# Gastro Highlights 2023
# Dyspepsie, Ulcuserkrankungen, Helicobacter pylori

9. Dezember 2023

Michael Gschwantler

- H.p.–Epidemiologie
- H.p. und Magenkarzinom
- H.p. und andere Malignome
- H.p.-Eradikationstherapie 2023
- Autoimmungastritis
- Säureblockierende Medikamente
- Funktionelle Dyspepsie und Gastroparese
- Zöliakie

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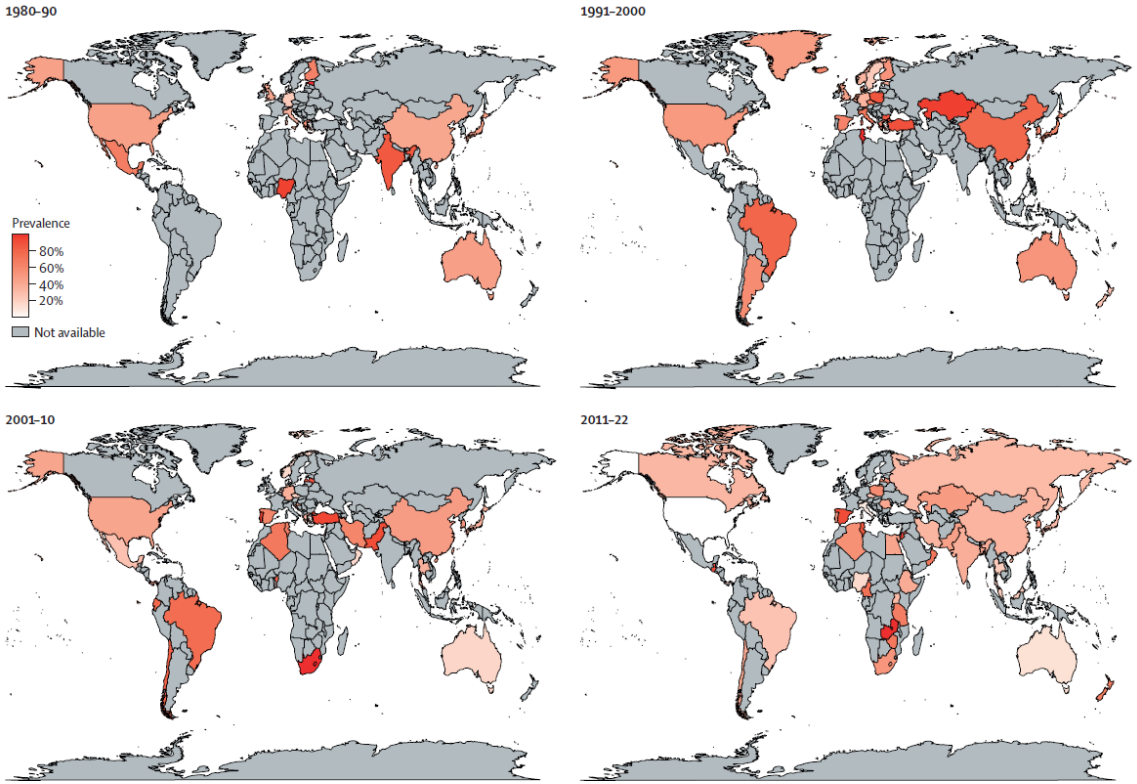
# Global prevalence of H.p. infection between 1980 and 2022

- **Methods:** 224 studies from 71 countries from all six WHO regions with 2 997 179 patients included




- **Key result:**
- The global prevalence of H.p.-infection decreased from **58.2%** (95% CI: 50.7-65.8) in the 1980-1990 period to **43.1%** (95% CI: 40.3-45.9) in the 2011-2022 period

Yunhao Li et al. Lancet Gastroenterol Hepatol 2023; 8: 553-564

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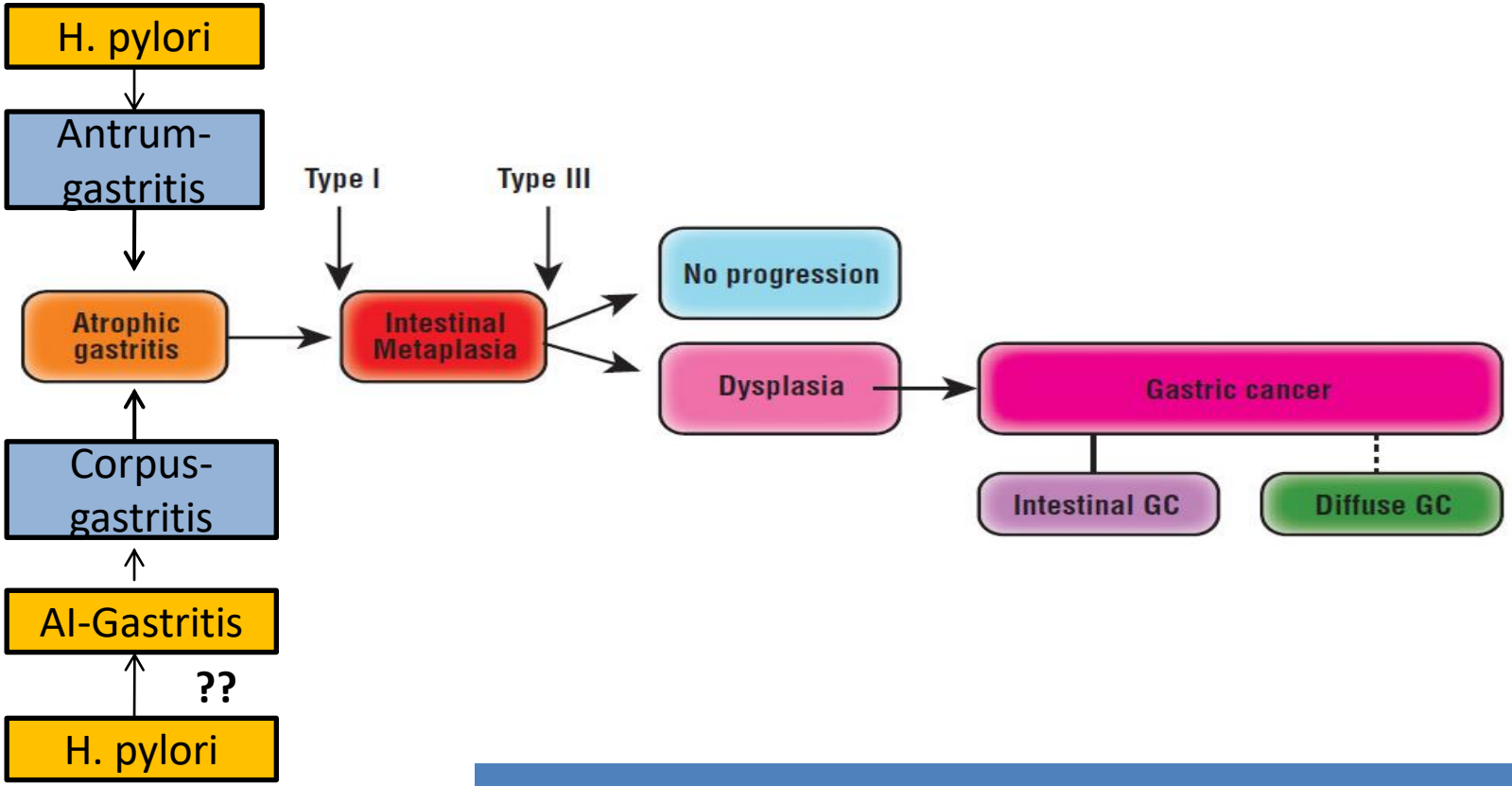
# Premalignant stages of gastric cancer („Correa Cascade“)




nach Busuttil RA et al. J Gastroenterol Hepatol 2009; 24: 193-201

# Gastric intestinal metaplasia

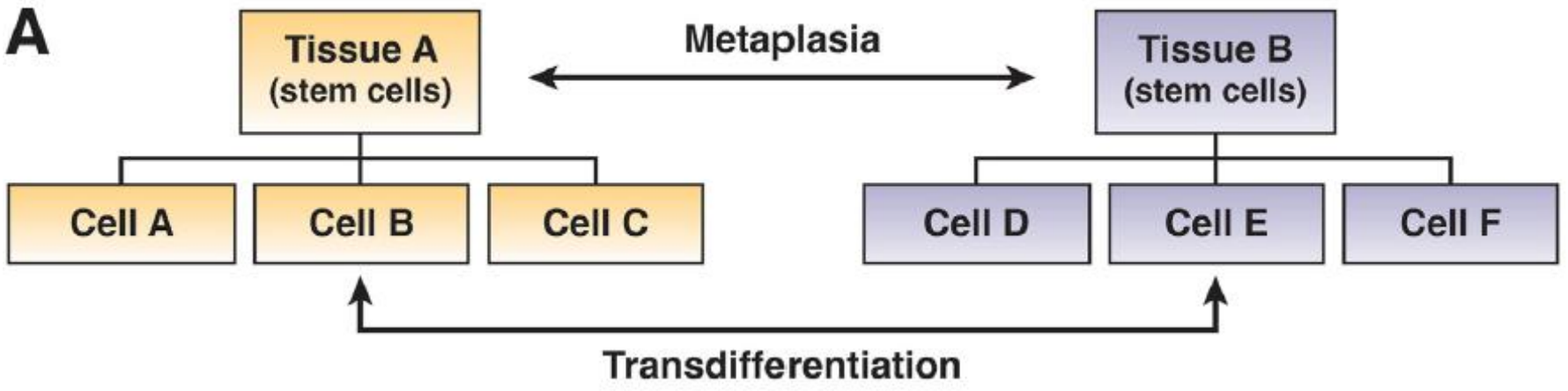
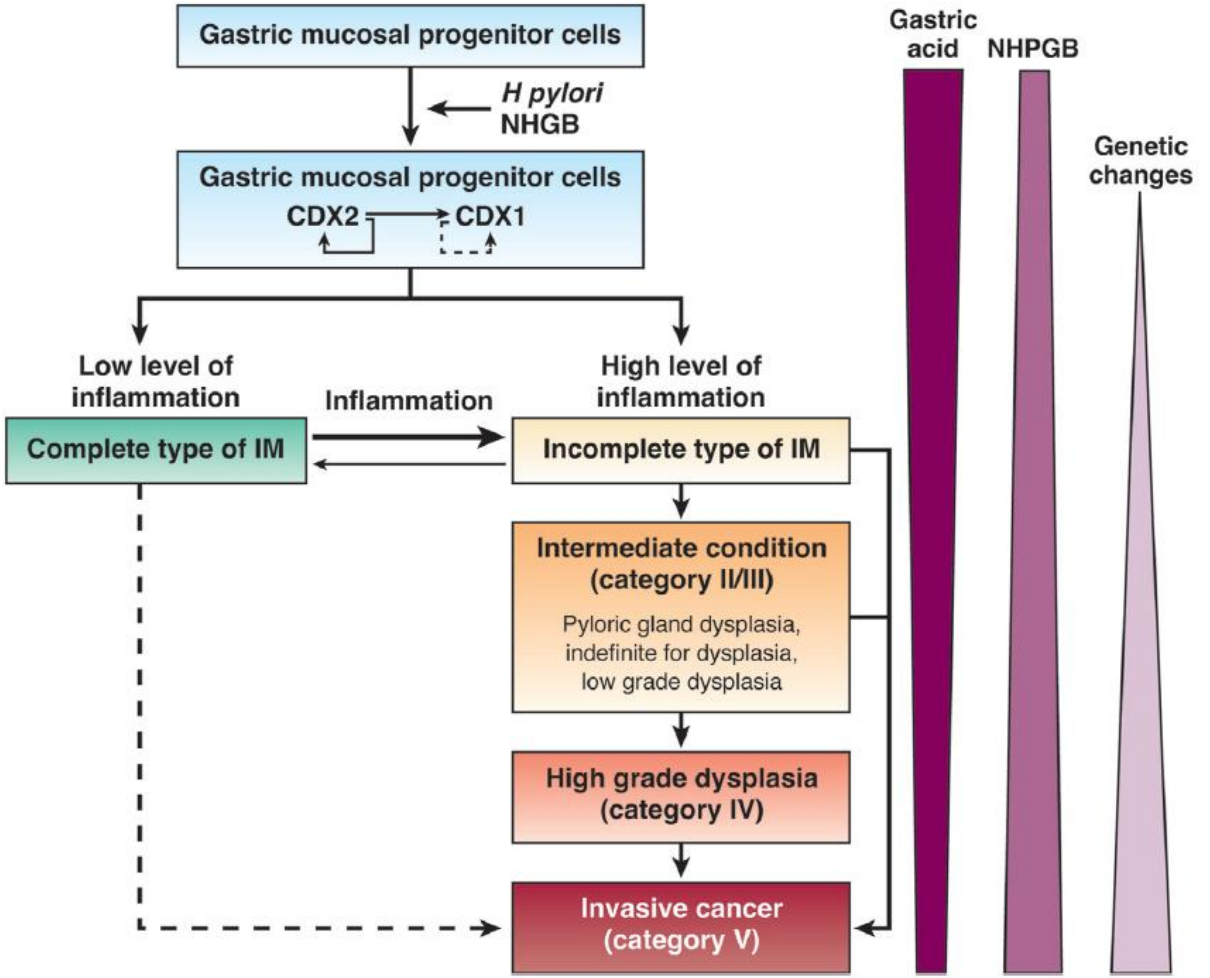



**Table 1.** Subtype of GIM

| Subtype | Mucin subtype | Mucin phenotype | Goblet cells | Absorptive enterocyte | Paneth cells |
|---|---|---|---|---|---|
| Complete | Type I | Gastric (MAC5AC)<br>Sialomucin (MAC2) | ++ | ++ | ± |
| Incomplete | Type II<br>Type III | Sialomucin(MAC2)<br>Sulfomucin(MAC2) | ++<br>+ | +<br>± | -<br>- |

Sugano K et al. Gastroenterology 2023 in press

# Premalignant stages of gastric cancer („modified Correa Cascade“)




Sugano K et al. Gastroenterology 2023 in press

# H. pylori, homologous-recombinant genes, and gastric cancer

- **Design:** retrospective analysis of BioBank Japan
- **Patients:** 10,462 patiens with gastric cancer and 38,153 controls
- **Genetic analysis:** 27 cancer predisposing genes were analysed; nine were associated with the risk of gastric cancer (*APC, ATM, BRCA1, BRCA2, CDH1, MLH1, MSH2, MSH6,* and *PALB2*)

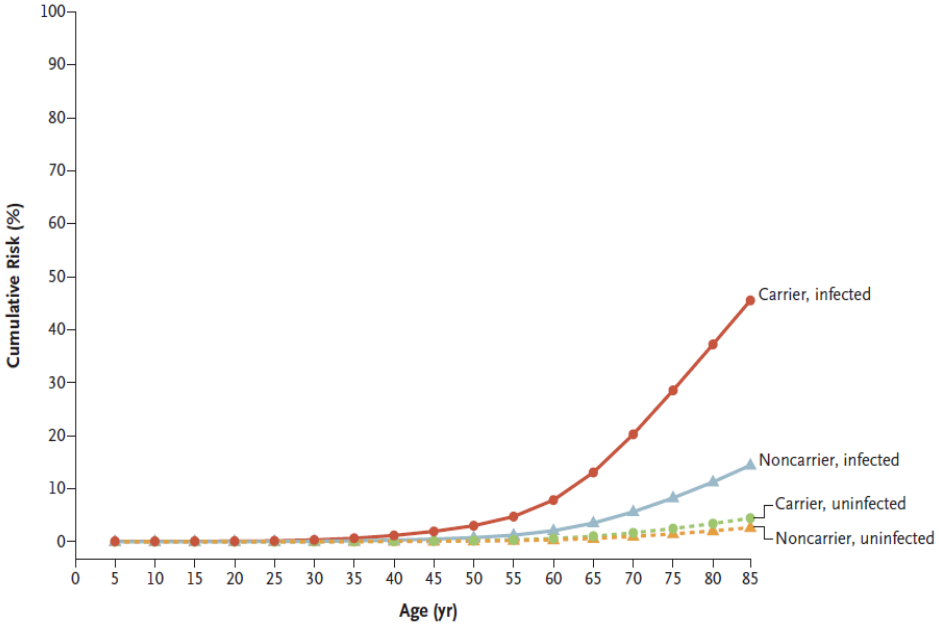
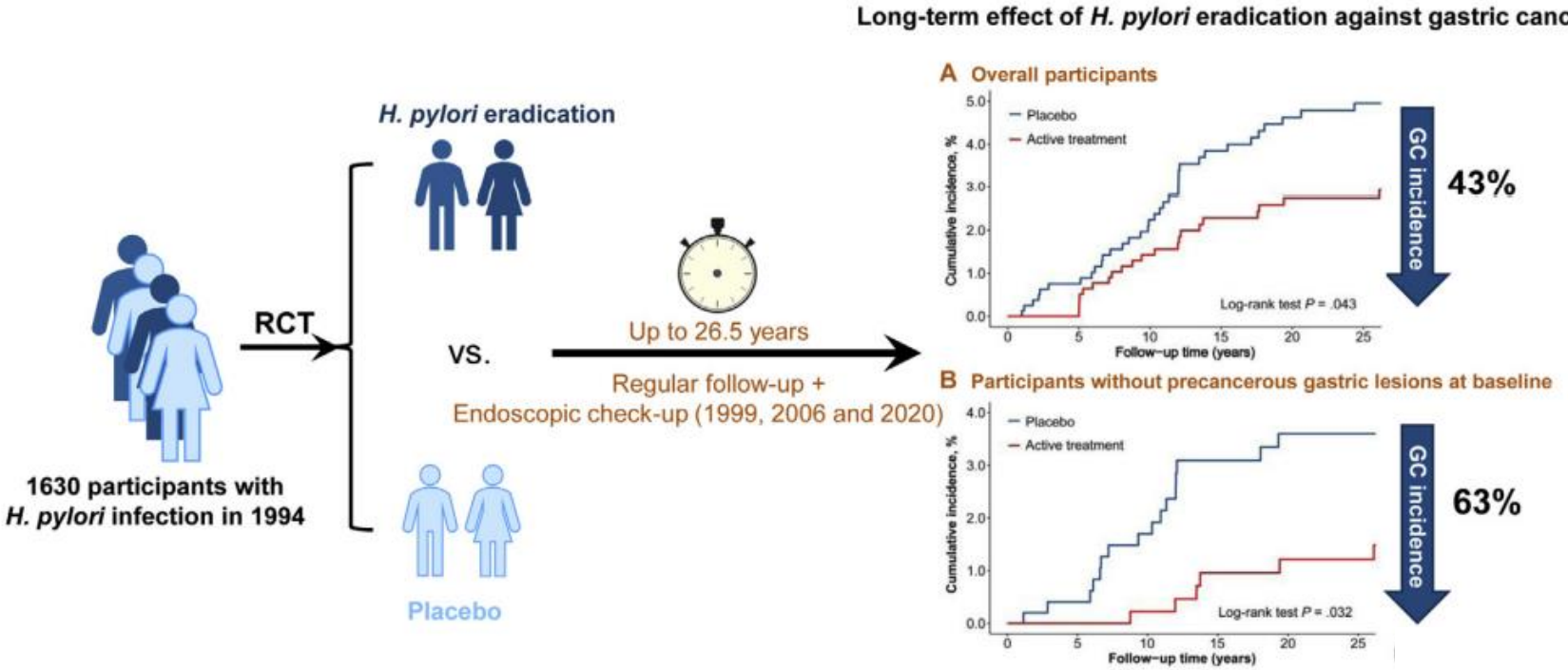



**Figure 2. Cumulative Risk of Gastric Cancer through 85 Years of Age According to Germline Pathogenic-Variant Carrier Status and *Helicobacter pylori* Infection Status.**

Cumulative risks of gastric cancer were estimated for carriers and noncarriers of germline pathogenic variants and persons who were positive and negative for *H. pylori* infection in the Hospital-based Epidemiologic Research Program at Aichi Cancer Center. Noncarriers were defined as persons without pathogenic variants in gastric cancer risk genes (*APC*, *ATM*, *BRCA1*, *BRCA2*, *CDH1*, *MLH1*, *MSH2*, *MSH6*, and *PALB2*). Only carriers of pathogenic variants in homologous-recombination (HR) genes (*ATM*, *BRCA1*, *BRCA2*, and *PALB2*) are shown in this figure because of the limited number of participants with variants in non-HR genes (*APC*, *CDH1*, *MLH1*, *MSH2*, and *MSH6*).

Yoshiaki U et al. N Engl J Med 2023; 388: 1181-1190

# Effect of Helicobacter pylori eradication on gastric cancer prevention

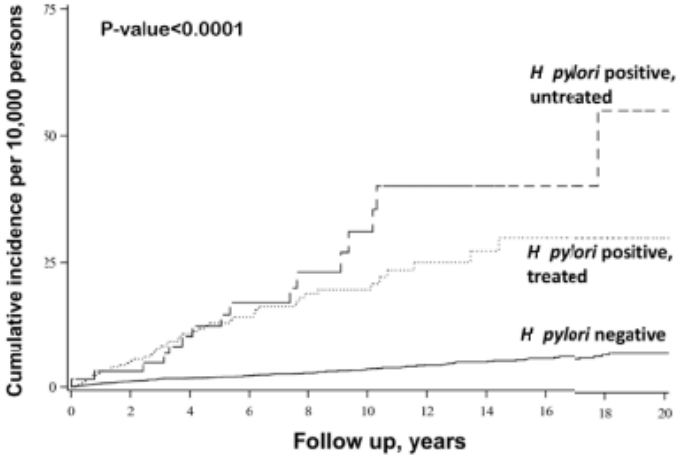



Yan L et al. Gastroenterology 2022; 163: 154-162

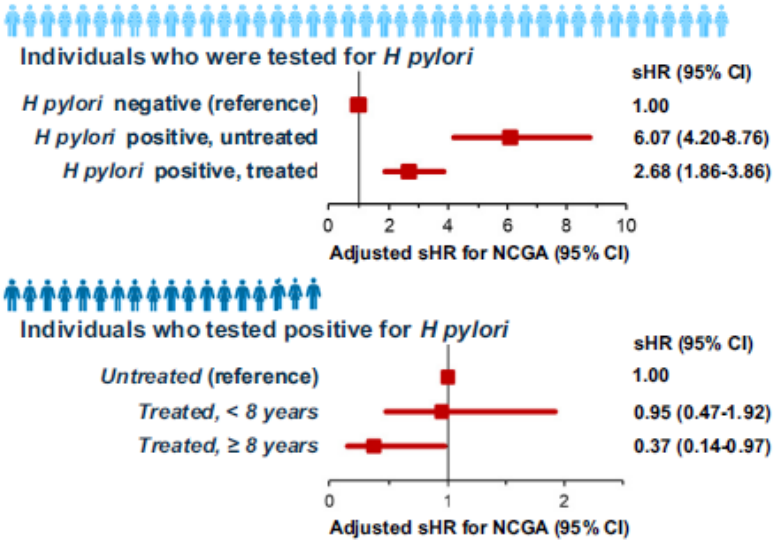
# Effect of H.p.-eradication on incidence of noncardia gastric carcinoma

- **Design:** retrospective cohort study of Kaiser Permanente Northern California members (USA)
- **Patients:** 716,567 patients with a history of H.p. testing and/or treatment between 1997 and 2015
- **Follow –up:** through December 31, 2018
- **Primary endpoint:** incidence of noncardia gastric adenocarcinoma

**Cumulative incidence of noncardia gastric adenocarcinoma***




**Relative risk of incident noncardia gastric adenocarcinoma****




* Cumulative incidence function curves with competing-risk **Subdistribution hazard model with competing risk, adjusted for age, sex, race and ethnicity, Charlson comorbidity index, history of smoking, and family history of stomach cancer. Abbreviations: sHR, subdistribution hazard ratio; CI, confidence interval

Li D et al. Gastroenterology 2023; 165: 391-401

# Impact of H.p.-eradication on risk of gastric cancer after endoscopic resection of dysplasia

- **Design:** retrospective population-based nation-wide cohort study
- **Patients:** 69,722 patients who underwent endoscopic resection of dysplasia between 2010 and 2020;
- **H.p.-eradication:** 49.5% of patients
- **Follow –up:** median 5.6 years
- **Primary endpoint:** incidence of gastric cancer
- **Main limitation:** no information about H.p.-status; simply treated and untreated patients were compared; i.e.: untreated group included both H.p.-neg patients and H.p.-pos patients, who did not receive treatment
- **Main finding:** gastric cancer risk -16% after 3 years and -20% after 5 years

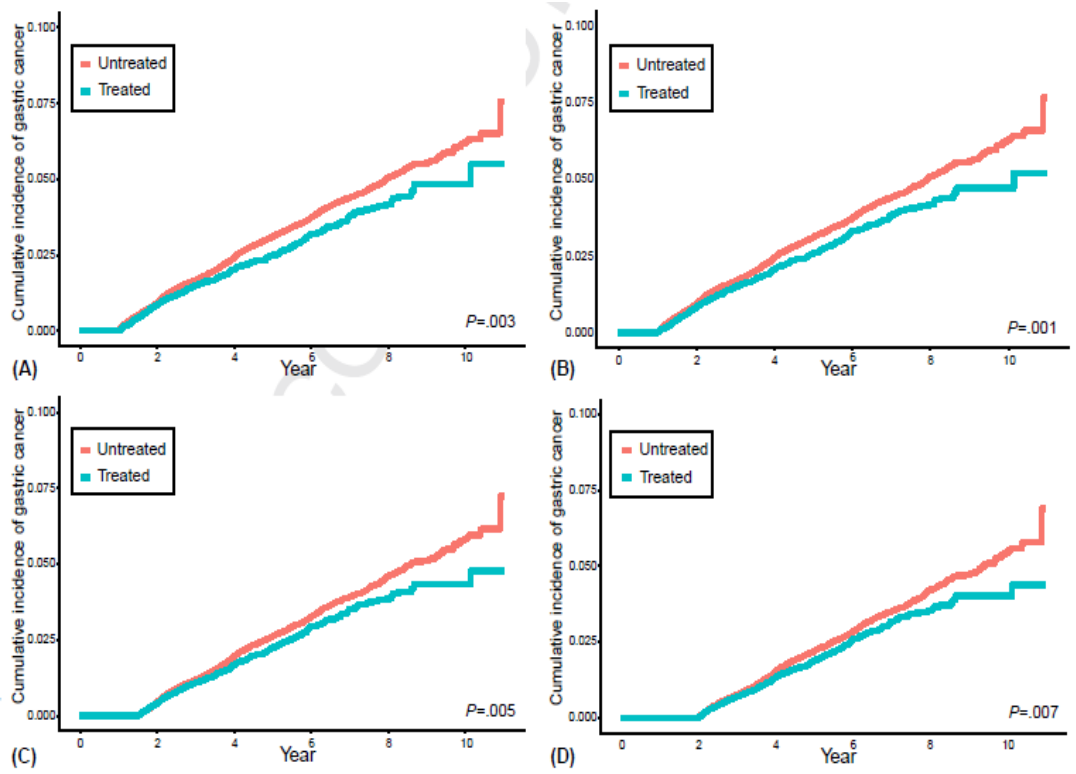



**Figure 2.** Cumulative probability of gastric cancer after endoscopic resection according to *Helicobacter pylori* treatment at the (*A*) 6-month, (*B*) 12-month, (*C*) 18-month, and (*D*) 24-month landmark analysis

Yoo HW et al. Gastroenterology 2023; in press

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# Effectiveness of H.p.-eradication in early-stage gastric MALT lymphoma

- **Design:** metaanalysis
- **Studies:** 61 studies were included; 46 were prospective and 15 were retrospective uncontrolled, single-arm, observational studies
- **Patients:** 2,936 H.p.-positive early-stage gastric MALT lymphoma patients included
- **Primary endpoint:** rate of complete remission (CR) of H.p.-positive early-stage gastric MALT lymphoma following bacterial eradication

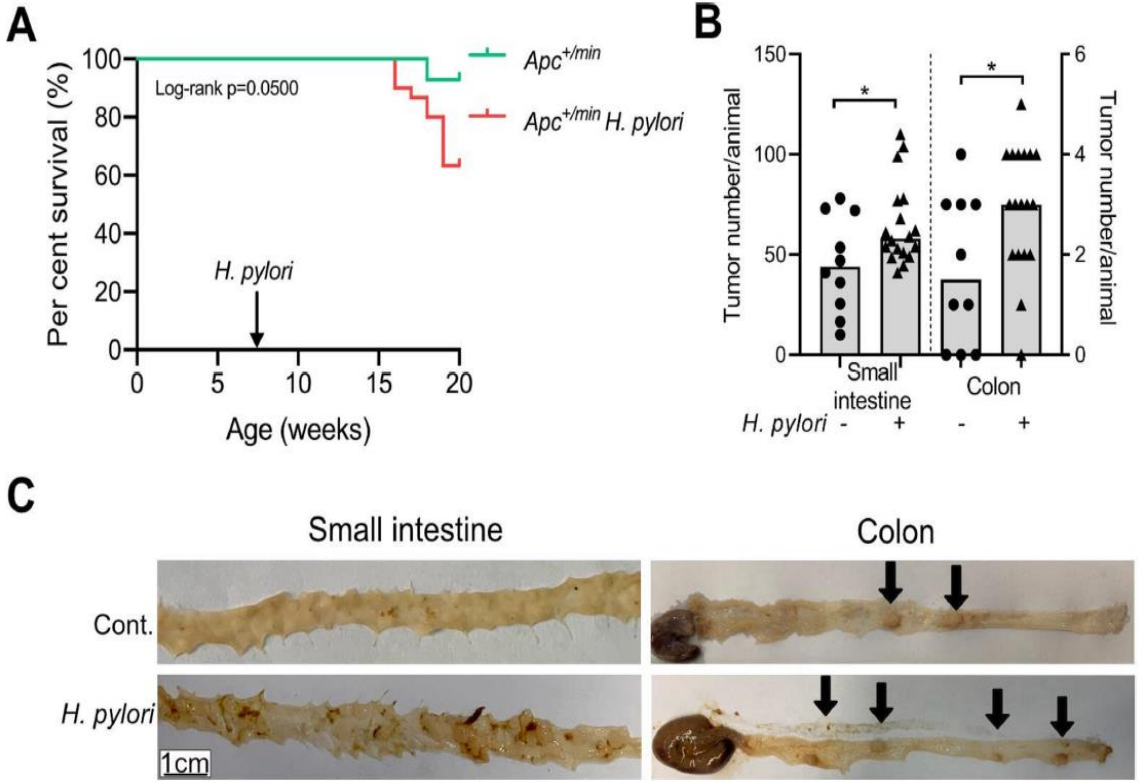
- **Results:**
- Pooled complete remission rate after H.p.-eradication: **75.18%** (95%CI: 70.45%-79.91%)
- Proportional meta-analysis indicated substantial heterogeneity in CR reported across studies ($I^2$=92%; $p < 0.01$)
- Meta-regression analysis identified statistically significant effect modifiers, including the proportion of patients with t(11;18)(q21;q21)-positive lymphomas and the risk of bias in each study

Lemos FFB et al. World J Gastroenterol 2023; 29(14): 2202-2221

# Evidence that H.p. promotes colorectal carcinogenesis

- **Design:** Apc-mutant mouse models; H.p-infection vs. no infection

- **Results:**
- H.p. accelerated tumour development in colon
- Unique H.p.-driven immune alteration signature
- Reduction in regulatory T cells and proinflammatory T cells
- H.p. induced pro-carcinogenic STAT3 signalling and loss of goblet cells
- Pro-inflammatory and mucus degrading microbial signatures
- Similiar immune and epithelial alterations were found in human colon biopsies in H.p.-infected patients
- Early antibiotic H.p.-eradication normalised the tumour incidence to the level of uninfected controls




Ralser A et al. Gut 2023; 72: 1258-1270

# Evidence that H.p. promotes colorectal carcinogenesis

## *Helicobacter pylori* infection alters gut virome by expanding temperate phages linked to increased risk of colorectal cancer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[4]Institute for Medical Microbiology, Immunology and Hygiene, TUM School of Medicine and Health, Department Preclinical Medicine, Technical University of Munich, Munich, Germany
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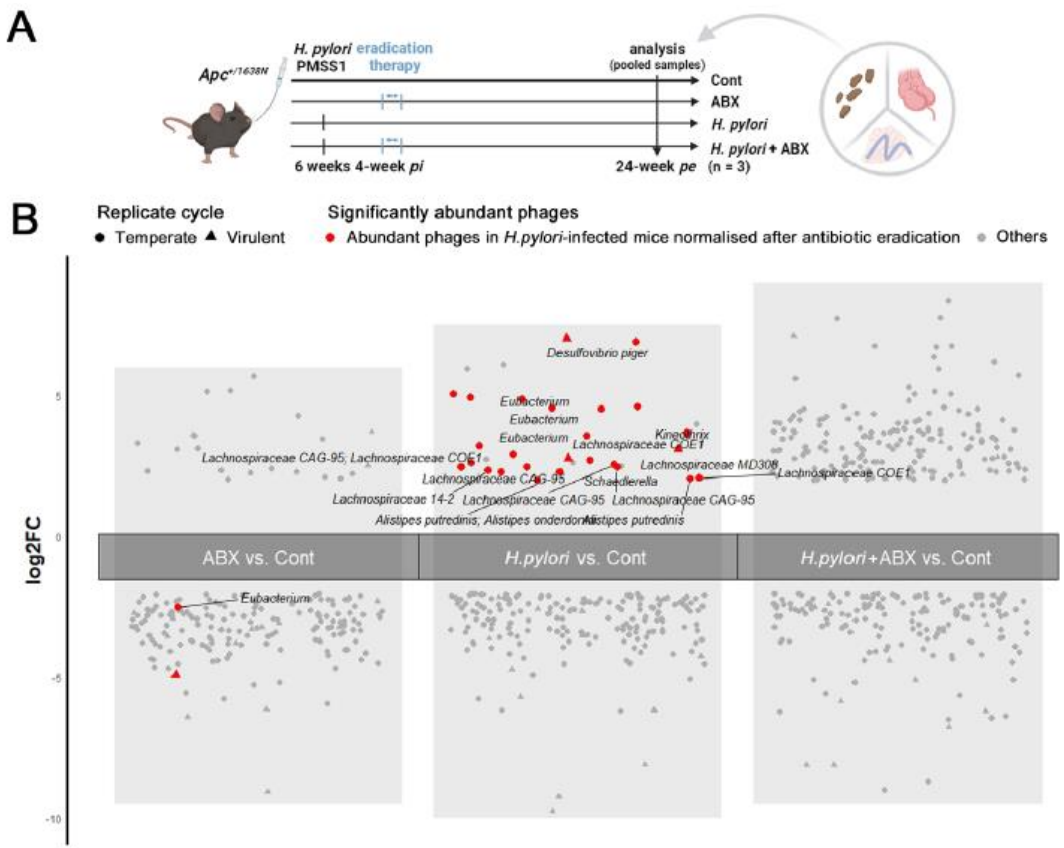


Peng X et al. Gut 2023; in press

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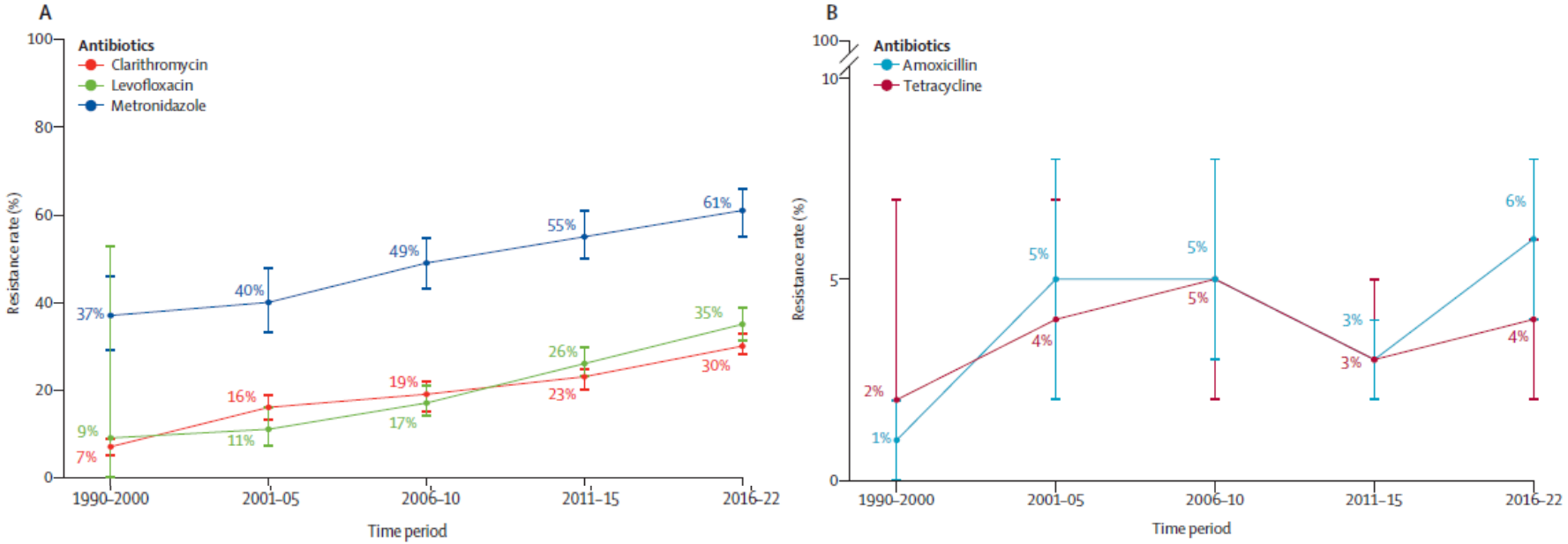
# Primary antibiotic resistance of H.p. in the Asia-Pacific region from 1990 to 2022

- **Design:** Metaanalysis of 351 studies



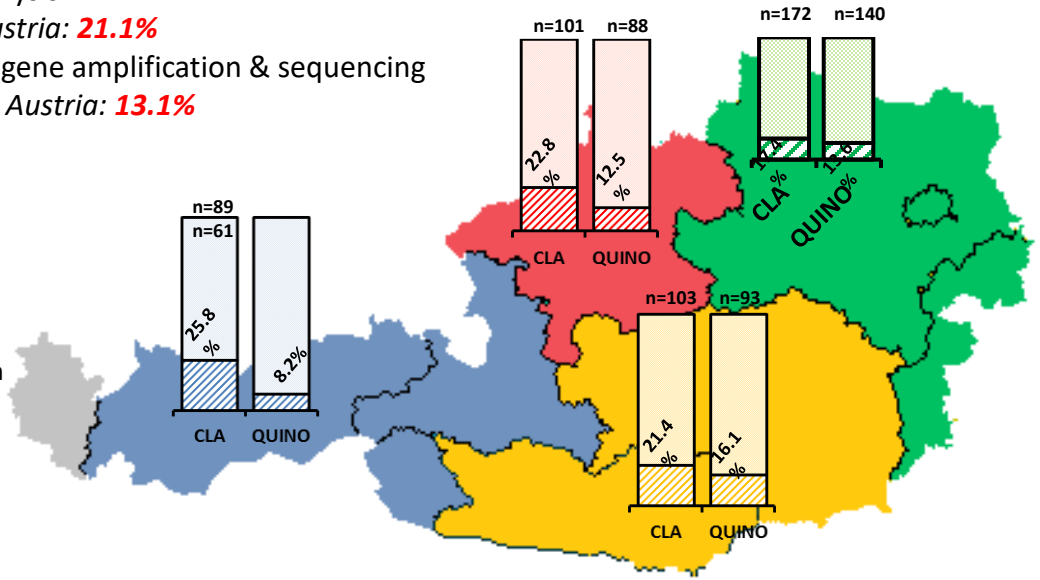

- **Conclusion:** A global policy to control and monitor the antibiotic resistance of H.p. is urgently needed

Hong TC et al. Lancet Gastroenterol Hepatol 2023; in press

# Prospective, multi-center clinical trial on geographic antimicrobial resistance patterns of Helicobacter pylori

- 2000 patients included
  - Histopathological investigation: 515 HP+ (26%)
  - 23S rRNA *H. pylori*-specific realtime PCR: 466 HP+ (90% confirmation rate of histology results)
- Antimicrobial resistance testing
  - **Clarithromycin**: 23S rRNA gene amplification & melting point analysis
    *Cla res. rate in Austria:* ***21.1%***
  - **Quinolone**: *gyrA* gene amplification & sequencing
    *Quino res. rate in Austria:* ***13.1%***

- 2 biopsy samples from each patient (antrum & corpus)
  - HP infection in both sites of the stomach **94.5%**
  - HP infection only in antrum **2%**
  - HP infection only in corpus **3.5%**




Bilgilier C et al. Clin Microbiol Infect 2018; 24: 267-272

# Maastricht VI/Florence consensus: treatment recommendations

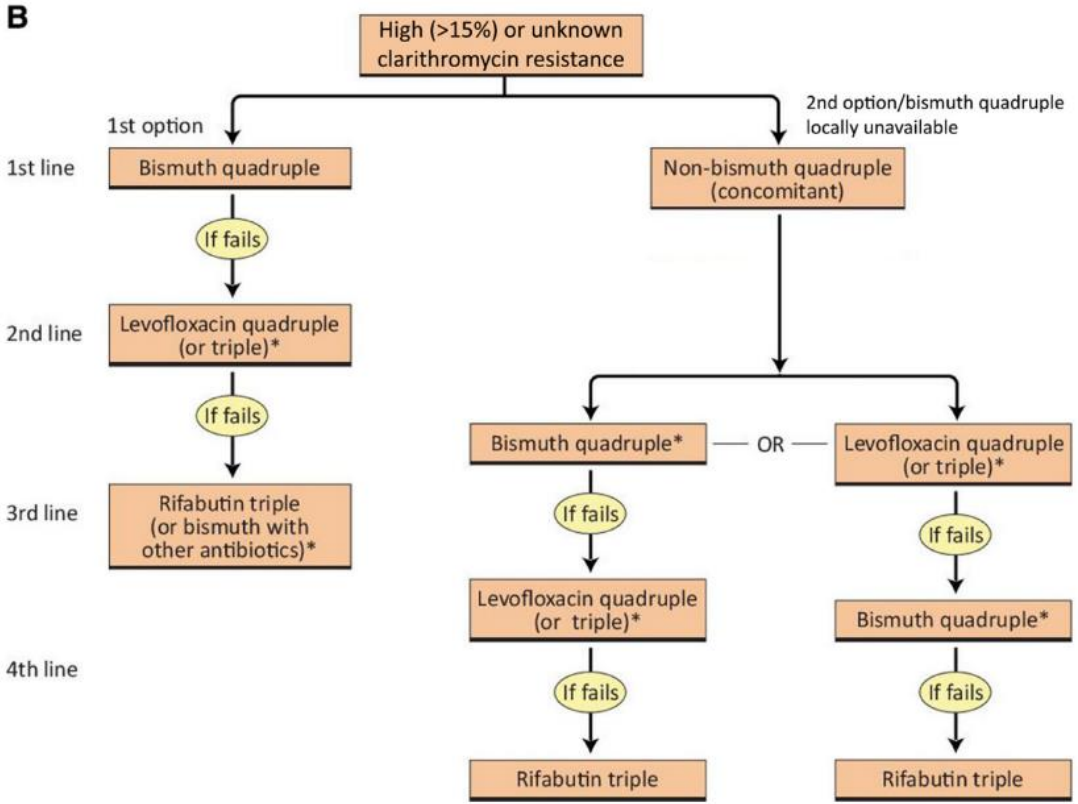



**Figure 1** Algorithm for empirical *Helicobacter pylori* eradication if individual antibiotic susceptibility testing is not available. Bismuth quadruple: proton pump inhibitor (PPI), bismuth, tetracycline and metronidazole. Clarithromycin triple: PPI, clarithromycin and amoxicillin; only use if proven effective locally or if clarithromycin sensitivity is known. Non-bismuth quadruple (concomitant): PPI, clarithromycin, amoxicillin and metronidazole. Levofloxacin quadruple: PPI, levofloxacin, amoxicillin and bismuth. Levofloxacin triple: the same but without bismuth. In cases of high fluoroquinolone resistance (>15%), the combination of bismuth with other antibiotics, high-dose PPI-amoxicillin dual or rifabutin, may be an option. *High-dose PPI or P-CAB (vonoprazan where available) plus amoxicillin may be another option. P-CAB, potassium-competitive acid blocker; PPI, proton pump inhibitor.

Malfertheiner P et al. Gut 2022; 71: 1724-1762

# *Helicobacter pylori* - Erstlinientherapie

- Bei nicht durchgeführter Resistenzbestimmung sollte als Erstlinientherapie bevorzugt eine Bismuth-haltige Quadrupeltherapie für 10-14 Tage eingesetzt werden (auch bei Penicillinallergie).
- Als Alternative kann eine 4-fach Therapie (Amoxicillin + Clarithromycin + Metronidazol + PPI) über 14 Tage erwogen werden.

Pylera® Kapseln

4 x 3 Kapseln täglich

(1 Kapsel = 140mg Bismuth subcitrat, 125mg Metronidazol, 125mg Tetracyclin)

+ PPI 2 x in Standarddosis

Therapiedauer: 10 Tage

Chefärztliche Bewilligung erforderlich

Bei Penicillinallergie möglich

Einnahme mit/nach dem Essen verbessert Verträglichkeit

Amoxicillin 2 x 1000 mg

+

Clarithromycin 2 x 500 mg

+

Metronidazol 2 x 500 mg

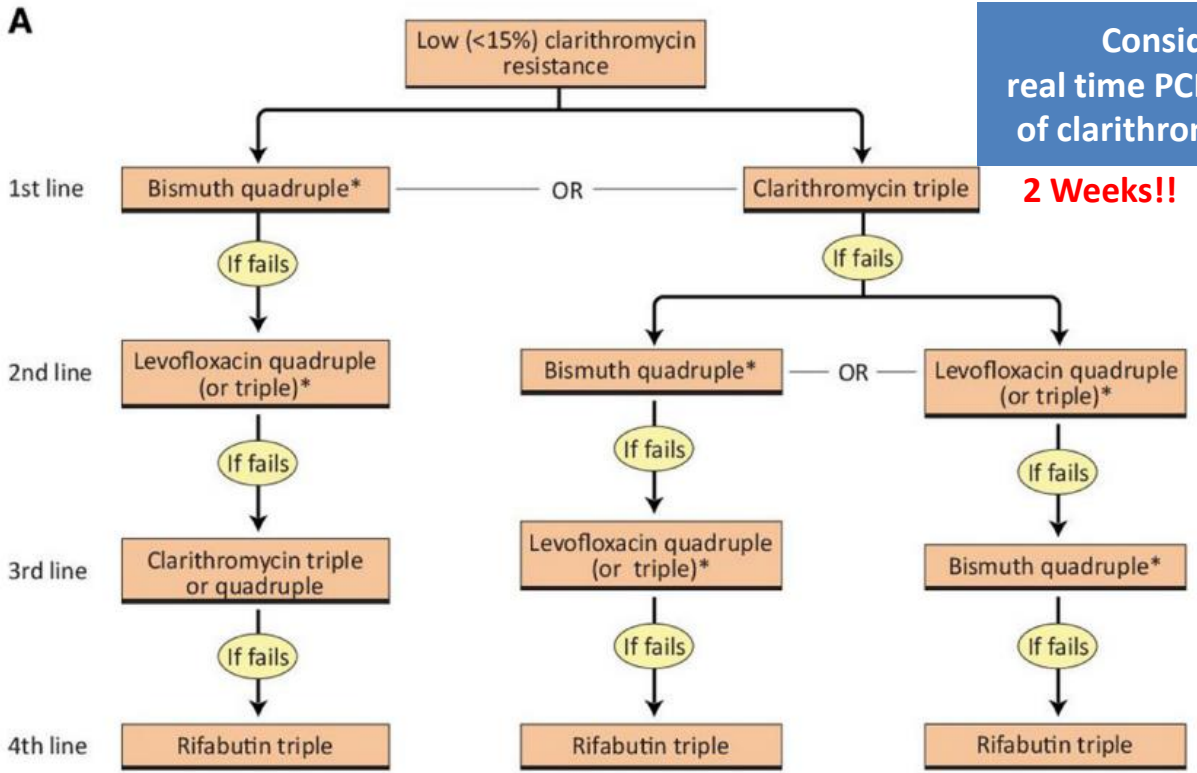
+

PPI 2 x in Standarddosis

Therapiedauer: 14 Tage

*Malfertheiner P et al. Gut 2022; 71:1724-1762.*
*Fischbach W et al. Z Gastroenterol 2023; 61(5): 544-606.*

# Maastricht VI/Florence consensus: treatment recommendations




**Consider routine real time PCR for assessment of clarithromycin resistance**

**2 Weeks!!**

**Figure 1** Algorithm for empirical *Helicobacter pylori* eradication if individual antibiotic susceptibility testing is not available. Bismuth quadruple: proton pump inhibitor (PPI), bismuth, tetracycline and metronidazole. Clarithromycin triple: PPI, clarithromycin and amoxicillin; only use if proven effective locally or if clarithromycin sensitivity is known. Non-bismuth quadruple (concomitant): PPI, clarithromycin, amoxicillin and metronidazole. Levofloxacin quadruple: PPI, levofloxacin, amoxicillin and bismuth. Levofloxacin triple: the same but without bismuth. In cases of high fluoroquinolone resistance (>15%), the combination of bismuth with other antibiotics, high-dose PPI-amoxicillin dual or rifabutin, may be an option. *High-dose PPI or P-CAB (vonoprazan where available) plus amoxicillin may be another option. P-CAB, potassium-competitive acid blocker; PPI, proton pump inhibitor.

Malfertheiner P et al. Gut 2022; 71: 1724-1762

# Bismuth quadruple therapy – three times vs. four times daily

- **Design:** retrospective analysis of an international, multicentre, prospective, non-interventional registry collecting information on the management of H.p. infection since 2013
- **Patients:** all Spanish adult patients (n = 3712) registered in the database from June 2013 to March 2021, who received bismuth quadruple therapy for 10 days
- **Primary endpoint:** eradication rate 4-times daily (4 x 3 tablets) vs. 3-times daily (3 x 4 tablets)

| | Total (n: 3536) | | Three capsules every 6 hours* (n: 2420) | | Four capsules every 8 hours† (n: 1116) | | |
|---|---|---|---|---|---|---|---|
| mITT | Cured (%) | 95% CI | Cured (%) | 95% CI | Cured (%) | 95% CI | P value |
| Overall | 3255 (92) | 91% to 93% | 2204 (91) | 90% to 92% | 1051 (94) | 93% to 96% | 0.001 |
| First line | 2468 (94) | 93% to 95% | 1602 (93) | 91% to 94% | 866 (96) | 94% to 97% | 0.002 |
| Second line | 537 (88) | 86% to 91% | 407 (88) | 85% to 91% | 130 (90) | 84% to 95% | 0.66 |
| Rescue therapy‡ | 250 (86) | 81% to 90% | 195 (86) | 81% to 91% | 55 (85) | 75% to 94% | 0.84 |

Perez-Aisa A et al. Gut 2023; 72: 2031-2037

# *Helicobacter pylori* – Zweit-und Drittlinientherapie

- Die Zweitlinientherapie soll, unter Berücksichtigung einer vorliegenden Resistenztestung, mit einer Standard-Tripeltherapie oder einer Fluorochinolon-haltigen Tripel-Therapie über 14 Tage erfolgen.
- Bei fehlender Resistenztestung kann als Zweitlinientherapie eventuell das von den europäischen Guidelines alternative als Erstlinientherapie empfohlenen Regime eingesetzt werden.
- Nach Versagen einer Zweitlinientherapie sollen weitere Therapieversuche nur durch einen Spezialisten/eine Spezialistin nach Resistenztestung erfolgen.
- Zur Verminderung von Antibiotika assoziierten Durchfällen können bestimmte Probiotika oder Kombinationen von Probiotika erwogen werden.

*Malfertheiner P et al. Gut 2017; 66: 6-30.*
*Fischbach W et al. Z Gastroenterol 2023; 61(5): 544-606.*

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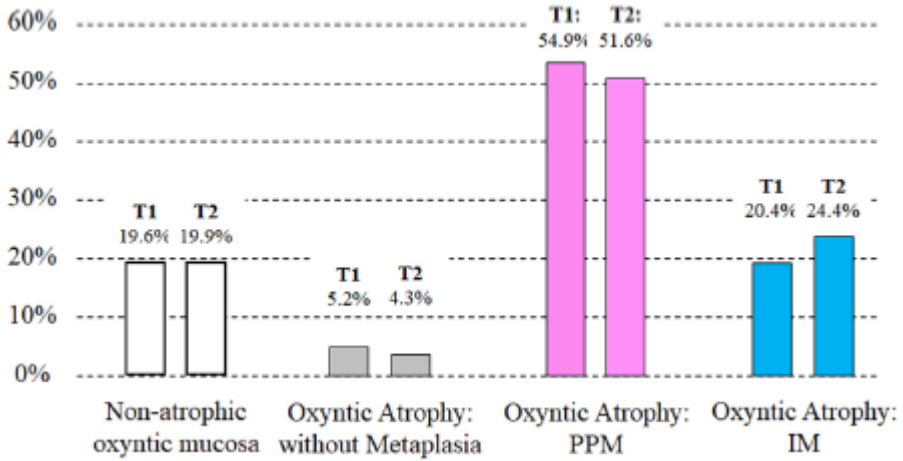
# Long-term natural history of H.p.-neg. autoimmune gastritis

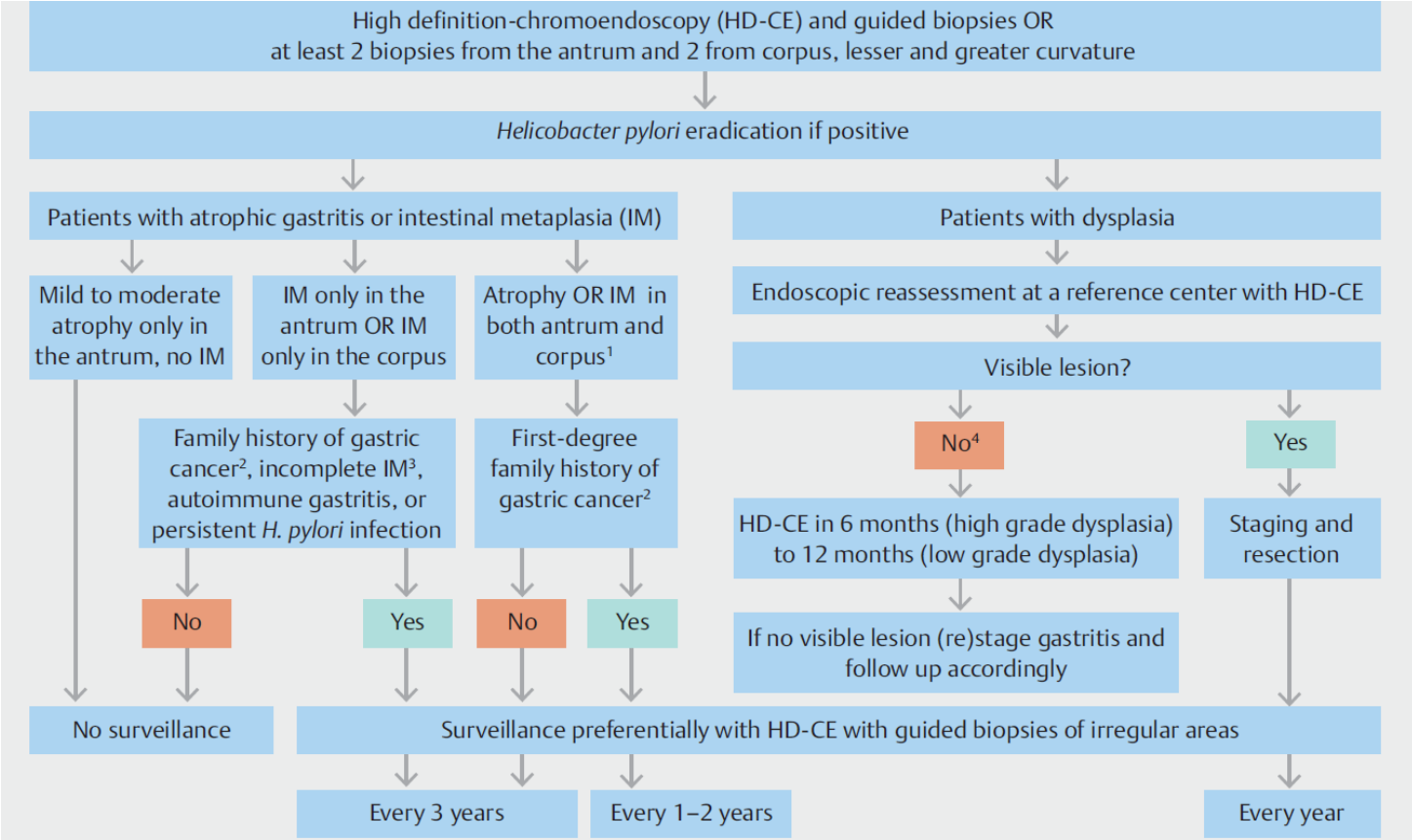
- **Design:** prospective cohort study
- **Patients:** 211 patients with autoimmune gastritis (AIG), all H.p. neg (tested by serology, histology, molecular biology)
- **Mean follow-up:** 7.5 years (SD: 4.4)
- **Primary endpoint:** histologic evolution

- **Results:** no excess risk of gastric or other malignancies was found over a cumulative follow-up time of 10,541 patient years, except for marginally significant thyroid cancer (SIR = 3.09; 95%CI: 1.001-7.20)




Rugge M et al. Gut 2023; 72: 30-38

# Management of precancerous conditions in the stomach (MAPS II)




1) OLGA III/IV bzw. OLGIM III/IV

2) Recommendations do not apply to hereditary diffuse gastric cancer

3) Additional studies are required before subtyping of IM can routinely be recommended

4) Slides should be sent to an expert gastrointestinal pathologist

ESGE, EHMSG, ESP, SPED

Pimentel-Nunes P et al. Endoscopy 2019; 51: 365-388

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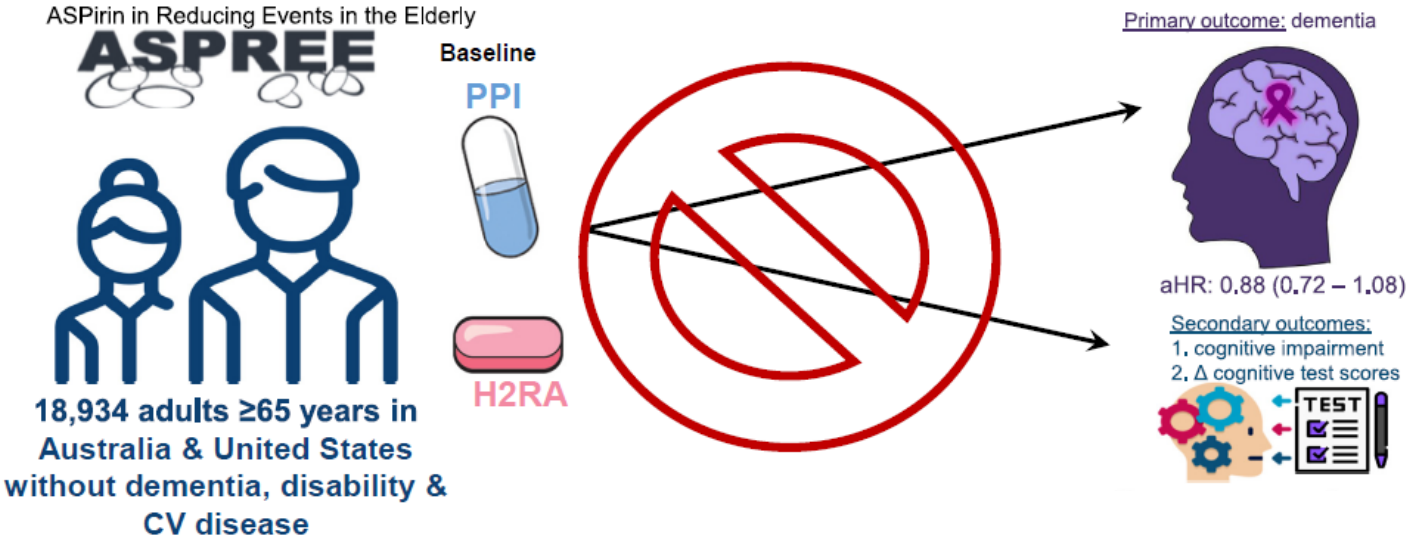
# Association of PPI with incident dementia and cognitive decline

- **Design:** post hoc analysis of „Aspirin in reducing events in the elderly (ASPREE)“, a randomized trial of aspirin in the USA and Australia
- **Patients:** 18,934 community-based adults ≥65 years of all races/ethnicities
- **Follow –up:** patients were followed up to 7 years
- **Primary endpoint:** incidence of dementia
- **Strength of study:** annual face-to-face visits to assess physical health and detailed cognitive testing




Mehta RS et al. Gastroenterology 2023; 165: 564-572

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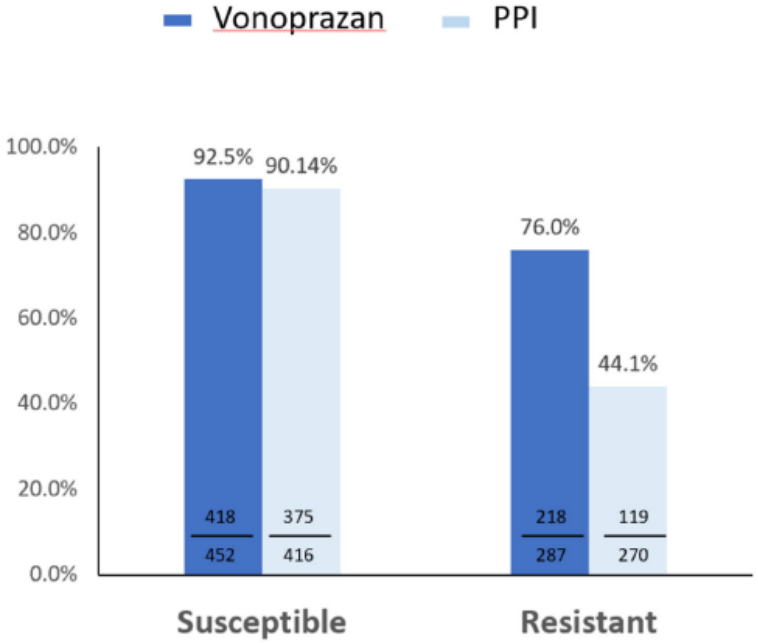
| | Dementia | | Dementia, probable AD | | Dementia, mixed | |
|---|---|---|---|---|---|---|
| | Nonuser | User | Nonuser | User | Nonuser | User |
| PPI | | | | | | |
| No. of cases (n = 572) | 449 | 123 | 191 | 47 | 258 | 76 |
| Age-adjusted HR (95% CI)[a] | 1 (referent) | 0.81 (0.67–1.00) | 1 (referent) | 0.77 (0.56–1.07) | 1 (referent) | 0.91 (0.70–1.17) |
| Multivariable HR (95% CI)[b] | 1 (referent) | 0.88 (0.72–1.08) | 1 (referent) | 0.82 (0.59–1.14) | 1 (referent) | 0.93 (0.71–1.21) |
| H2RA | | | | | | |
| No. of cases (n = 572) | 559 | 13 | 231 | 4 | 322 | 9 |
| Age-adjusted HR (95% CI)[a] | 1 (referent) | 1.05 (0.60–1.73) | 1 (referent) | 0.77 (0.29–2.08) | 1 (referent) | 1.20 (0.62–2.33) |
| Multivariable HR (95% CI)[b] | 1 (referent) | 1.00 (0.59–1.74) | 1 (referent) | 0.73 (0.27–1.99) | 1 (referent) | 1.15 (0.59–2.24) |

Mehta RS et al. Gastroenterology 2023; 165: 564-572

# Vanoprazan-based versus PPI-based H.p. eradication therapy

- **Design:** Metaanalysis of 13 RCTs (11 were first-line therapy trials, two were second- or third-line therapy trials



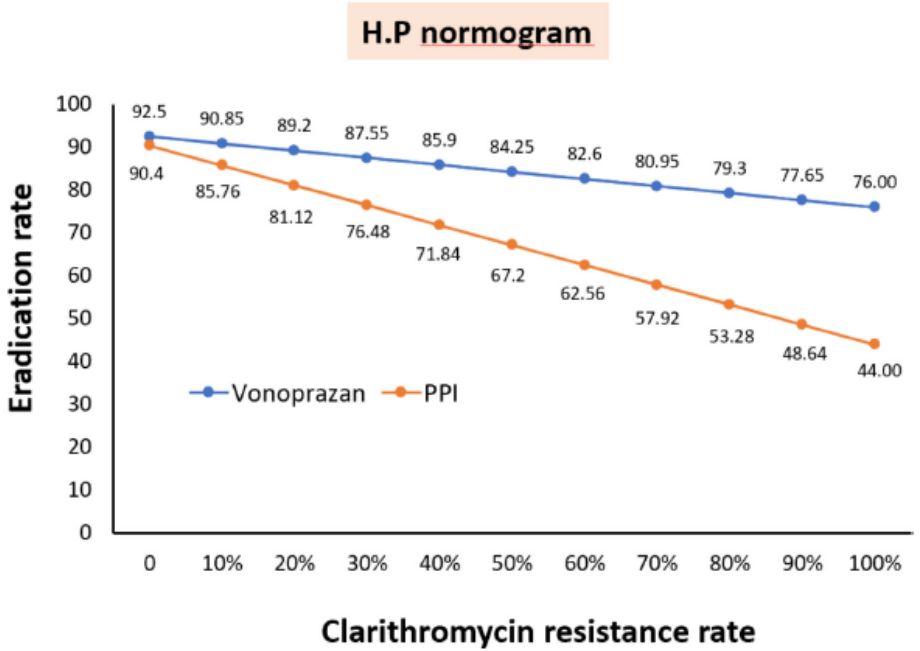
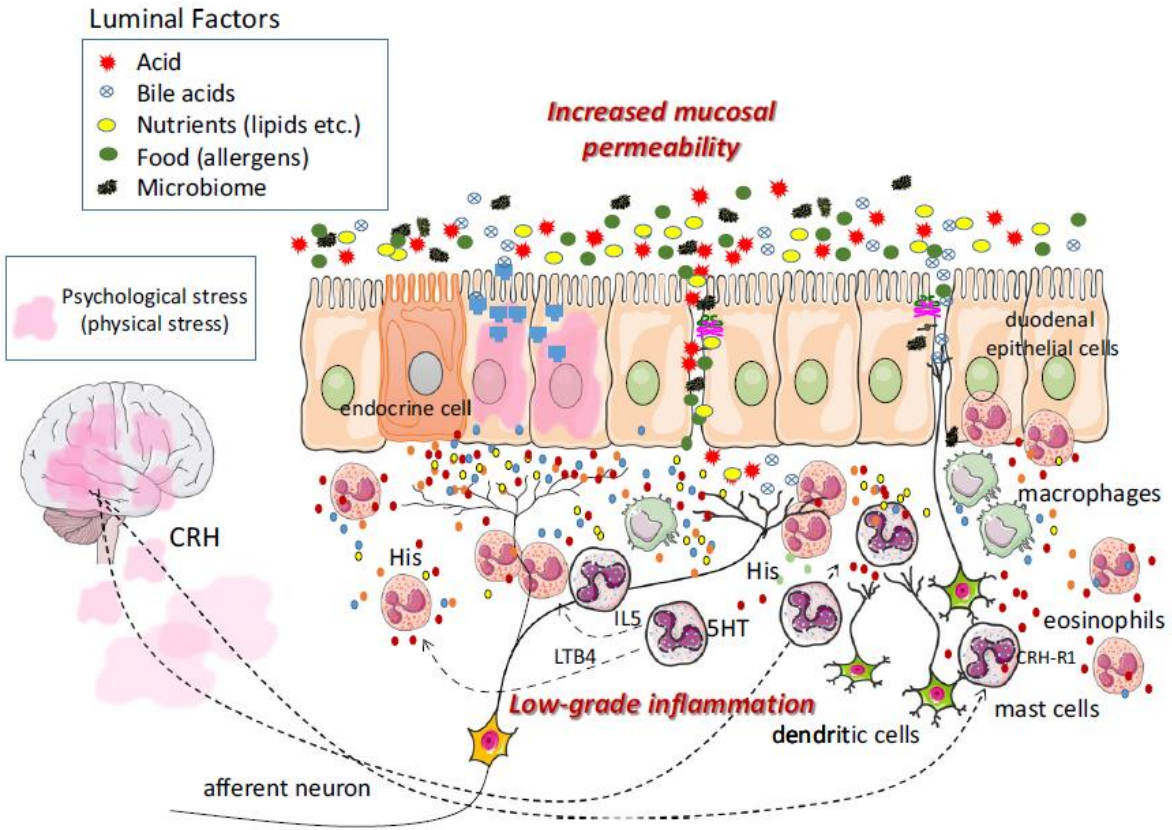




**Figure 2** Eradication rates of vonoprazan-based versus proton pump inhibitor (PPI)-based triple therapy in first-line treatment according to clarithromycin resistance and the predicted eradication rate in regions with different resistance rate (the Hp-normogram).

Chen PY et al. Gut 2023; in press

- H.p.–Epidemiologie
- H.p. und Magenkarzinom
- H.p. und andere Malignome
- H.p.-Eradikationstherapie 2023
- Autoimmungastritis
- Säureblockierende Medikamente
- Funktionelle Dyspepsie und Gastroparese
- Zöliakie

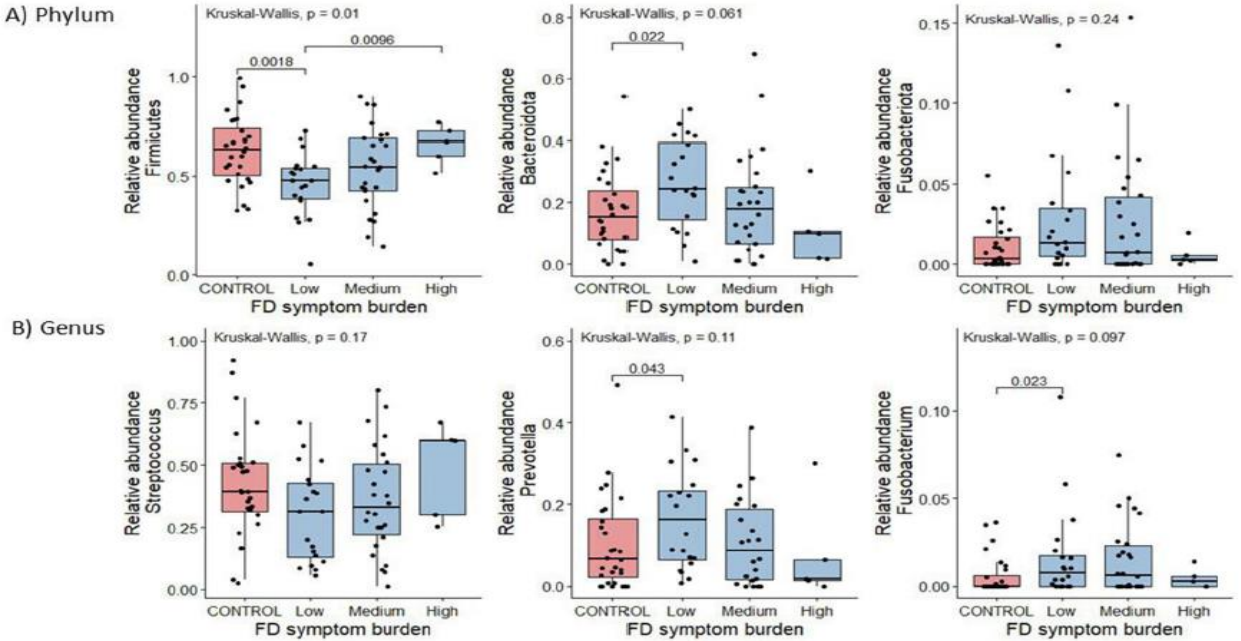
# The Duodenum in the Pathogenesis of Functional Dyspepsia




Miwa H et al. J Gastroenterol 2019; 54: 305-311

# Alterations of the duodenl microbiota in functional dyspepsia

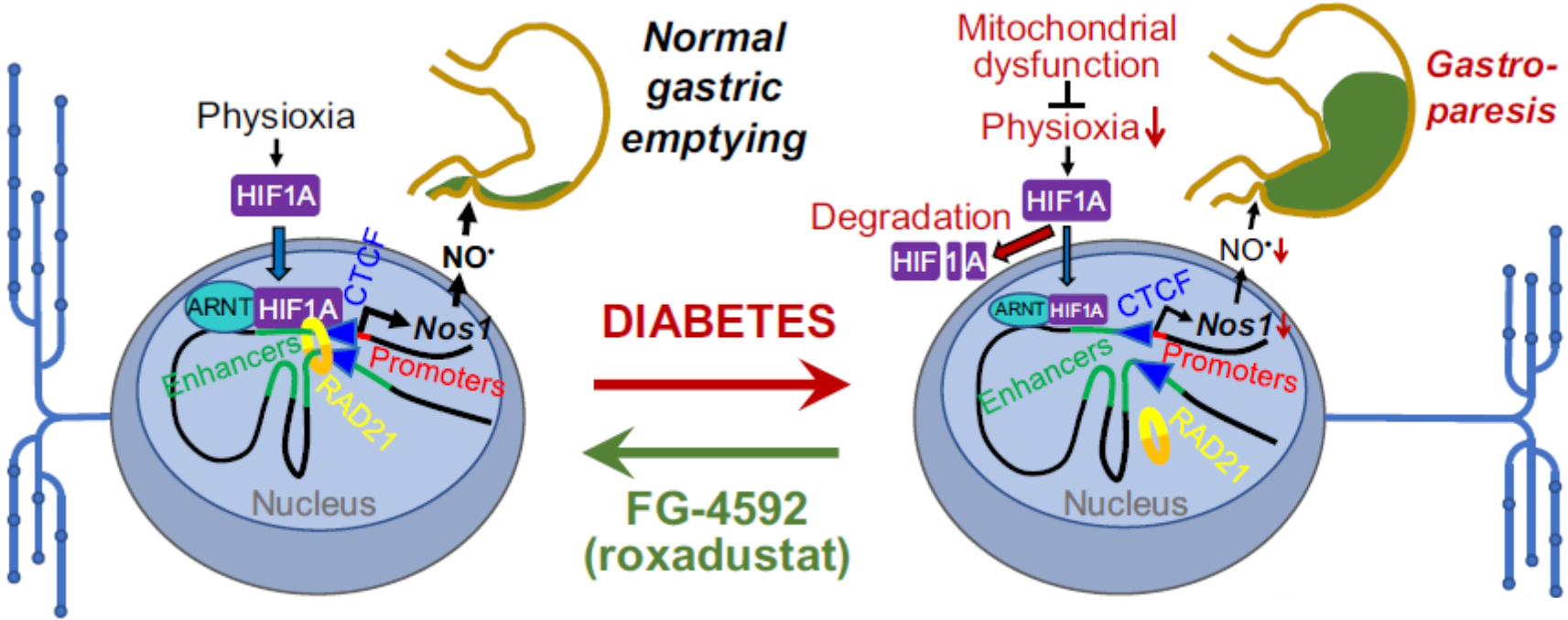
- **Design:** monocenter cohort study; Brisbane, Australia
- **Patients:** 56 patients with functional dyspepsia (FD) vs. 30 controls
- **Primary endpoints:** mucosa-associated microbiota (MAM) of the duodenum analysed via 16S rRNA gene amplicon sequencing




No association with diet

Shanahan ER et al. Gut 2023; 72: 929-938

# Hypoxia-inducible factor 1α stabilization restores epigenetic control of nitric oxide synthase 1 expression and reverses gastroparesis in female diabetic mice




Gao F et al. Gastroenterology 2023; 165: 1458-1474

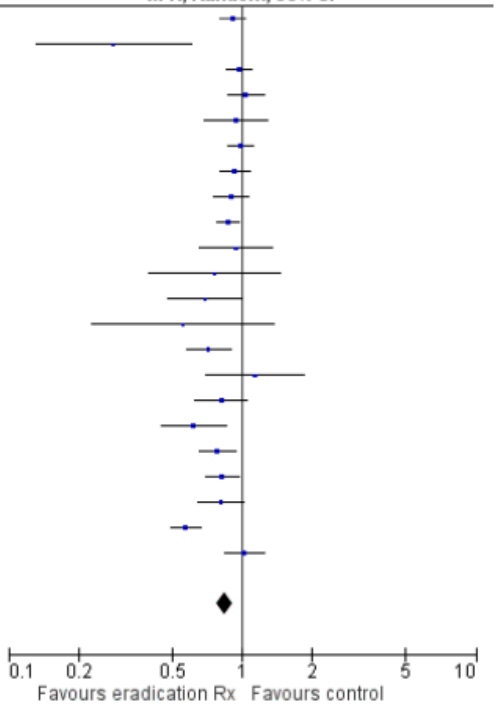
# Efficacy of H.p.-eradication for functional dyspepsia – Metaanalysis of RCTs

- 29 RCTs with a total of 6.781 patients included
- **Effect on symptom improvement:**

| Study or Subgroup | H. pylori eradication Rx Events | Total | Control Events | Total | Weight | Risk Ratio M-H, Random, 95% CI | Year |
|---|---|---|---|---|---|---|---|
| Blum 1998 | 119 | 164 | 130 | 164 | 6.7% | 0.92 [0.81, 1.03] | 1998 |
| Dhali 1999 | 6 | 32 | 20 | 30 | 1.0% | 0.28 [0.13, 0.60] | 1998 |
| Talley (ORCHID) 1999 | 103 | 135 | 112 | 143 | 6.6% | 0.97 [0.86, 1.11] | 1999 |
| Talley (USA) 1999 | 101 | 170 | 96 | 167 | 5.7% | 1.03 [0.86, 1.24] | 1999 |
| Bruley des Varannes 2001 | 49 | 129 | 50 | 124 | 3.7% | 0.94 [0.69, 1.28] | 2001 |
| Froehlich 2001 | 77 | 92 | 75 | 88 | 6.6% | 0.98 [0.87, 1.11] | 2001 |
| Koskenpato 2001 | 61 | 77 | 63 | 74 | 6.2% | 0.93 [0.80, 1.08] | 2001 |
| Alizadeh-Naeeni 2002 | 61 | 84 | 59 | 73 | 5.8% | 0.90 [0.76, 1.07] | 2002 |
| Malfertheiner 2003 | 312 | 534 | 178 | 266 | 6.9% | 0.87 [0.78, 0.98] | 2002 |
| Veldhuyzen van Zanten 2003 | 31 | 75 | 36 | 82 | 3.0% | 0.94 [0.65, 1.35] | 2003 |
| Gisbert 2004 | 13 | 34 | 8 | 16 | 1.3% | 0.76 [0.40, 1.46] | 2004 |
| Gonzalez Carro 2004 | 22 | 47 | 31 | 46 | 3.0% | 0.69 [0.48, 1.00] | 2004 |
| Martinek 2005 | 5 | 20 | 9 | 20 | 0.7% | 0.56 [0.23, 1.37] | 2004 |
| Ruiz Garcia 2005 | 46 | 79 | 64 | 79 | 5.0% | 0.72 [0.58, 0.89] | 2005 |
| Ang 2006 | 26 | 71 | 19 | 59 | 2.1% | 1.14 [0.70, 1.84] | 2005 |
| Mazzoleni 2006 | 30 | 46 | 36 | 45 | 4.4% | 0.82 [0.63, 1.05] | 2006 |
| Shi 2006 | 33 | 88 | 52 | 86 | 3.5% | 0.62 [0.45, 0.85] | 2006 |
| Lan 2011 | 62 | 98 | 78 | 97 | 5.7% | 0.79 [0.66, 0.94] | 2010 |
| Mazzoleni 2011 | 107 | 201 | 131 | 203 | 5.9% | 0.82 [0.70, 0.97] | 2011 |
| Xu 2013 | 105 | 262 | 66 | 134 | 4.8% | 0.81 [0.65, 1.02] | 2013 |
| Liu 2014 | 100 | 200 | 174 | 200 | 6.2% | 0.57 [0.50, 0.67] | 2014 |
| Yazdanbod 2015 | 99 | 186 | 90 | 173 | 5.4% | 1.02 [0.84, 1.25] | 2015 |
| **Total (95% CI)** | | **2824** | | **2369** | **100.0%** | **0.84 [0.78, 0.91]** | |
| Total events | 1568 | | 1577 | | | | |

Heterogeneity: Tau² = 0.02; Chi² = 67.54, df = 21 (P < 0.00001); I² = 69%

Test for overall effect: Z = 4.15 (P < 0.0001)




**NNT: 9**

Ford AC et al. Gut 2022; 71: 1967-1975

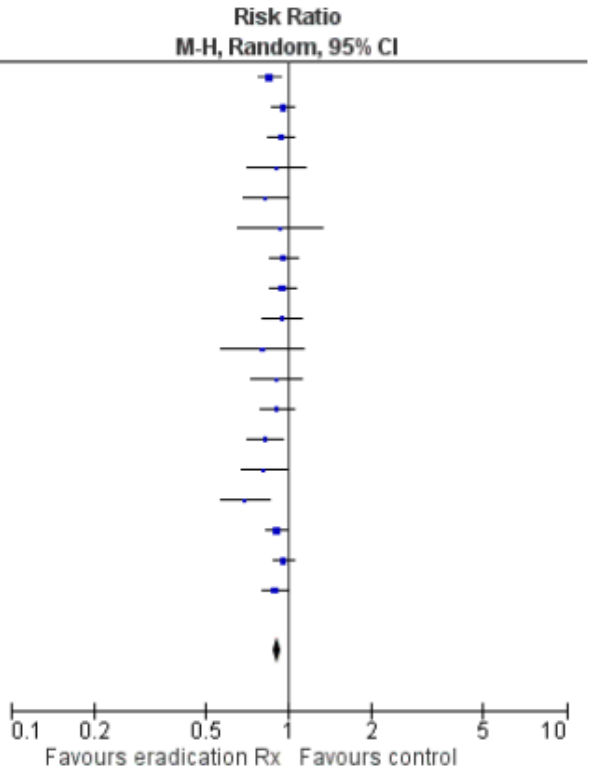
# Efficacy of H.p.-eradication for functional dyspepsia – Metaanalysis of RCTs

- 29 RCTs with a total of 6.781 patients included
- **Effect on symptom cure:**

| Study or Subgroup | H. pylori eradication Rx Events | Total | Control Events | Total | Weight | Risk Ratio M-H, Random, 95% CI | Year |
|---|---|---|---|---|---|---|---|
| McColl 1998 | 127 | 160 | 147 | 158 | 10.7% | 0.85 [0.78, 0.93] | 1998 |
| Talley (ORCHID) 1999 | 115 | 135 | 127 | 143 | 10.4% | 0.96 [0.88, 1.05] | 1999 |
| Talley (USA) 1999 | 128 | 170 | 134 | 167 | 6.9% | 0.94 [0.84, 1.05] | 1999 |
| Miwa 2000 | 35 | 50 | 31 | 40 | 1.6% | 0.90 [0.71, 1.16] | 2000 |
| Bruley des Varannes 2001 | 74 | 129 | 86 | 124 | 2.7% | 0.83 [0.68, 1.00] | 2001 |
| Hsu 2001 | 34 | 81 | 36 | 80 | 0.8% | 0.93 [0.66, 1.33] | 2001 |
| Alizadeh-Naeeni 2002 | 72 | 84 | 65 | 73 | 6.5% | 0.96 [0.85, 1.08] | 2002 |
| Malfertheiner 2003 | 338 | 534 | 177 | 266 | 7.8% | 0.95 [0.85, 1.06] | 2003 |
| Koelz 2003 | 67 | 89 | 73 | 92 | 3.8% | 0.95 [0.81, 1.11] | 2003 |
| Veldhuyzen van Zanten 2003 | 31 | 75 | 42 | 82 | 0.8% | 0.81 [0.57, 1.14] | 2003 |
| Ang 2006 | 49 | 71 | 45 | 59 | 2.2% | 0.90 [0.73, 1.12] | 2006 |
| Mazzoleni 2006 | 39 | 46 | 42 | 45 | 4.4% | 0.91 [0.79, 1.05] | 2006 |
| Shi 2006 | 65 | 88 | 77 | 86 | 4.5% | 0.82 [0.71, 0.95] | 2006 |
| Gwee 2009 | 31 | 41 | 38 | 41 | 2.5% | 0.82 [0.67, 0.99] | 2009 |
| Wu 2010 | 55 | 100 | 79 | 100 | 2.3% | 0.70 [0.57, 0.85] | 2010 |
| Lan 2011 | 86 | 98 | 94 | 97 | 12.5% | 0.91 [0.83, 0.98] | 2011 |
| Mazzoleni 2011 | 166 | 201 | 175 | 203 | 12.0% | 0.96 [0.88, 1.04] | 2011 |
| Sodhi 2013 | 185 | 280 | 204 | 276 | 7.5% | 0.89 [0.80, 1.00] | 2013 |
| **Total (95% CI)** | | **2432** | | **2132** | **100.0%** | **0.91 [0.88, 0.94]** | |
| Total events | 1697 | | 1672 | | | | |

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 18.21$, $df = 17$ ($P = 0.38$); $I^2 = 7\%$

Test for overall effect: $Z = 6.10$ ($P < 0.00001$)




**NNT: 14**

Ford AC et al. Gut 2022; 71: 1967-1975

# Efficacy and safety of drugs for gastroparesis – review and network meta-analysis

- **Studies:** a total of 29 RCTs was included; 25 RCTs were included in the analysis of improvement in global gastroparesis symptoms

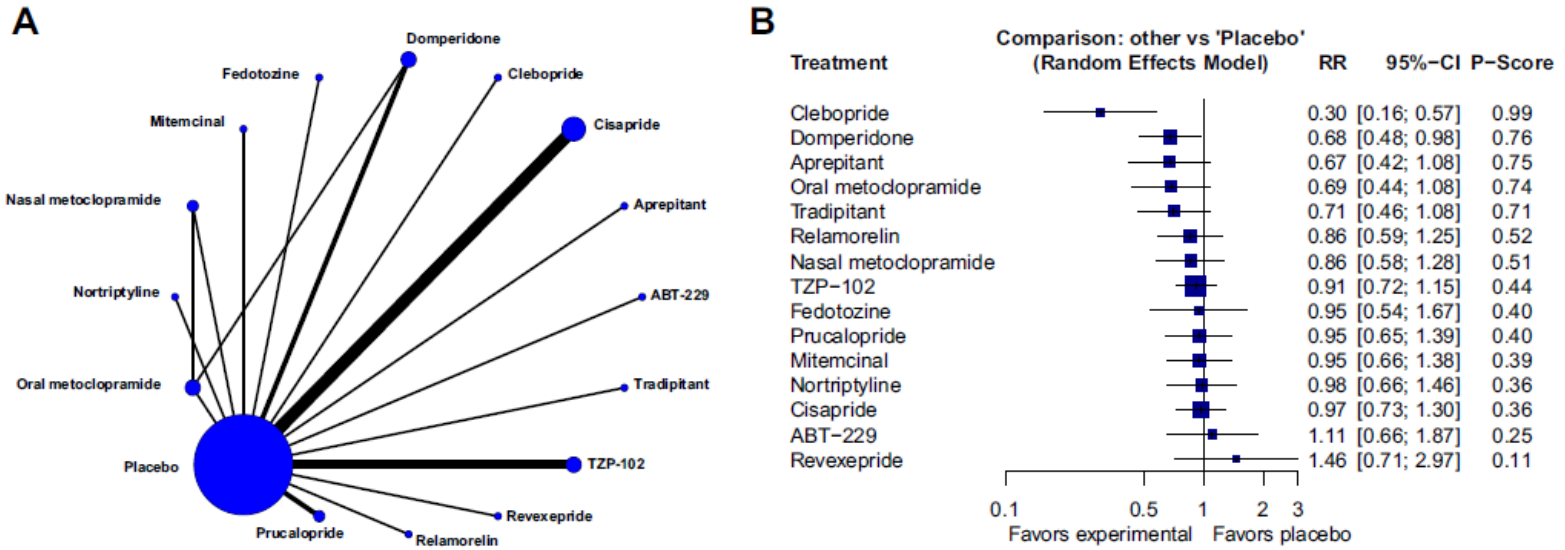



**Figure 1.** (*A*) Network plot for failure to achieve an improvement in global gastroparesis symptoms: all RCTs. *Circle* (node) size is proportional to the number of study participants assigned to receive each intervention. The *line width* (connection size) corresponds to the number of studies comparing the individual interventions. (*B*) Forest plot for failure to achieve an improvement in global gastroparesis symptoms: all RCTs. The P-score is the probability of each intervention being ranked as best in the network.

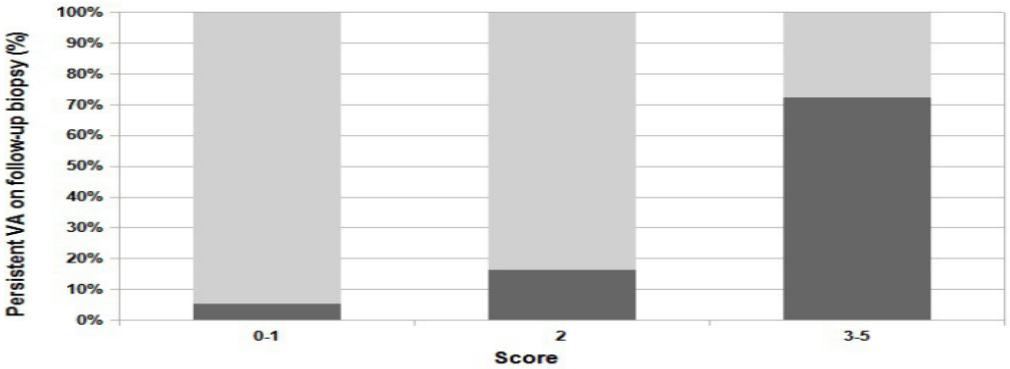
Ingrosso MR et al. Gastroenterology 2023; 164: 642-654

- H.p.–Epidemiologie
- H.p. und Magenkarzinom
- H.p. und andere Malignome
- H.p.-Eradikationstherapie 2023
- Autoimmungastritis
- Säureblockierende Medikamente
- Funktionelle Dyspepsie und Gastroparese
- Zöliakie

# Impact of persistent villous atrophy in coeliac disease

- **Design:** multicentre retrospective-prospective study
- **Patients:** 2211 patients consisting of a study cohort (cohort 1) and validation cohort (cohort 2)
- **Primary endpoints:**
  - Development of a score to predict persistent villous atrophy
  - Relationship between persistent villous atrophy and long-term outcome

| | Age at diagnosis ≥45 years | Classical presentation | No clinical response | Poor GFD adherence |
|---|---|---|---|---|
| Score points | 1 point | 1 point | 1 point | 2 points |



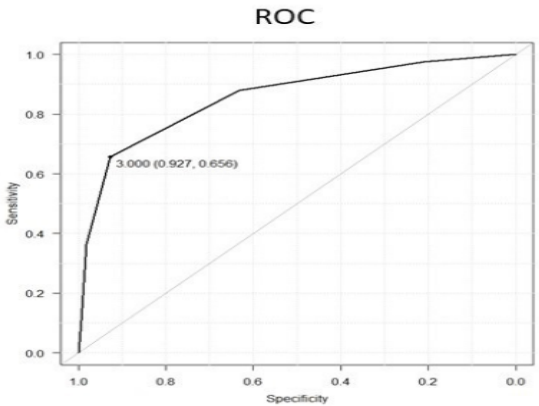
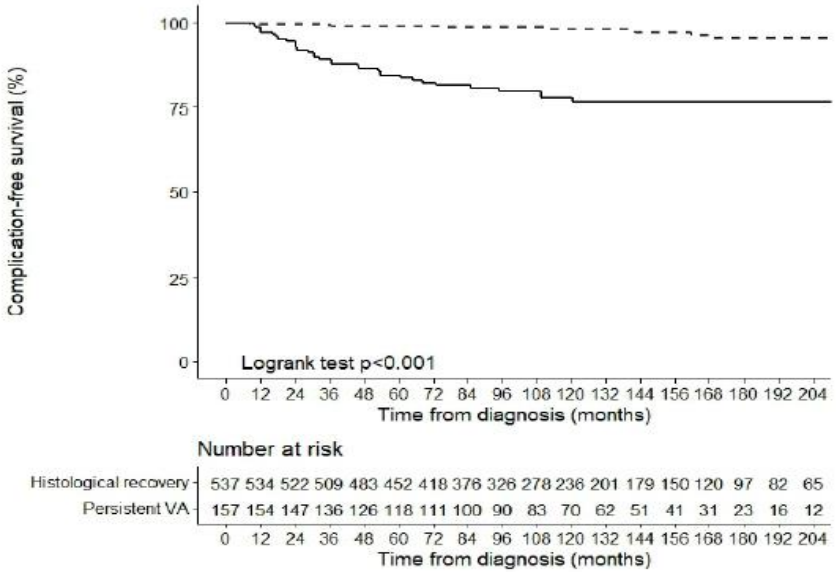



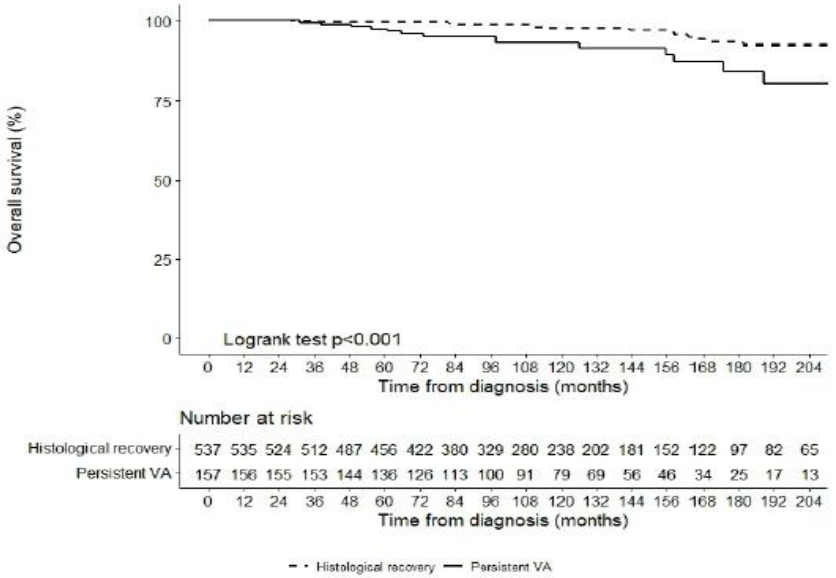

**Figure 3** A 5-point clinical score to stratify patients according to their risk of having persistent VA at follow-up duodenal biopsy. A score of ≥3 identifies patients at high risk of persistent VA. The score is calculated by summing the points obtained for each item. Dark grey: patients with persistent VA; light grey: patients with mucosal healing. GFD, gluten-free diet; ROC, receiver operating characteristic; VA, villous atrophy.

Schiepatti A et al. Gut 2023; 72: 2095-2102

# Impact of persistent villous atrophy in coeliac disease

- **Design:** multicentre retrospective-prospective study
- **Patients:** 2211 patients consisting of a study cohort (cohort 1) and validation cohort (cohort 2)
- **Primary endpoints:**
  - Development of a score to predict persistent villous atrophy
  - Relationship between persistent villous atrophy and long-term outcome




Schiepatti A et al. Gut 2023; 72: 2095-2102

# Take Home Messages

- H.p.-Eradikation senkt das Magenkarzinomrisiko in jedem Stadium der „Correa-Kaskade“ – aber nur auf lange Sicht.
- H.p. ist wahrscheinlich auch an der Pathogenese des Colonkarzinoms beteiligt.
- Über 75% aller early-stage MALT-Lymphome des Magens zeigen nach H.p.-Eradikation ein komplettes Ansprechen.
- H.p.-Resistenzen gegen Clarithromycin, Levofloxacin und Metronidazol nehmen weltweit zu.
- Als Erstlinien-Therapie sollte nach Möglichkeit eine Bismuth-basierte Quadrupeltherapie eingesetzt werden (3 x tgl. Gabe erhöht die Compliance und ist möglich).
- Das Karzinomrisiko der H.p.-neg. Autoimmungastritis ist wahrscheinlich deutlich niedriger als bisher vermutet.
- Es besteht keine Assoziation zwischen PPI-Einnahme und Demenz.
- Das duodenale Mikrobiom spielt wahrscheinlich in der Pathogenese der funktionellen Dyspepsie eine zentrale Rolle.
- Persistierende villöse Atrophie bei Zöliakie ist mit schlechter Prognose assoziiert.