tetracycline-metronidazole) vs. non-bismuth quadruple concomitant therapy (PPI-amoxicillin-clarithromycin-nitro-imidazole). The European Registry on *H. pylori* management (Hp-EuReg) data from Spain, Italy and Portugal was used to emulate a target trial with prospective observational data, comparing the relative effectiveness (modified intention-to-treat, mITT; and per-protocol, PP) and safety (adverse events, AEs) of first-line bismuth-single-capsule [10 days, 3 PPI dosages] and concomitant therapy [10/14 days; 3 PPI dosages], rendering 9 prescription strategies. Regression analysis controlling for confounders was used to estimate the relative effects of each strategy.

Results: Overall, 2,340 individuals were included. Compared to 10-day concomitant therapy at low PPI doses (n=484), all bismuth-single-capsule combinations presented an eradication incremental benefit by mITT ranging from 7.3% (95%CI:1.1-13%;p=0.024) with low dose PPI to 12.1% (95%CI:5.1-19%;p< 0.001) with standard PPI dose. High PPI dosages in the concomitant therapy resulted in an eradication incremental benefit by mITT ranging from 7.7% (95%CI:2.5-12.8;p=0.003) to 8.8% (95%CI:1.1-16.5;p=0.025) when administered for 14 and 10 days, respectively (table 1). No differences were found with respect to AEs or severe AEs in any of the assessed strategies.

Conclusion: Single-capsule bismuth quadruple therapy and non-bismuth quadruple concomitant therapy appear to have similar risk-benefit ratios when prescribed with high PPI doses.

Strategies	mITT absolute risk difference (95% CI)	*P* value	PP absolute risk difference (95% CI)	*P* value
Bismuth-single-capsule, 10 days, low dose PPI	7.4 (1.8-13.1)	0.010	8.9 (3.4-13.5)	0.002
Bismuth-single-capsule, 10 days, standard dose PPI	12.1 (5.1-19.0)	<0.001	12.6 (5.8-9.4)	<0.001
Bismuth-single-capsule, 10 days, high dose PPI	7.3 (0.9-13.6)	0.025	8.3 (2.0-14.5)	0.009
Non-bismuth quadruple concomitant therapy, 10 days, standard dose PPI	8.2 (2.1-14.2)	0.008	8.0 (2.2-13.9)	0.007
Non-bismuth quadruple concomitant therapy, 10 days, high dose PPI	8.8 (1.1-16.5)	0.025	10.0 (2.5-17.6)	0.009
Non-bismuth quadruple concomitant therapy, 14 days, low dose PPI	4.5 (-1.8-10.8)	0.166	4.6 (-1.6-10.8)	0.145
Non-bismuth quadruple concomitant therapy, 14 days, standard dose PPI	7.5 (-0.6-15.5)	0.069	6.8 (-1.0-14.6)	0.088
Non-bismuth quadruple concomitant therapy, 14 days, high dose PPI	7.7 (2.5-12.8)	0.003	7.5 (2.4-12.5)	0.004

[Adjusted estimates for eradication with respect to non-bismuth quadruple concomitant therapy during 10 days and low dose PPI]*

Low dose PPI: ranging from 4.5 to 27 mg omeprazole equivalents, b.i.d. Standard dose PPI: ranging from 32 to 40 mg omeprazole equivalents, b.i.d. High dose PPI: ranging from 54 to 128 mg omeprazole equivalents, b.i.d. Bismuth-single-capsule (PPI-bismuth-tetracycline-metronidazole). Non-bismuth quadruple concomitant therapy (PPI-amoxicillin-clarithro-mycin-nitroimidazole). *Estimates controlling for: age, sex, ethnicity, in-dication, concomitant allergy drug, hospital fixed effects and year fixed effects.

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P0234

ANTIBIOTIC RESISTANCE TRENDS OF *HELICOBACTER PYLORI* NAïVE PATIENTS IN THE PERIOD 2013-2019: ANALYSIS OF THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Bacterial antibiotic resistance changes over time based on multiple factors. It is essential to study these trends to apply preventive strategies to help reducing such resistances.

Aims & Methods: To conduct a time-trend analysis of the antibiotic re-sistance to *H. pylori* infection in the European Registry on *H. pylori* (Hp-EuReg). International multicenter prospective non-interventional Euro-pean Registry on *H. pylori* Management (Hp-EuReg) aiming to evaluate the decisions and outcomes of *H. pylori* infection by European gastroenterolo-gists. All infected adult patients diagnosed with culture and with a result of the antibiotic resistance test were registered at AEG-REDCap e-CRF from 2013 to 2019.

Results: A total of 32,447 patients were included, and culture was per-formed in 3,474 (11%), where 2,483 näive patients were included for analysis. Resistance to at least one antibiotic was described in 57% of the patients. Resistance to metronidazole (27%) was most frequent, whereas resistance to tetracycline and amoxicillin was below 1%. Clarithromycin resistance remained above 15% throughout the studied years (Table 1). A significant decrease in the metronidazole resistance rate was observed between 2013 (38%) and 2018 (21%).

Conclusion: In naïve patients, resistance to clarithromycin remained above 15% in the period 2013-2019. A progressive decrease in metronidazole resistance was observed. No increasing or decreasing trend was observed in the bacterial resistance to other antibiotics.

N (%)	2013	2014	2015	2016	2017	2018	2019	Variation range
Nº Cultures	435	522	469	286	355	282	310	282-522
No resistance	210 (48)	259 (50)	197 (42)	93(33)	162 (46)	106 (38)	104 (33.5)	33-50
Clarithromycin (C)	86 (20)	120 (23)	117 (25)	59(21)	68 (19)	65(23)	57(18)	18-25
Metronidazole (M)	165 (38)	156 (30)	140 (30)	72(25)	64 (18)	60(21)	66(21)	18-38
Levofloxacin (L)	58 (13	100 (19)	103 (22)	46(16)	59 (17)	55(20)	41(13)	13-22
Amoxicillin	6(1)	0 (0)	0(0)	0(0)	10 (3)	1 (0.4)	0(0)	<1
Tetracyclin	3 (0.7)	1 (0.2)	0(0)	1 (0.3)	5 (1.4)	0(0)	1 (0.3)	<1.4
Dual (C+M)	56 (13)	65 (13)	62(13)	33(12)	30 (9)	28(10)	29 (9)	9-13
Triple (C+M+L)	22 (5)	31 (6)	32 (7)	16 (6)	12 (3)	12 (4)	8(3)	3-7

[Table 1. Antibiotic resistance trends (2013-2019) of Helicobacter pylori naïve patients in Europe. C: clarithromycin; M: metronidazole; L: lefloxacin]

C: clarithromycin; M: metronidazole; L: lefloxacin

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P0235

THE LONG-TERM EFFECT OF THE ERADICATION OF HELICOBACTER PYLORI IN T2DM OR PREDM PATIENTS

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Introduction: The positive relationship between Helicobacter pylori (H. pylori) infection and extra-gastrointestinal disease has been revealed in several studies. However, the long-term effect of H. pylori eradication on the metabolic syndrome or diabetes mellitus (DM) have not been estab-lished, yet.

Aims & Methods: The aim of this study was to evaluate the effect of H. pylori eradication on glycemic control in type 2 DM (T2DM) or preDM pa-tients. From Dec 2006 to Feb. 2019, 3,608 subjects were enrolled at Seoul National University Bundang Hospital who received esophagogastroduo-denoscopy. 147 subjects with T2DM or preDM were selected and were divided in three groups, H. pylori-negative (n=40), H. pylori-positive with non-eradicated (n=57) and eradicated group (n=50). H. pylori was diag-nosed by culture, histology, CLOtest and Anti-H. pylori IgG antibodies. HbA1c was measured before an eradication therapy or an enroll date in case of H. pylori-negative and non-eradicated group. The follow-up points were 1 year and 5 years after enrollment. For the statistical significance of HbA1c changes according to follow up period in three groups, a linear mixed model was used. P-value < 0.05 was regarded as statistically sig-nificant.

Results: There were no significant baseline differences of HbA1c among H. pylori-negative, H. pylori-positive with non-eradicated and eradicated group. In H. pylori-eradicated group, the values of HbA1c were significant-ly decreased after the eradication compared to H. pylori-negative and H. pylori-positive with non-eradicated groups in each 1 and 5 year points. In subgroup analysis, HbA1c values decreased in the patients who are male and/or age under 65 in the eradicated group compared to other groups. In contrast, HbA1c changes were not different among three groups in female or aged group over 65. We also proved the interaction between follow up period and group difference adjusted for age, sex, smoke, alcohol (Table 1). The eradication of H. pylori had significant effect on improvement of HbA1c values through follow up period compared to non-eradicated group at 1 and 5 year follow-up. However, TG and HDL has no statistically significant difference between three groups.

	Estimate	P value
Age<65 vs ≥ 65	0.34 (0.15)	0.021
Male vs female	0.05 (0.22)	0.811
Non vs Current/ex-smoker	0.06 (0.22)	0.782
Non vs Current/ex-drinker	-0.25 (0.16)	0.130
H. pylori negative * 1 years‡	0.04 (0.14)	0.778
Eradicated * 1 years‡	-0.31 (0.13)	0.016
H. pylori negative * 5 years‡	-0.06 (0.16)	0.735
Eradicated * 5 years‡	-0.48 (0.15)	0.001

Data are presented as mean (standard error). Adjusted variables: age, sex, smoke, alcohol. ‡: The interaction between H. pylori status and follow up period (1 and 5 years). P value : adjusted P value; compared to Non-eradicated group.

[Multivariate analysis regarding changes in HbA1c according to H. pylori status]

Conclusion: H. pylori eradication decreased HbA1c level in T2DM or DM patients for long term follow up period, especially in male subjects and age under 65, which support the rationale for recommendation of H. pylori eradication therapy in male or young patients with T2DM or preDM. **Disclosure:** Nothing to disclose

P0236

ROOM FOR IMPROVEMENT IN THE TREATMENT OF *HELICOBACTER PYLORI* INFECTION: LESSONS FROM THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Managing *Helicobacter pylori* infection requires constant decision-making, and each decision is open to possible errors.

Aims & Methods: To evaluate common mistakes in the eradication of *H. pylori*, based on the European Registry on *Helicobacter pylori* manage-ment (Hp-EuReg). Hp-EuReg is an international multicentre prospective non-interventional registry evaluating the decisions and outcomes of *H. pylori* management by European gastroenterologists in routine clinical practice.

Results: Countries recruiting more than 1,000 patients were included (26,340 patients). The most common mistakes (percentages) were: 1) To use the standard triple therapy where it is ineffective (46%). 2) To prescribe eradication therapy for only 7-10 days (69%) (Table 1). 3) To use a low dose of proton pump inhibitors (48%). 4) In patients allergic to penicillin, to prescribe always a triple therapy with clarithromycin and metronidazole (38%). 5) To repeat certain antibiotics after eradication failure (>15%). 6) To ignore the importance of compliance with treatment (2%). 7) Not to check the eradication success (6%). Time-trend analyses showed progressive greater compliance with current clinical guidelines. **Conclusion:** The management of *H. pylori* infection by European gastroen-terologists is heterogeneous, frequently suboptimal and discrepant with current recommendations. Clinical practice is constantly adapting to up-dated recommendations, although this shift is delayed and slow.

	7 or 10 days			14 days	
	Mistake (%) [1]	mITT (%)	14-days use, N (%)	mITT, N (%)	95%CI
Spain	71	71	1,429 (29)	1,297 (86)	(83-87)
Russia	63	77	984 (37)	790 (90)	(88-92)
Slovenia	62	85	1,070 (38)	722 (91)	(89-93)
Italy	93	84	28 (7)	21 (67)	(43-85)
Lithuania	84	75	182 (16)	1 (100)	(1.3-99)
Total	69	81	3,693 (31)	2,831 (88)	(87-89)

[Table 1. Use and effectiveness of 7, 10 and 14-day triple regimens in Europe.]

N: total number of patients, mITT: modified intention-to-treat, PP:per-protocol, CI: confidence interval, [1]% of mistake accounted for 7 or 10 day-treatment durations.

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P0237 WITHDRAWN

P0238

BISMUTH QUADRUPLE REGIMEN WITH TETRACYCLINE OR DOXYCYCLINE VERSUS PYLERA® AS THIRD-LINE RESCUE THERAPY FOR *H. PYLORI* INFECTION: A PROSPECTIVE MULTICENTER ANALYSIS OF THE EUROPEAN REGISTRY ON *HELICOBACTER PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Different bismuth-quadruple therapies containing proton pump inhibitors, bismuth, metronidazole, and a tetracycline have been recommended as third-line *Helicobacter pylori* eradication treatment after failure with clarithromycin and levofloxacin.

Aims & Methods: To evaluate the efficacy and safety of third-line treat-ments with bismuth, metronidazole and either tetracycline or doxycy-cline. Sub-study of the European Registry on *H. pylori* Management (Hp-EuReg), an international multicenter prospective non-interventional registry of the routine clinical practice of European gastroenterologists. After previous failure with clarithromycin- and levofloxacin-containing therapies, patients receiving a third-line regimen with 10/14-day of PPI, bismuth, metronidazole and either tetracycline (T) or doxycycline (D), or 10-day Pylera® (P). Data were registered at AEG-REDCap online database.

Results: Four-hundred and fifty-four patients have been treated so far: 85 with T, 94 with D, and 275 with P. Average age was 53 years, 68% were women. Overall modified intention-to-treat and per-protocol eradication rates were 81% (D: 65%, T: 76%, P: 88%) and 82% (D: 66%, T: 77%, P: 88%), respectively. Further details on the effectiveness and compliance of each treatment group according to the length are presented in Table 1. By logis-tic regression, higher eradication rates were associated with compliance (OR=2.96; 95%CI=1.01-8.84) and no prior metronidazole use (OR=1.96; 95%CI=1.15-3.33); P was superior to D (OR=4.46; 95%CI=2.51-8.27), and T marginally superior to D (OR= 1.67; 95%CI=0.85-3.29).

Conclusion: Third-line (after failure with clarithromycin and levofloxacin) *H. pylori* eradication with bismuth quadruple treatment offers acceptable efficacy and safety. Highest efficacy was found in compliant patients and in those taking 10-day Pylera® or 14-day tetracycline. Doxycycline seems to be less effective and therefore should not be recommended.

Effectiveness, N (%)		Comp-liance	mITT, N	mITT	(95%CI)	PP, N	PP	(95%CI)
Group T	Overall	82 (97%)	64	76%	(66-86)	63	77%	(67-86)
	10 days*	29 (97%)	19	66%	(47-85)	19	66%	(47-85)
	14 days	45 (96%)	45	82%	(71-93)	44	83%	(72-94)
Group D	Overall	85 (93%)	58	65%	(55-76)	56	66%	(55-77)
	10 days*	37 (90%)	25	63%	(46-79)	23	63%	(45-79)
	14 days	53 (96%)	32	70%	(55-84)	32	71%	(57-85)
Group P	10 days*	249 (96%)	222	88%	(83-92)	216	88%	(84-92)

[Table 1. Effectiveness (by modified intention-to-treat and per-protocol) and compliance according to the treatment regimen and length]

Group T - tetracycline containing bismuth quadruple therapy, Group D - doxycycline containing bismuth quadruple therapy, Group P - single capsule bismuth quadruple therapy (Pylera®), 95%CI - 95% confidence interval. ITT: intention-to-treat, mITT: modified intention-to-treat; PP: per-protocol. The Chi_2 test showed statistically significant differences of treatment length in the mITT set between treatment groups (T, D and P) as reported in the table: *p < 0.001.

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P0239

IMPACT OF *HELICOBACTER PYLORI* CLARITHROMYCIN RESISTANCE ON THE TREATMENT EFFECTIVENESS: DATA OF THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Antibiotic resistance is the major factor affecting our ability to cure *Helicobacter pylori* infection. Quadruple therapy is currently rec-ommended; however, triple therapy with two antibiotics may be sufficient in those patients without clarithromycin resistance.

Aims & Methods: To evaluate the effectiveness of the treatments accord-ing to the clarithromycin *H. pylori* resistance in Europe. International mul-ticenter prospective non-interventional European Registry on *H. pylori* Management (Hp-EuReg) aiming to evaluate the decisions and outcomes of *H. pylori* infection. Infected adult patients diagnosed with culture regis-tered at AEG-REDCap e-CRF from 2013 to 2019. Per-protocol (PP) analysis was performed based on the presence or absence of clarithromycin bacte-rial resistance.

Results: Overall, 5,036 patients were included: 1,747 (35%) were resistant and 3,289 (65%) sensitive to clarithromycin. The overall eradication rate was higher in clarithromycin-susceptible patients (91% vs. 84%; p< 0.001). Triple therapy with a PPI, clarithromycin and amoxicillin achieved over 90% eradication rates in clarithromycin-susceptible patients. However, in those with clarithromycin-resistance, optimal effectiveness was only achieved when treated with quadruple therapy with a PPI, clarithromycin, amoxicillin and bismuth (Table 1).

Conclusion: Classic triple therapy with a PPI, clarithromycin and amoxi-cillin achieves optimal results (>90%) in patients susceptible to clarithro-mycin. However, when clarithromycin resistance is unknown, quadruple therapy with a PPI, clarithromycin, amoxicillin and bismuth may be a bet-ter treatment option.

Treatment schemes	Clarithromycin resistant (E/N,%)			Clarithromycin susceptible (E/N,%)		
Triple-C+A	11	14	79%	392	431	91%
Triple-A+L	165	191	86%	47	55	85%
Triple-A+M	46	55	84%	147	166	89%
Triple-A+R	91	102	89%	9	11	82%
Quadruple-C+A+M/T	43	54	80%	88	100	88%
Quadruple-C+A+B	10	11	91%	36	40	90%
Sequential-C+A+T	242	286	85%	627	664	94%
Sequential-C+A+M	17	23	74%	41	53	77%
Single capsule	66	80	83%	53	54	98%

[Table 1. Effect of the clarithromycin Helicobacter pylori resistance on the effectiveness of treatments in Europe]

E: number of eradicated patients N: total number of patients analysed; %: per-protocol effectiveness; C: clarithromycin; M: metronidazole; B: bismuth; A: amoxicillin; T: tinidazole; Single capsule: three-in-one single capsule containing bismuth, tetracycline and metronidazole (marketed as Pylera®)

Disclosure: Dr Luis Bujanda has no conflicts of interest to declare. Dr. Gis-bert has served as a speaker, a consultant and advisory member for or has received research funding from Mayoly, Allergan, Diasorin.

P0240

HELICOBACTER PYLORI ANTIBIOTIC RESISTANCE: DATA FROM THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Antibiotic resistance is the major factor affecting our ability to cure *Helicobacter pylori* infection. Understanding the different *H. pylori* antibiotic resistances could be the key to improve treatment effectiveness. **Aims & Methods:** To evaluate the *H. pylori* antibiotic resistance both prior and after one or several eradication treatments, in order to provide the most appropriate recommendations for the eradication of *H. pylori*.

International multicenter prospective non-interventional European Regis-try on *H. pylori* Management (Hp-EuReg) aiming to evaluate the decisions and outcomes of *H. pylori* infection by European gastroenterologists. In-fected adult patients diagnosed with culture and with a result of the anti-biotic resistance test registered at AEG-REDCap e-CRF from 2013 to 2019. Per-protocol (PP) analysis was performed. The antibiotic bacterial resis-tances were described by treatment line.

Results: A total of 32,447 patients were included, and culture was per-formed in 3,474 (11%). In naïve patients, 21% reported single clarithro-mycin resistance, and 11% dual (clarithromycin and metronidazole) resis-tance. Antibiotic resistance increased markedly from the first treatment, reaching over 37% dual resistance in second-line treatment (Table 1).

Conclusion: In Europe, culture testing to determine antibiotic resistance against *H. pylori* is scarce. *H. pylori* single clarithromycin resistance re-mains high (>15%) in all treatment lines, and greater than 20% in naïve patients. Dual or triple resistances are frequent and increase remarkably after the first treatment failure. Resistance to amoxicillin or tetracycline is exceptional.

Treatment line	Naïve (%)	Second (%)	Third (%)	Fourth (%)	Fifth (%)	Sixth (%)	p-value
Number of patients	2,485	521	311	97	31	11	
No resistance	1,054 (42)	74 (14)	26 (8)	7(7)	4 (13)	1 (9)	< 0.001
Clarithromycin (C)	531 (21)	298 (57)	217 (70)	72(74)	23 (74)	5 (45)	< 0.001
Metronidazole (M)	674 (27)	251 (48)	192 (62)	59(61)	19 (61)	7 (64)	< 0.001
Levofloxacine (L)	438 (18)	134 (26)	130 (42)	44(45)	12 (39)	3 (27)	< 0.001
Amoxicillin	17 (1)	4 (1)	5 (2)	0(0)	0 (0)	0 (0)	< 0.001
Tetracycline	11 (0.4)	3 (1)	2 (0.6)	1(1)	0 (0)	0 (0)	> 0.05
Dual (C+M)	279 (11)	195 (37)	165 (53)	52(54)	17 (55)	5 (46)	< 0.001
Triple (C+M+L)	128 (5)	91 (18)	99 (32)	34(35)	9 (29)	3 (27)	< 0.001

[Table 1. Helicobacter pylori antibiotic resistances (by treatment line) in Europe]

C: clarithromycin; M: metronidazole; L: levofloxacin

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P0241 WITHDRAWN

P0242

EFFECTIVENESS OF FIRST-LINE *H. PYLORI* ERADICATION THERAPY ACCORDING TO THE DAILY STATIN-USE: ANALYSIS OF THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: The use of statins combined with antibiotics has been suggested as a strategy to increase the effectiveness of *Helicobacter py-lori* treatments, mainly based on their anti-inflammatory characteristics. However, evidence published so far still remains scarce.

Aims & Methods: Aim: To analyse the impact of the daily use of statins in the effectiveness of *H. pylori* first-line therapies in a European cohort of patients.

Methods: Multicentre prospective non-interventional study of the clinical practice of European gastroenterologists of the European Registry on *H. pylori* Management (Hp-EuReg). Patients were collected at AEG-REDCap e-CRF from 2013 to December 2019. Records of naïve patients containing in-formation about the statins' use were collected and only those daily statin users were considered for current analysis. Modified intention-to-treat (mITT) analysis was performed to evaluate the treatment effectiveness be-tween statin and non-statin users. A multivariate analysis was performed on the overall population and for each treatment scheme, where the de-pendent variable was the eradication rate by mITT. The independent fac-tors evaluated were: age, gender, presence of ulcer, proton pump inhibitor dose, therapy duration, compliance and use of statins.

Results: Overall, 7,687 patients received an empirical first-line therapy. Median age was 56 years, 60% were women and 18% had peptic ulcer disease. From those, 1,895 (25%) were daily statins-users: 45% used simv-astatin, 35% atorvastatin, 11% rosuvastatin and 9% other statins. Univari-ate analysis showed no differences in the treatment effectiveness of the statin-users group versus no statin-users on the overall population, nei-ther by therapy prescribed (Table). Concerning the multivariate analysis, the daily statin-use in those patients receiving a standard triple therapy with clarithromycin and amoxicillin was associated with lower treatment effectiveness (OR=0.8; 95%CI: 0.6-0.99). This negative association was not confirmed when the overall population was analysed.

Conclusion: The daily use of statins does not seem to increase the effec-tiveness of *H. pylori* eradication treatment.

	Daily use of statins	mITT, N (%)	Differences (p-value)
Overall	No	4,835 (88)	p=0.44
	Yes	1,729 (88.5)	
PPI + C + A	No	1,790 (86)	p=0.05
	Yes	544 (82)	
PPI + C + M	No	380 (82)	p=0.52
	Yes	95 (79)	
PPI + Bi + Tc + M	No	616 (94.5)	p=0.69
	Yes	287 (95)	
PPI + C + A + M (Sequential)	No	53 (81)	p=0.32
	Yes	27 (93)	
PPI + C + A + M (Concomitant)	No	1,189 (88)	p=0.08
	Yes	527 (91)	
PPI + Bi + C + A	No	612 (88)	p=0.12
	Yes	186 (92.5)	

[Table 1: Impact of the statins' use on the effectiveness of most frequently used first-line empirical treatments in Europe.]

mITT: modified intention-to-treat. N: number of patients included. %: proportion of patients showing effectiveness. PPI: proton pump inhibitor. C: clarithromycin. A: amoxicillin. M: metronidazole. Bi: bismuth. Tc: tetracycline. Sequential: sequential administration of the treatment components. Concomitant: concomitant administration of the treatment components

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P0243

EFFECTIVENESS OF FIRST-LINE *HELICOBACTER PYLORI* ERADICATION TREATMENTS IN SPAIN: RESULTS FROM THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: In Spain, the prescription of *Helicobacter pylori* treatment is mainly empirical, based on previous local effectiveness rates reported in this area. Updated data from routine clinical practice represent a use-ful source of information contributing to implement treatment strategies.

Aims & Methods: To analyse the effectiveness of *H. pylori* first-line eradica-tion therapies in a Spanish cohort.

Systematic multicentre prospective registry of the clinical practice of gas-troenterologists on the Management of *H. pylori* infection (Hp-EuReg). All infected adult patients were registered at AEG-REDCap e-CRF from Feb-

ruary 2013 to June 2019. Data were subject to quality control. Effective-ness (by modified intention-to-treat, mITT) and multivariate analysis were performed. Independent factors evaluated were: age, gender, presence of ulcer, proton pump inhibitor (PPI) dose, therapy duration and compliance. **Results:** Overall, 10,267 naïve patients receiving an empirical treatment prescription and recruited among 53 Spanish hospitals were included. Median age was 50 years, 61% were women and 15% had peptic ulcer disease. The empirical therapies most frequently prescribed were (all of them including a PPI): the non-bismuth quadruple concomitant therapy (40%), the standard triple therapy containing clarithromycin and amoxi-cillin (26%), the bismuth three-in-one single capsule containing metroni-dazole, bismuth and tetracycline (16%), and the bismuth-clarithromycin-amoxicillin quadruple therapy (10%). Other therapies were given in 8% of the cases. Over 90% mITT eradication rate was obtained with 14-day quadruple therapies or with the 10-day bismuth single capsule (Table). Adverse events occurred in 25% of the cases, 0.2% of them being seri-ous. Multivariate analysis reported that being compliant (>90% drug in-take; OR=4.1; 95%CI: 3.0-5.5), longer duration therapies [10 days (OR=4.5; 95%CI: 3.2-6.2) or 14 days length (OR=4.1; 95%CI: 2.9-5.9)], higher acid gastric inhibition [standard PPI doses (OR=1.4; 95%CI: 1.2-1.7) or high PPI doses (OR=2.1; 95%CI: 1.7-2.4)] and the presence of ulcer (OR=1.2; 95%CI: 1.0-1.5), were associated with higher mITT eradication rates.

Conclusion: In Spain, optimal effectiveness (>90%) in first-line treatment was obtained with the non-bismuth concomitant therapy, the bismuth-clarithromycin-amoxicillin quadruple therapy (both for 14 days) and the 10-day bismuth single capsule therapy.

		Eradication rate				Safety	
	Length (days)	mITT, N (%)	95% CI	PP, N (%)	95% CI	AE, N (%)	95% CI
Overall	7	159 (60)	52-68	158 (61)	53-68	159 (3.1)	1-7
	10	6,011 (88)	87-89	5,858 (89)	88-90	6,167 (22)	21-23
	14	3,522 (90)	89-91	3,449 (90)	89-91	3,574 (33)	31-34
PPI + C + A + M (Conc)	10	2,232 (88)	87-90	2,175 (89)	88-90	2,296 (26)	24-28
	14	1,629 (92)	91-93	1,588 (92)	91-94	1,648 (30)	28-32
PPI + C + A	7	146 (59)	51-67	145 (59)	51-67	146 (2.7)	1-7
	10	1,686 (84)	82-86	1,657 (84.5)	83-86	1,737 (10)	9-12
	14	699 (86)	84-89	683 (87)	84-89	719 (28)	25-31
PPI + single capsule	10	1,533 (95)	94-96	1,507 (96)	95-97	1,558 (25)	23-27
PPI + Bi + C + A	14	1,004 (91)	89-93	992 (91)	89-93	1,008 (41)	38-44

[Table 1: Effectiveness and safety of the most-frequently prescribed first-line therapies in Spain.]

mITT: modified intention-to-treat. N: number of patients analysed. %: pro-portion of patients showing the event (effectiveness or the adverse event). CI: confidence interval. PP: per protocol. AE: adverse events. PPI: proton pump inhibitor. C: clarithromycin. A: amoxicillin. M: metronidazole. Single capsule: three-in-one single capsule containing bismuth, tetracycline and metronidazole. Bi: bismuth. Conc: concomitant administration of the drugs.

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P0244 WITHDRAWN

P0246

EFFECTIVENESS OF SECOND-LINE *HELICOBACTER PYLORI* ERADICATION TREATMENTS IN SPAIN: RESULTS FROM THE EUROPEAN REGISTRY ON *H. PYLORI* MANAGEMENT (HP-EUREG)

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Introduction: Optimal second-line regimens to treat *Helicobacter pylori* infection should be based on local previous results. This strategy is required in order to reach the highest effectiveness by reducing the necessity of further treatment lines, specially considering the increasing rates of multi-resistant bacterial strains worldwide.

Aims & Methods: To analyse the effectiveness of *H. pylori* second-line eradication therapies in a Spanish cohort.

Systematic multicentre prospective registry of clinical practice of gastroenterologists on the management of *H. pylori* infection (Hp-EuReg). All infected adult patients were registered at AEG-REDCap e-CRF from February 2013 to June 2019. Data were subject to quality control. Effectiveness (by modified intention-to-treat, mITT) and multivariate analysis were performed. Independent factors evaluated were: age, gender, presence of ulcer, proton pump inhibitor (PPI) dose, therapy duration, use of clarithro-mycin in the previous line, and compliance.

Results: Overall, 2,448 patients receiving an empirical second-line treat-ment and recruited among 53 Spanish hospitals, were included. Median age was 50 years, 66% were women and 94% of the patients had received clarithromycin in the first-line treatment attempt. The therapies more fre-quently prescribed were (all of them including a PPI): the triple levofloxa-cin-amoxicillin therapy (39%), the quadruple amoxicillin-levofloxacin-bis-muth therapy (19%), the quadruple bismuth three-in-one single capsule containing metronidazole, bismuth and tetracycline (19%) and the triple moxifloxacin-amoxicillin therapy (6%). Other therapies were given in 17% of the cases. Nearly 90% mITT eradication rate was obtained with either moxifloxacin or levofloxacin containing triple therapies, with the quadru-ple bismuth-levofloxacin therapy (all given for 14 days) or with the 10-day bismuth single capsule therapy (Table). Only 1 patient (0.2%) reported a serious adverse event. Multivariate analysis showed that compliance (>90% drug intake; OR=3.4; 95%CI: 1.7-6.9), high PPI dose (OR=1.9; 95%CI: 1.4-2.6) and 14-day therapy (OR=1.5; 95%CI: 1.1-2.1) were significantly as-sociated with higher mITT eradication rates.

Conclusion: In Spain, optimal effectiveness (approximately 90%) in sec-ond-line treatment was obtained with triple quinolone or quadruple bis-muth-quinolone regimens (both for 14 days) or with the 10-day bismuth single capsule therapy.

		Eradication rate				Safety	
	Length (days)	mITT, N (%)	95% CI	PP, N (%)	95% CI	AE, N (%)	95% CI
Overall	10 14	1,265 (79) 1,007 (89)	77-81 87-91	1,241 (80) 986 (90)	77-82 88-92	1,303 (18) 1,020 (42)	16-20 39-45
PPI + L + A	10 14	647 (74) 241 (92)	70-77 88-95	636 (74) 240 (92.5)	70-77 88-96	668 (11) 246 (65)	9-14 59-71
PPI + Bi + L + A	14	444 (90)	86-92	428 (90)	87-93	448 (33)	28-37
PPI + single capsule	10	399 (88.5)	85-91	390 (89)	86-92	411 (30)	26-35
PPI + Mx + A	10 14	20 (100) 109 (89)	NA 82-94	20 (100) 109 (89)	NA 82-94	21 (5) 112 (21)	0-24 14-30

[able 1: Effectiveness and safety of the most frequently prescribed second-line therapies in Spain.]

mITT: modified intention-to-treat. PP: per-protocol. N: number of patients analysed. %: proportion of patients showing the event (effectiveness or the adverse event). CI: confidence interval. AE: adverse event. PPI: proton pump inhibitor. L: levofloxacin. A: amoxicillin. Bi: bismuth. Single capsule: three-in-one single capsule containing bismuth, tetracycline and metroni-dazole. Mx: moxifloxacin. NA: non-applicable.

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