ONLINE SUPPLEMENTARY MATERIAL

Supplementary file 1. Contribution log

Jen Hinojosa Agencia Sanitaria Costa del Sol Marbella SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Inmaculada Santaella Agencia Sanitaria Costa del Sol Marbella SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nuria Fernandez Moreno Agencia Sanitaria Costa del Sol Marbella SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ilaria Maria Saracino University of Bologna ITALY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Horacio Alonso Galán Hospital de Donisti San Sebastian SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Almudena Durán Hospital de la Princesa Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jennifer Fernandez Pacheco Hospital de la Princesa Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Miroslav Vujasinovic Slovenj Gradec General Hospital Slovenj Gradec SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Rinaldo Pellicano Molinette Hospital Turin ITALY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Zdenko Kikec General Hospital Slovenj Gradec Slovenj Gradec SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Pedro-Luis Gonzalez Cordero Hospital San Pedro de Alcantara Caceres SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Maia Donday Hospital de la Princesa, CIBERehd, Instituto de Salud Carlos III Madrid SPAIN Monitored and interpreted the data, critically reviewed and approved the final manuscript

Angel Lanas Hospital Clinico Universitario Lozano Blesa Zaragoza SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Polona Lampic Diagnosticni center Bled Bled SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Vid Leban Diagnosticni center Bled Bled SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Aleksander Gruncic Krajnc Diagnosticni center Bled d.o.o. Bled SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Natasa Brglez Jurecic Diagnosticni center Bled d.o.o. Bled SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Galyna Dmytrivna Fadieienko Ukrainian Academy of Medical Sciences Kharkiv UKRANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Lorena Lee Instituto Fundación Teófilo Hernando Madrid SPAIN Monitored and interpreted the data, critically reviewed and approved the final manuscript

Irene V Barbado Instituto Fundación Teófilo Hernando Madrid SPAIN Monitor and interpret the data, critically reviewed and approved the final manuscript

Alfredo José Lucendo Hospital General de Tomelloso Tomelloso SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jesus Barrio RIo Hortega Hospital Valladolid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Tatiana Alekseevna Ilchishina SM-clinic Saint-Petersburg RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Irina Voynovan Moscow Scientific Clinical Center Moscow RUSSIA Acquired tdata, critically reviewed the manuscript draft, and approved the submitted manuscript.

Luis Ignacio Fernández-Salazar Hospital Clínico Universitario Valladolid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jose María Huguet Hospital General Universitario de Valencia Valencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Pilar Canelles Hospital General Universitario de Valencia Valencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Aiman Silkanovna Sarsenbaeva Gastroenterological center Chelyabinsk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ines Modolell Consorci Sanitari Terrassa Terrassa SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Pedro Almela Hospital General Universitario de Castellon Castellon SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Marina Roldán Lafuente Hospital General Universitario de Castellón Castellón de la Plana SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Josep Maria Botargues Hospital Universitari de Bellvitge L'Hospitalet de Llobregat SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Miguel Areia Portuguese Oncology Institute Coimbra PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Luís Elvas Portuguese Oncology Institute Coimbra PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Susana Isabel Alves Portuguese Oncology Institute Coimbra PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Daniel Brito Portuguese Oncology Institute Coimbra PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ana Teresa Cadime Portuguese Oncology Institute Coimbra PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Sandra Lúcia Madeira Saraiva Oncologycal Hospital of Coimbra Coimbra PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Charalampos Tzathas Tzaneio General Hospital Pireaus GREECE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Vassiliki Ntouli Tzaneio General Hospital Pireaus GREECE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alicia C Marin Hospital de la Princesa, CIBERehd, Instituto de Salud Carlos III Madrid SPAIN Monitore and interpretd the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Cem Simsek Hacettepe University Ankara TURKEY Acquired data and approved the submitted manuscript

Gerardo Nardone University Federico II Naples ITALY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alba Rocco University Federico II Naples ITALY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Juan Antonio Ortuño Hospital Universitari i Politècnic La Fe Valencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Tommaso Di Maira University Hospital La Fe Valencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Sotirios D. Georgopoulos Athens Medical Center, Paleo Faliron General Hospital Athens GREECE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Stephan Brackmann Lovisenberg Diakonale Hospital Oslo NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Vendel Kristensen Lovisenberg Diakonale Hospital Oslo NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Blas Jose Gomez-Rodriguez Hospital Quiron Sagrado Corazon Seville SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Perminder Singh Phull Aberdeen Royal Infirmary Aberdeen U.K. Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Sergey Alekseyevich Alekseenko Far Eastern State Medical University Khabarovsk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Monica Perona Hospital Quirón Marbella SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Rustam Abdulkhakov Kazan State Medical University Kazan RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Deirdre McNamara Adelaide & Meath Hospital Tallaght Dublin IRELAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Sinead M. Smith Trinity College Dublin Dublin IRELAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Denise Elizabeth Brennan Trinity College Dublin Dublin IRELAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Marina Fedorovna Osipenko Novosibirsk State Medical University Novosibirsk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Cristobal de la Coba Hospital de Cabueñes Gijon SPAIN Acquired data, critically reviewed the manuscripts draft, and approved the submitted manuscript.

Pilar Varela Hospital de Cabueñes Gijon SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Maria Anatolyevna Livzan Omsk state medical academy Omsk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Oleg V. Zaytsev First Clinical Medical Center Kovrov RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Vladislav Vladimirovich Tsukanov Federal State Budgetary Institution, Scientific research institute of medical problems of the North Siberian branch under the Russian Academy of Medical Sciences (FSBI 'SRIMPN' SB RAMS) Krasnoyarsk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alexander Viktorovich Vasyutin Federal State Budgetary Scientific Institution Scientific research institute of medical problems of the North Krasnoyarsk RUSSIA Acquired data, critically reviewed the manuscripts draft, and approved the submitted manuscript.

Olga Sergeevna Amelchugova Federal State Budgetary Scientific Institution Scientific research institute of medical problems of the North Krasnoyarsk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Spiros Michopoulus Alexandra Hospital Athens GREECE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Sergey Gennadievich Burkov Outpatient clinic Moscow RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Dan Dumitrascu Medical Department 2, University of Medicine and Pharmacy Iuliu Hatieganu Cluj Napoca ROMANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Bogdan Ianosi Medical Department 2, University of Medicine and Pharmacy Iuliu Hatieganu Cluj Napoca ROMANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ingrid Prytz Berset Alesund Hospital Alesund NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Rafael Ruiz -Zorrilla Lopez Hospital de Sierrallana Torrelavega SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Charo Antón Clinico de Valencia Valencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Anne Courillon-Mallet Centre Hospitalier Intercommunal (CIHV) Villeneuve St Georges FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Natasa Brglez Jurecic Splosna bolnisnica Trbovlje Trbovlje SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Judith Gomez-Camarero Hospital Universitario de Burgos Burgos SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Manuel Jimenez-Moreno Hospital Universitario de Burgos Burgos SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ahmet Uygun GATA Hospital Ankara TURKEY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ian Leonard Phillip Beales Norfolk and Norwich University Hospital Norwich U.K. Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alain Huerta-Madrigal Hospital Universitario Madrid Sanchinarro Madrid SPAIN Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Javier Alcedo Hospital de Barbastro Huesca SPAIN Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Mercè Barenys Hospital de Viladecans Viladecans SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Francesco Franceschi Catholic University of Rome Rome ITALY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jean-Charles Delchier Henri Mondor Hospital Créteil FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Liliana Silvia Pozzati Mérida Hospital Mérida SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Monika Augustyn Wojskowy Szpital Kliniczny Cracow POLAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Maja Seruga Hospital Murska Sobota Slovenia SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Miriam Hiestand Hospital of Chur Chur SWITZERLAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Patric Mosler Hospital of Chur Chur SWITZERLAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Zaza Beniashvili Rabin Medical Center, Hospital Ha Sharon Petah Tikva ISRAEL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Doron Boltin Rabin Medical Center, Beilinson Campus Petah Tikva ISRAEL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Hubert Louis Hôpital Erasme Brussels BELGIUM Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ramon Pajares Hospital Universitario Infanta Sofía San Sebastian de los Reyes SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Natalia Valerievna Zakharova North-western State Medical University named after I.I.Mechnikov St. Petersburg RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Natalia Nikolaevna Dekhnich Institute of Antimicrobial Chemotherapy Smolensk RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Victor Asparuhov Kamburov Lyulin Hospital Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Maria Pina Dore Clinica Medica, Dipartimento di Scienze Mediche, Chirurgiche e Sperimentali, Università di Sassari Sassari ITALY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Lorena Sancho Del val Hospital Rey Juan Carlos Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Noelia Alcaide Hospital Clínico Universitario Valladolid SPAIN Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Oscar Núñez Hospital Universitario Sanitas La Moraleja Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Katrine Dvergsnes Sørlandet Sykehus HF Kristiansand NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Peter Malfertheiner Otto-von-Guericke University Hospital Magdeburg GERMANY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ana Campillo Hospital Reina Sofia Tudela SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Miguel Fernandez-Bermejo Clinica San Francisco Caceres SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Manuel Domínguez-Cajal Hospital San Jorge Huesca SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

José Luis Domínguez Jiménez Alto Guadalquivir Hospital Andújar SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alicia Algaba Hospital Universitario de Fuenlabrada Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Fernando Bermejo Hospital Universitario de Fuenlabrada Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Borislav Vladimirov University hospotal Queen Ioanna-Isul Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

László Czakó University of Szeged Szeged HUNGARY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Teresa Angueira Hospital General de Tomelloso Ciudad Real SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Eduardo Iyo Hospital Comarcal de Inca Mallorca SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ekaterina Yuryevna Plotnikova Kemerovo State Medical Academy Kuzbass Regional Hepatology Center Kemerovo RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Larissa Tarasova Chuvash State University named after I.N. Ulyanov, the chair of faculty therapy Cheboksary RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ludmila Grigorieva Chuvash State University named after I.N. Ulyanov, the chair of faculty therapy Cheboksary RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Judith Millastre Hospital de Barbastro Barbastro SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Bruno Richard-Molard Clinique Bordeaux Nord Bordeaux FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Aldis Pukitis Paul Stradins Clinical University Hospital Riga LATVIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Valeriy Kryvy Crimean State Medical University named after S.I.Georgievskyi Simferopol UKRANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Roald Torp Sykehuset Innlandet, Hamar Hamar NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Albert Tomàs Consorci Sanitari del Garraf Sant Pere de Ribes SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Edurne Amorena Complejo Hospitalario de Navarra Pamplona SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Fermin Estremera Complejo Hospitalario de Navarra Pamplona SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Rossen Nikolov University Hospital St. Ivan Rilski Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Asghar Quasim Beacon Hospital Dublin IRELAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Yury Aleksandrovich Kucheryavyy Moscow State University of Medicine and Dentistry named after A.I. Evdokimov Moscow RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Natalia Baryshnikova Fisrt St-Petersburg Pavlov State Medical University St-Petersburg RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Xavier Calvet Corporació Sanitària Universitària Parc Taulí. CIBERehd, Instituto de Salud Carlos III Departament de Medicina. Universitat Autònoma de Barcelona Sabadell SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ariadna Figuerola Corporació Sanitària Universitària Parc Taulí. CIBERehd, Instituto de Salud Carlos III Departament de Medicina. Universitat Autònoma de Barcelona Sabadell SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Marco Romano Università degli Studi della Campania "Luigi Vanvitelli" Napoli ITALY Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Antonietta Gerarda Gravina Università degli Studi della Campania "Luigi Vanvitelli" Napoli ITALY Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Oscar Núñez "Hospital Uni. Sanitas La Moraleja Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Fazia Mana UZ Brussel Jette BELGIUM Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Pilar Sánchez-Pobre Hospital Clinico San Carlos Madrid SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Zoya Spassova University Hospital St. Ivan Rilski Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jesús M González-Santiago Hospital Clínico Universitario. Instituto de Investigación Biomédica de Salamanca (IBSAL). Salamanca SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ricardo Marcos-Pinto 1. Centro Hospitalar do Porto 2. Institute of Biomedical Sciences Abel Salazar, University of Porto 3. CINTESIS, University of Porto Porto PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

F Wolfhagen Albert Schweitzer Ziekenhuis Dordrecht THE NETHERLANDS Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Svetlana Cui Pauls Stradins Clinical University Hospital Riga LATVIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ivonne Leeuwenburgh Sint Franciscus Gasthuis Rotterdam THE NETHERLANDS Acquired ata, critically reviewed the manuscript draft, and approved the submitted manuscript.

Driffa Moussata Lyon Sud Hospital Pierre Benite FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Adi Lahat-zok Chaim Sheba medical center and Sackler School of Medicine, Tel Aviv University ISRAEL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Sergii Hryhorovych Melashchenko Vinnitsa National Medical University Vinnytsia UKRANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Rasmus Goll University Hospital of North Norway Tromso NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Tatyana Vasilyevna Zhestkova Ryazan State Medical University Ryazan RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Juris Pokrotnieks Pauls Stradins Clinical University Hospital Riga LATVIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Philippe Émile Houcke Hôpital Claude Huriez (CHRU) Lille FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nadiya Byelyayeva Donetsk National Medical University Donetsk UKRANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Marta Lozano Lanagran Hospital Quuiron Malaga SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Mette Wildner-Christensen Odense University Hospital (OUH) Svendborg DENMARK Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Bengt Odman Soder Hospital Stockholm SWEDEN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Yana Valerieva University Hospital Tsaritsa Yoanna-ISUL Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alenka Forte MC Heliks, d.o.o. Trbovlje SLOVENIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Antonio Cuadrado Lavin Hospital Universitario Marqués de Valdecilla Santander SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Patrice Pienkowski Hospital Center de Montauban Montauban FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ilze Kikuste University of Latvia, Digestive diseases centre GASTRO Riga LATVIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Dag Arne Lihaug Hoff Aalesund Hospital Aalesund NORWAY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jane Moeller Hansen Odense University Hospital Odense DENMARK Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Konrads Funka Digestive Diseases Centre GASTRO Riga LATVIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alla Kononova Department of General Practice Tver RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Sergey Kolbasnikov The Head of Department of General Practice Tver RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Michael Selgrad Otto-von Guericke University Magdeburg GERMANY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jolanta Sumskiene Lithuanian University of Health Sciences Hospital Lithuania LITHUANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Jonathan Hirsch Meir Medical Center Kfar Saba ISRAEL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Francisco Javier Zozaya Larequi Hospital Universitario Donostia San Sebastián SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alain C. Burette Chirec clinique de la Basilique and clinique Edith Cavell Brussels BELGIUM Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nora Dancs Petz-Aladar Teaching Hospital Gyor HUNGARY Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Janne Rajala Herttoniemi Hospital Helsinky FINLAND Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Christina Reimer Hvidovre Hospital Hvidovre DENMARK Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Diogo Libanio Gastroenterology Department Instituto Portugues de Oncologia do Porto (IPO-Porto) Porto PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Pedro Pimentel-Nunes Gastroenterology Department Instituto Portugues de Oncologia do Porto (IPO-Porto) Porto PORTUGAL Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Ivailo Evstatiev University Hospital St. Ekaterina Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Juozas Kupcinskas Lithuanian University of Health Sciences Kaunas LITHUANIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Mikhail Butov State Budgetary Educational Institution of Higher Professional Education Ryazan State I.P. Pavlov Medical University of the Ministry of Public Health of Russian Federation (SB?IHPE RSMU of Ministry of Public Health of Russian Federation) Department of Propaedeutics of Internal Diseases Ryazan RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Peter Mensink Medisch Spectrum Twente Enschede THE NETHERLANDS Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

T Tang IJsselland Ziekenhuis Capelle aan de Ijssel THE NETHERLANDS Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Andrey Yurevich Baranovsky North-Western State Medical University named after I.I.Mechnicov Saint-Petersburg RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Natalya Marchenko North-Western State Medical University named after I.I. Mechnikov Saint-Patarsburg RUSSIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Boris Bastens CHC Liege Liege BELGIUM Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Lyudmila Mateva "University Hospital St. Ivan Rilski Sofia BULGARIA Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Dominique Lamarque Hôpital Ambroise-Paré Boulogne-Billancourt (Paris) FRANCE Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Leonardo Henry Eusebi Department of Medical and Surgical Sciences (DIMEC), University of Bologna, Gastroenterology and Endoscopy Unit, Policlinico S.Orsola-Malpighi Bologna ITALY Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Mario Ribeiro FMUP/IPATIMUP Porto PORTUGAL Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

M ter Borg Maxima Medisch Centrum Eindhoven THE NETHERLANDS Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Alexander C. Ford Leeds Teaching Hospitals Trust Leeds U.K. Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Enrique Medina Consorcio Hospital General de Valencia Valencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Manuel Rodriguez-Tellez Virgen Macarena University Hospital Sevilla SPAIN Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Francisco José Rancel Medina Hospital Virgen del Puerto Plasencia SPAIN Acquired the data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Elisa Martin Hospital Virgen del Puerto Plasencia SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Carolina Torres Gonzalez Hospital de la Ribera Alcira (Valencia) SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Lissa Maria Franco Hospital de Cabueñes Oviedo SPAIN Acquired data, critically reviewed the manuscript draft, and approved the submitted manuscript.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 2. Hp-EuReg description and protocol

The study was approved by the Ethics Committee of La Princesa University Hospital (Madrid, Spain) and was prospectively registered in ClinicalTrials.gov (NCT02328131). The Hp-EuReg Scientific Committee currently comprises: Javier P. Gisbert (Principal Investigator), Francis Mégraud, Colm A. O'Morain, Ignasi Puig and Olga P. Nyssen (the two latter, are also the Scientific Directors). The Hp-EuReg protocol[27] reported criteria for country selection, national coordinators, gastroenterologist recruiting investigators and a list of variables and outcomes. Initially, 27 European countries with over 300 recruiters were selected.

Data were recorded in an Electronic Case Report Form (e-CRF), collected and managed using the web-based application designed to support data capture for research studies, REDCap, hosted at "Asociación Española de Gastroenterología" (AEG; www.aegastro.es), a non-profit Scientific and Medical Society focused on Gastroenterology research.

Data extraction was performed in June 2018 and was subject to monitoring (at least a 10% of the included records per country and centre) and quality check.

Supplementary file 3. Regional clusters of the participating Hp-EuReg countries

1. East. Low gross domestic product per capita (GDP) (€ 2.5K to 11K): Ukraine, Serbia, Bulgaria, Turkey, Russia, Romania.
2. South-east. Low-medium GDP (€ 13K to 24K): Croatia, Poland, Hungary, Latvia, Lithuania, Greece, Slovenia.
3. South-western. Medium GDP (€ 21K to 30K): Portugal, Spain.
4. Centre. Medium-high GDP (€ 30K to 40K): Italy, France.
5. North. High GDP (€ 40K to 80K): The United Kingdom, Belgium, Germany, Finland, The Netherlands, Ireland, Israel, Norway, Switzerland.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 4. First-line empirircal treatment category pools for the univariate analysis

1. Triple –C+A (a PPI together with clarithromycin and amoxicillin)
2. Triple –C+M (a PPI together with clarithromycin and metronidazole)
3. Triple –A+L (a PPI together with clarithromycin and levofloxacin)
4. Triple –A+M (a PPI together with amoxicillin and metronidazole)
5. Sequential –C+A+M (a PPI together with clarithromycin, amoxicillin and metronidazole given in a sequential way)
6. Sequential –C+A+T (a PPI together with clarithromycin, amoxicillin and tinidazole given in a sequential way)
7. Concomitant –C+A+M (a PPI together with clarithromycin, amoxicillin and metronidazole)
8. Concomitant –C+A+T (a PPI together with clarithromycin, amoxicillin and tinidazole given in a concomitant way)
9. Quadruple –C+A+B (a PPI together with clarithromycin, amoxicillin and bismuth salts)
10. Bismuth quadruple –M+Tc+B (a PPI together with metronidazole, tetracycline and bismuth salts given in the standard way)
11. Quadruple –M+D+B (a PPI together with metronidazole, doxycycline and bismuth salts given in the standard way)
12. Pylera® single capsule (a proton pump inhibitor together with the three-in one single capsule given as stated in the technical sheet)
13. Others (including more than 80 different 1st-line treatments with frequencies lower than 0.5%)

C – clarithromycin, M – metronidazole, T – tinidazole, A – amoxicillin, B – bismuth salts, Tc – tetracycline

Supplementary file 5. Proton pump inhibitor categories: low, standard and high acid inhibition

1. Low dose PPI: ranging from 4.5 to 27 mg omeprazole equivalents, b.i.d. (i.e. 20 mg omeprazole equivalents, b.i.d.).
2. Standard dose PPI: ranging from 32 to 40 mg omeprazole equivalents, b.i.d. (i.e. 40 mg omeprazole equivalents, b.i.d.).
3. High dose PPI: ranging from 54 to 128 mg omeprazole equivalents, b.i.d. (i.e. 60 mg omeprazole equivalents, b.i.d.).

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 6. First-line empirical treatment category pools for the multivariate analysis

1. Triple –C+A
2. Triple –C+M
3. Sequential –C+A+T/M (including Sequential –C+A+T and Sequential –C+A+M)
4. Concomitant –C+A+T/M (including Concomitant –C+A+T and Concomitant –C+A+M)
5. Bismuth quadruple (including Quadruple –M+Tc+B, and Pylera®)
6. Quadruple –C+A+B

C – clarithromycin, M – metronidazole, T – tinidazole, A – amoxicillin, B – bismuth salts, Tc – tetracycline

The following treatment categories were not considered due to their low relative frequencies and the unsuitability to aggregate them with the other treatments: triple with amoxicillin-metronidazole, triple with amoxicillin-levofloxacin, quadruple with metronidazole-doxycycline-bismuth and 'Others'.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 7. Mixed logistic regression models

Mixed logistic regression models were used to study the relation between eradication and other variables. Also, in order to evaluate the potential impact of underlying differences of patient outcomes between different hospitals, a second level variable “centre”, including a random hospital-specific intercept, was included. The strategy consisted in the following:

Null model

A null model was run including the outcome variable and the second-level aggregation identifier ‘centre’. The intra-class correlation coefficient (ICC), which estimates the proportion of outcome variance explained by the existing differences between centres, was derived from the variance decomposition of the intercept coefficient variance on the logit scale.

Global mixed model with interaction between compliance and treatment

This model was created including all six treatment categories in order to evaluate the effectiveness of treatments controlled by the hospital-specific intercept. It also focused on the interaction between compliance and treatment since it was suspected that the influence of compliance on eradication would be different depending on the treatment considered.

Mixed effects logistic regression for each treatment

Mixed effects logistic regression was developed in successive blocks for each treatment. The first block included the independent variables at the patient level: sex (female [reference], male), age-centred, indication (dyspepsia

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

[reference], ulcer), treatment length (7 [reference], 10 and 14 days), PPI dose (low [reference], standard and high dose) compliance (<90% [reference] and ≥90%); along with the second-level variable 'centre'. Afterwards, those predictor variables not reaching statistical significance (i.e. p> 0.05 level) were removed stepwise, allowing the addition of those that reached significance during the process or removing those that had lost it. In the second block, the interaction between compliance and any other variable that had reached statistical significance in the first block was studied, as well as the interaction between treatment length and PPI dose. Non-statistically significant interactions were removed in order to obtain the final models for each treatment. Also, during data recording or data quality controls some information (inadequate or confusing data) was lost. Missing-data imputation procedures were not used. Statistical analyses were carried out with IBM SPSS 23.0. and STATA 12.0.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 8. *H. pylori* diagnostic methods

Most patients (66%) underwent invasive endoscopic procedures for diagnosis of the infection. Confirmation of eradication was performed in 71.4% of the cases; by excluding on-going cases (i.e. less than 6 months of follow-up and without confirmation of eradication), this figure increased to 95%. The most common reasons for lack of confirmation were patient refusal and/or patient not attending the examination. The most common non-invasive method for confirmation of eradication was the ^{13}C-urea breath test (73%). Centres from regions with higher GDP per capita (centre and north) performed more invasive diagnoses and more cultures and antibiograms (from 1.8-5.1% cultures in low to medium GDP countries to 24.0-70.4% in richest areas), providing susceptibility tailored prescription of antibiotics in routine clinical practice.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 9. Bacterial antibiotic resistances

Bacterial antibiotic resistance data were available in 2,396 patients (11.1%) of the sample. Single resistance (i.e. at least to one antibiotic) was reported for 54.0% of the strains. Resistance in naïve patients varied per region: clarithromycin bacterial resistance was reported in 10.6% and 11.9% of the cases in the north and centre, respectively; in 14.2% in the south-west; and in 24.5% and 27.5% in eastern and south-eastern Europe, respectively.

Resistance to the most common antibiotics was: 766 patients (32.0% of cultures) to nitroimidazoles, 543 patients (22.7%) to clarithromycin, and 321 patients (13.4%) reported dual resistance to both clarithromycin and nitroimidazole.

In the overall analysis, a successful eradication was achieved in 88.7% of patients without resistance, in 81.6% of patients with resistance to clarithromycin, in 83.8% of patients with resistance to nitroimidazoles, and in 83.5% of patients with dual resistance. The effect of the bacterial resistance in naïve patients is reported by treatment in Supplementary table 4.

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary file 10. Mixed effects logistic regression: final models by first-line empirical treatment

Triple with clarithromycin-amoxicillin

The final model included the first level variables: indication, treatment length, PPI dose and compliance, whereas the variable 'age centred' was discarded during the stepwise selection process. ORs (95% CI) were as follows: indication 1.422 (1.152 – 1.756); 10 days treatment length 1.443 (1.118 –1.864), 14 days treatment length 1.552 (1.112 – 2.166); standard dose PPI 1.447 (1.169 – 1.790), high dose PPI 1.639 (1.255 – 2.140) and compliance 7.638 (4.536 – 12.862). None of the interactions studied reached statistical significance. Variance of the random component was 0.791 (SE 0.190).

Triple with clarithromycin-metronidazole

The final model included the first level variables PPI dose and compliance. ORs (95% CI) were as follows: standard dose PPI 3.320 (1.229 – 8.971), high dose PPI 1.698 (1.032 – 2.793); compliance 32.149 (1.674 – 617.13). None of the interactions studied reached statistical significance. Variance of the random component was 1.541 (SE 0.852).

Sequential with clarithromycin-amoxicillin-metronidazole/tinidazole

The final model included the first level variables: age centred, sex, PPI dose and compliance. ORs (95% CI) were as follows: age 1.013 (1.001 – 1.027) for each year above the mean; sex male 1.988 (1.300 – 3.042); standard dose PPI 3.301 (0,862 – 12.641), high dose PPI 1.834 (1.117 – 3.021); compliance 22.212 (7.301 – 67.574). None of the interactions studied reached statistical

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

significance. Variance of the random component was 0.619 (SE 0.357).

Concomitant with clarithromycin-amoxicillin-metronidazole/tinidazole

The final model included the first level variables: age centred, sex, diagnosis, PPI dose and compliance. ORs (95% CI) were as follows: age 0.994 (0.989 – 0.999) for each year above the mean; sex male 1.366 (1.075 – 1.735); diagnosis 1.498 (1.038 – 2.162); standard dose PPI 1.702 (1.158 – 2.504), high dose PPI 1.802 (1.296 – 2.507) and compliance 4.512 (2.600 – 7.829). None of the interactions studied reached statistical significance. Variance of the random component was 0.321 (SE 0.140).

Bismuth Quadruple (including single capsule bismuth quadruple)

The final model included the first level variable compliance and its OR (95% CI) was 23.582 (9.401 – 59.155). No interaction was studied. Variance of the random component was 0.374 (SE 0.306).

Single capsule Bismuth Quadruple

An additional model was run exclusively including those cases treated with Pylera®. After forced introduction of the variables, the single first level variable reaching statistical significance was compliance (data not shown in table 4). Therefore, the final model included the first level variable compliance and its OR (95% CI) was 23.131 (9.038 – 59.197). No interaction was studied. Variance of the random component was 0.321 (SE 0.256).

Quadruple with clarithromycin-amoxicillin-bismuth

The final model included the first level variables: age centred, treatment length, PPI dose and compliance. The variable treatment length, evaluated two levels, 10 and 14 days and reached statistical significance (p = 0.011) during the variable stepwise selection process. Moreover, a significant interaction between treatment length and PPI dose was found (p = 0.014). ORs (95% CI) were as follows: 14 days treatment length with respect to 10 days 4.479 (1.418 – 14.148); standard dose PPI 2.795 (1.190 – 6.566), high dose PPI 4.620 (1.165 – 18.319) and compliance 5.235 (1.670 – 16.416). The interaction between treatment length and PPI dose, nuanced the effects of these two variables on mITT effectiveness; that is, when the PPI dose was low, the effect of the 14-day treatment on eradication was higher than 10-day treatment, OR 4.479 (1.418 – 14.148). However, this effect was not significant with standard PPI doses, OR 0.394 (0,091 – 1.704); and was reversed when the PPI dose was high, OR 0.123 (0.022 – 0.723). Variance of the random component was 0.228 (SE 0.180).

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary Table 1. Inclusion of patients per country

COUNTRY	FREQUENCY (N)	PERCENTAGE (%)
SPAIN	9,864	45.8
RUSSIA	2,763	12.8
SLOVENIA	2,272	10.6
ITALY	1,749	8.1
NORWAY	661	3.1
LITHUANIA	615	2.9
LATVIA	572	2.7
GREECE	464	2.2
UKRAINE	410	1.9
TURKEY	268	1.2
PORTUGAL	254	1.2
IRELAND	251	1.2
FRANCE	236	1.1
HUNGARY	215	1.0
U.K.	169	.8
ROMANIA	129	.6
ISRAEL	103	.5
BULGARIA	98	.5
CROATIA	92	.4
BELGIUM	73	.3
POLAND	69	.3
GERMANY	65	.3
SWITZERLAND	56	.3
THE NETHERLANDS	37	.2
DENMARK	29	.1
SERBIA	11	.1
FINLAND	8	.0
TOTAL	21,533	100

Supplementary Table 2. Baseline characteristics of regional cluster comparison with highest recruiting countries

Percentages (%)	Spain	Russia	Slovenia	Italy	Norway	Latvia	Pool	Else[1]
Participation (inclusion rate)	46	13	10	6.7	4.4	3.3	83	17
Female	62	60	62	64	51	65	60.5	59
Penicillin allergy	4.6	1.9	2.5	0.4	4.2	1.5	2.5	3.1
Compliance	97	96	95	94.5	97	98.5	96	95
No confirmation of eradication	3.0	16	9.0	6.4	0.4	0.2	5.9	5
Invasive diagnosis	55	64	88.5	88	75	77	75	66
10-day treatments	62.5	67	11	95.2	52	32	53	58.5
mITT in 10-day treatments	82.5	70	78	83.0	86	83	80	80.5
PPI+C+A	82	64	57	NA	92	90	77	77
PPI+C+A+M/T seq	81	70	81	86	NA	NA	79.5	84
PPI+M+Tc/D+B	73	79	NA	97.5	90	NA	85	83
PPI+Pylera®	91	NA	88	92	NA	NA	90	92
PPI+C+A+M/T	86	NA	88	79	NA	NA	84	86

mITT – modified intention-to-treat, NA – not applicable/unknown, PPI – proton pump inhibitor, Seq – sequential, C – clarithromycin, M – metronidazole, T – tinidazole, A – amoxicillin, D – doxycycline, B – bismuth salts, Tc – tetracycline, Pool – pooled data from high recruiting countries, [1]pooled data from the remaining countries (Greece, Ukraine, Turkey, Ireland, The United Kingdom, Hungary, Portugal, Romania, France, Lithuania, Croatia, Belgium, Israel, Switzerland, Bulgaria, Germany, The Netherlands, Denmark, Poland, Serbia, Finland).

Nyssen OP, *et al. Gut* 2020; 70:40–54. doi: 10.1136/gutjnl-2020-321372

Supplementary Table 3. Prescription trends (2013 to 2018)

	2013	2014	2015	2016	2017	2018
N	3,942	5,004	4,156	4,204	3,391	778
PPI-C+A+B	0.5%	0.9%	5.2%	17.2%	10.2%	15.3%
Pylera®	0.0%	0.0%	0.5%	12.0%	24.5%	22.3%
PPI-M+Tc+B	2.3%	1.9%	0.4%	0.2%	0.3%	0.4%
PPI-C+A+M/T[1]	20.0%	21.4%	26.9%	22.3%	21.2%	10.6%
PPI-C+A+M/T[2]	8.1%	3.4%	1.8%	0.9%	0.3%	0.5%
PPI-A+L	2.1%	2.2%	3.2%	1.9%	0.3%	0.3%
PPI-A+M	4.1%	3.0%	1.7%	0.9%	0.9%	0.6%
PPI-C+M	3.9%	6.4%	9.0%	6.6%	1.4%	1.0%
PPI-C+A	53.6%	54.3%	42.7%	28.2%	30.5%	34.0%
Other	4%	4%	7%	8%	7%	9%
7 days	31.3%	28.1%	24.7%	16.7%	7.8%	1.8%
10 days	48.3%	52.7%	55.9%	46.4%	46.9%	43.9%
14 days	20.5%	19.2%	19.4%	36.8%	45.3%	54.2%
Low dose PPI [3]	62%	57%	47%	36%	39%	28.5%
Standard dose PPI	19%	25.5%	26.5%	24.5%	24%	29%
High dose PPI	19%	18%	26%	39%	37%	43%
Mean omeprazole equivalent dose of PPI (mg)						
All regions	58	63	72	79	73	75
Centre	86	97	122	122	46	28
East	45	46	52	54	49	51
North	37	39	58	69	105	105
South-east	43	48	63	82	102	111
South-west	79	76	77	88	80	100

C – clarithromycin, M – metronidazole, T – tinidazole, A – amoxicillin, D – doxycycline, B – bismuth salts, Tc – tetracycline, PPI: proton-popm-inhibitor, [1]quadruple therapy given in a concomitant way, [2]quadruple therapy given in a sequential way, [3]Low dose PPI – 4.5 to 27 mg omeprazole equivalents, b.i.d., Standard dose PPI – 32 to 40 mg omeprazole equivalents, b.i.d, High dose PPI – 54 to 128 mg omeprazole equivalents, b.i.d.

Supplementary Table 4. Effectiveness of eradication treatments (per-protocol analysis) according to antibiotic resistance pattern in naïve patients.

	No resistance			Clarithromycin			Metronidazole			Levofloxacin			Dual (C + M)		
	E	N	%E	E	N	%E	E	N	%E	E	N	%E	E	N	%E
PPI+C+A	306	345	89	10	23	43.5	114	137	83	29	41	71	4	7	57
PPI+C+A+Mconc	32	34	94	10	11	91	9	11	82	5	6	83	4	5	80
PPI+C+M	16	20	80			NA			NA			NA			NA
PPI+C+A+Tseq	193	218	88.5	25	29	86	185	218	85	156	172	91	104	123	85
PPI+C+A+B	3	3	100			NA			NA			NA			NA
PPI+C+A+Mseq	31	36	86	5	7	71	16	27	59	5	6	83	5	8	62.5
PPI+A+M	43	49	88	21	25	84	4	5	80	5	5	100	1	1	100
PPI+A+L	5	5	100	5	5	100	12	14	86			NA	11	13	85
PPI+Pylera®	23	26	88.5	6	7	86	19	22	86	18	19	95	9	12	75
PPI+C+A+T	22	24	92	24	24	100	24	24	100	21	22	95.5	14	14	100
PPI+M+Tc+B	3	3	100	9	10	90	6	6	100	2	3	67	5	5	100

E – eradication (number of cured patients), N – total resistant patients, NA – not applicable/unknown, PPI – proton pump inhibitor, Conc – concomitant, Seq – sequential, C – clarithromycin, M – metronidazole, A – amoxicillin, L – levofloxacin, B – bismuth salts, Tc – tetracycline.