MINIREVIEWS

731 Percutaneous direct endoscopic pancreatic necrosectomy  

ORIGINAL ARTICLE

Case Control Study

743 Factors associated with hypertension remission after gastrectomy for gastric cancer patients  
Kang B, Liu XY, Cheng YX, Tao W, Peng D

Retrospective Cohort Study

754 3D laparoscopic-assisted vs open gastrectomy for carcinoma in the remnant stomach: A retrospective cohort study  
Wu D, Song QY, Li XG, Xie TY, Lu YX, Zhang BL, Li S, Wang XX

765 Nomogram to predict permanent stoma in rectal cancer patients after sphincter-saving surgery  
Kuo CY, Wei PL, Chen CC, Lin YK, Kao LJ

Retrospective Study

778 Pre-colonoscopy special guidance and education on intestinal cleaning and examination in older adult patients with constipation  

788 Model established based on blood markers predicts overall survival in patients after radical resection of types II and III adenocarcinoma of the esophagogastric junction  
Wei ZJ, Qiao YT, Zhou BC, Rankine AN, Zhang LX, Su YZ, Xu AM, Han WX, Luo PQ

799 Over-the-scope-grasper: A new tool for pancreatic necrosectomy and beyond - first multicenter experience  

809 Identifying survival protective factors for chronic dialysis patients with surgically confirmed acute mesenteric ischemia  
Liau SK, Kuo G, Chen CY, Lu YA, Lin YJ, Lee CC, Hung CC, Tian YC, Hsu HH

821 Efficacy of staple line reinforcement by barbed suture for preventing anastomotic leakage in laparoscopic rectal cancer surgery  
Ban B, Shang A, Shi J

Observational Study

833 Early detection of colorectal cancer based on circular DNA and common clinical detection indicators  
Li J, Jiang T, Ren ZC, Wang ZL, Zhang PJ, Xiang GA
CASE REPORT

849  Recurrent small bowel obstruction secondary to jejunal diverticular enterolith: A case report
Lee C, Menezes G

855  Interventional radiology followed by endoscopic drainage for pancreatic fluid collections associated with high bleeding risk: Two case reports
Xu N, Li LS, Yue WY, Zhao DQ, Xiang JY, Zhang B, Wang PJ, Cheng YX, Linghu EQ, Chai NL

LETTER TO THE EDITOR

862  Sirolimus vs tacrolimus: Which one is the best therapeutic option for patients undergoing liver transplantation for hepatocellular carcinoma?
Ahmed F, Zakaria F, Enebong Nya G, Mouchli M

867  Statistical proof of Helicobacter pylori eradication in preventing metachronous gastric cancer after endoscopic resection in an East Asian population
Karbalaei M, Keikha M

874  Risk prediction of common bile duct stone recurrence based on new common bile duct morphological subtypes
Saito H, Tada S
ABOUT COVER
Editorial Board Member of *World Journal of Gastrointestinal Surgery*, Junichi Shindoh, MD, PhD, Chief Physician, Division of Hepatobiliary-pancreatic Surgery, Toranomon Hospital, Tokyo 105-8470, Japan. jshindoh@gmail.com

AIMS AND SCOPE
The primary aim of *World Journal of Gastrointestinal Surgery* (WJGS, *World J Gastrointest Surg*) is to provide scholars and readers from various fields of gastrointestinal surgery with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

WJGS mainly publishes articles reporting research results and findings obtained in the field of gastrointestinal surgery and covering a wide range of topics including biliary tract surgical procedures, biliopancreatic diversion, colecotmy, esophagectomy, esophagostomy, pancreas transplantation, and pancreatectomy, etc.

INDEXING/ABSTRACTING
The WJGS is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Current Contents/Clinical Medicine, Journal Citation Reports/Science Edition, PubMed, PubMed Central, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for WJGS as 2.505; IF without journal self cites: 2.473; 5-year IF: 3.099; Journal Citation Indicator: 0.49; Ranking: 104 among 211 journals in surgery; Quartile category: Q2; Ranking: 81 among 93 journals in gastroenterology and hepatology; and Quartile category: Q4.

RESPONSIBLE EDITORS FOR THIS ISSUE
Production Editor: Rui-Rui Wu; Production Department Director: Xiang Li; Editorial Office Director: Jia-Ru Fan.
LETTER TO THE EDITOR

Statistical proof of Helicobacter pylori eradication in preventing metachronous gastric cancer after endoscopic resection in an East Asian population

Mohsen Karbalaei, Masoud Keikha

Specialty type: Infectious diseases
Provenance and peer review: Invited article; Externally peer reviewed.
Peer-review model: Single blind
Peer-review report’s scientific quality classification
Grade A (Excellent): 0
Grade B (Very good): B, B
Grade C (Good): C
Grade D (Fair): D
Grade E (Poor): 0
P-Reviewer: Basso L, Italy; Cheng H, China; Cheng H, China; Mba IE, Nigeria

Received: April 8, 2022
Peer-review started: April 8, 2022
First decision: May 11, 2022
Revised: May 29, 2022
Accepted: July 27, 2022
Article in press: July 27, 2022
Published online: August 27, 2022

Mohsen Karbalaei, Department of Microbiology and Virology, School of Medicine, Jiroft University of Medical Sciences, Jiroft 78617-56447, Iran
Masoud Keikha, Department of Microbiology and Virology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad 13131-99137, Iran

Corresponding author: Masoud Keikha, PhD, Doctor, Instructor, Teaching Assistant, Department of Microbiology and Virology, Faculty of Medicine, Mashhad University of Medical Sciences, Vakilabad Blvd., Bahonar Blvd. Pardis campus, Mashhad 13131-99137, Iran. masoud.keykha90@gmail.com

Abstract

We conducted a comprehensive literature review and meta-analysis study on the efficacy of Helicobacter pylori (H. pylori) eradication in preventing metachronous gastric cancer after endoscopic resection among an East Asian population. Our results showed that the eradication of this pathogen significantly reduced the risk of susceptibility to metachronous gastric cancer in these patients. However, based on the available evidence, several factors such as increasing age, severe atrophy in the corpus and antrum, and intestinal metaplasia all may increase the risk of metachronous gastric cancer in H. pylori eradicated patients.

Key Words: Helicobacter pylori; Gastric cancer; Eradication rate; Metachronous gastric cancer

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.
Core Tip: Gastrointestinal infections caused by Helicobacter pylori (H. pylori) is one of the most well-known infections in the human digestive tract. This bacterium successfully has been colonized in the stomach of more than 4 billion people worldwide. In many developing countries, these microorganisms are colonized in childhood, which in later years may develop to severe complications, particularly gastric adenocarcinoma. In the present study, we statistically evaluated the effectiveness of H. pylori eradication in reducing the risk of tend to metachronous gastric cancer (MGC) in Asian populations. Our results suggested that the eradication of this pathogen significantly reduced the risk of susceptibility to MGC in these patients. However, based on the available evidence, several factors such as increasing age, severe atrophy in the corpus and antrum, and intestinal metaplasia all may increase the risk of MGC in H. pylori extirpated patients. Unfortunately, there is no detailed information about the location of the stomach where the reduction of gastric cancer can be achieved after H. pylori eradication. Therefore, in future studies, more research should be done on the recent puzzle.

Citation: Karbalaei M, Keikha M. Statistical proof of Helicobacter pylori eradication in preventing metachronous gastric cancer after endoscopic resection in an East Asian population. World J Gastrointest Surg 2022; 14(8): 867-873
URL: https://www.wjgnet.com/1948-9366/full/v14/i8/867.htm
DOI: https://dx.doi.org/10.4240/wjgs.v14.i8.867

TO THE EDITOR

Helicobacter pylori (H. pylori) is a Gram-negative, microaerophilic, and helical microorganism that colonizes the gastric mucosa in half of the world’s population[1]. This bacterium is the main etiologic cause of gastritis, dyspepsia, gastric mucosa-associated lymphoid tissue (MALT) lymphoma, gastric cancer, and peptic ulcer[1-3]. According to the literature, H. pylori also contributes in extragastrintestinal disorders such as insulin resistance, non-alcoholic liver disease, diabetes mellitus, coronary artery disease, and neurodegenerative disease[3,4]. In 1994, the International Agency for Research on Cancer (IARC) identified this bacterium as a group I gastric carcinogen[5]. There is ample evidence about the positive relationship between H. pylori infection and gastric cancer; primary infection with this bacterium has been proven to lead to cancer by inducing atrophic gastritis, intestinal metaplasia, and dysplasia[6]. According to previous randomized controlled trials (RCTs), it seems that the eradication of this pathogen is not effective in preventing the occurrence of primary gastric cancer[7-12]. Doorakers et al[13] in a recent meta-analysis found that the eradication of this microorganism fundamentally reduced the incidence of primary gastric cancer.

Antrectomy (distal gastric resection) is a rare surgical procedure to treat early distal gastric cancer, in which the pyloric antrum is excised; although the presence of H. pylori may be decreased in the residual stomach, both untreated bacterial infection and biliopancreatic reflux damage the residual gastric mucosa, which can be considered as precursors for gastric stump cancer (GSC)[14]. Endoscopic resection (ER) procedures such as endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are known as accepted therapeutic strategies for treating early gastric cancer (EGC); although the effect of ER on EGC treatment is greater than that of gastrectomy, the risk of metachronous gastric lesions in the remnant stomach is higher after ER than gastrectomy[15].

Based on documents, the incidence of metachronous gastric cancer (MGC) has been estimated at 2.7%-15.6% in 3-5 years after EGC[16]. The efficacy of eradication of infection in the prevention of metachronous recurrence is controversial[15,17]. In the present study, we determined the beneficial effect of H. pylori eradication to prevent the recurrence of MGC after ER in an East Asian population.

We searched scientific databases such as Scopus, PubMed, Google Scholar, Cochrane Library, as well as Embase regardless of restriction in date and language by November 2020. The titles and abstracts of all papers were assessed to select the relevant articles. Then, eligible studies related to the effect of definitive treatment of infection on the recurrence of MGC after ER were collected. The inclusion criteria were: (1) RCTs or cohort studies on the effect of standard bacterial eradication on metachronous recurrence; (2) comparative studies of people with conventional H. pylori eradication and those who do not receive conventional eradication procedure; and (3) studies on the East Asian population. On the other hand, criteria such as (1) review articles, letters, or congress abstracts; (2) duplication studies; (3) non-clinical studies; and (4) studies with insufficient materials and findings were considered as the exclusion criteria. We collected the essential information using Comprehensive Meta-Analysis software, version 2.2. The incidence of metachronous recurrence was reported in each group as a percentage with 95% confidence interval (95%CI). Moreover, the clinical achievement of H. pylori eradication in reduction of metachronous recurrence was also measured using odds ratio (OR) with 95%CI. Heterogeneity was determined via I² value and Cochran’s Q test; a random-effect model was applied in high heterogeneity cases (I² > 25% and Cochran’s-Q P > 0.05) according to the Dersimonian and Laird
Karbalaei M et al. H. pylori eradication and risk of MGC

<table>
<thead>
<tr>
<th>Study name</th>
<th>Odds ratio</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uemura et al</td>
<td>0.159</td>
<td>0.019</td>
<td>1.358</td>
<td>-1.680</td>
<td>0.093</td>
</tr>
<tr>
<td>Nakegawa et al</td>
<td>0.419</td>
<td>0.203</td>
<td>0.863</td>
<td>-2.360</td>
<td>0.018</td>
</tr>
<tr>
<td>Fukase et al</td>
<td>0.345</td>
<td>0.157</td>
<td>0.757</td>
<td>-2.654</td>
<td>0.008</td>
</tr>
<tr>
<td>Shiotani et al</td>
<td>1.268</td>
<td>0.145</td>
<td>11.096</td>
<td>0.214</td>
<td>0.830</td>
</tr>
<tr>
<td>Han et al, 1</td>
<td>0.889</td>
<td>0.150</td>
<td>5.256</td>
<td>-0.130</td>
<td>0.897</td>
</tr>
<tr>
<td>Kim et al, 1</td>
<td>0.072</td>
<td>0.004</td>
<td>1.368</td>
<td>-1.752</td>
<td>0.080</td>
</tr>
<tr>
<td>Maehata et al</td>
<td>0.556</td>
<td>0.252</td>
<td>1.224</td>
<td>-1.458</td>
<td>0.145</td>
</tr>
<tr>
<td>Watanuki et al</td>
<td>0.379</td>
<td>0.101</td>
<td>1.425</td>
<td>-1.436</td>
<td>0.151</td>
</tr>
<tr>
<td>Choi et al</td>
<td>1.117</td>
<td>0.240</td>
<td>5.202</td>
<td>0.142</td>
<td>0.887</td>
</tr>
<tr>
<td>Bae et al</td>
<td>0.496</td>
<td>0.285</td>
<td>0.863</td>
<td>-2.483</td>
<td>0.013</td>
</tr>
<tr>
<td>Choi et al, 2</td>
<td>0.621</td>
<td>0.236</td>
<td>1.634</td>
<td>-0.966</td>
<td>0.334</td>
</tr>
<tr>
<td>Kim et al, 2</td>
<td>0.242</td>
<td>0.053</td>
<td>1.097</td>
<td>-1.840</td>
<td>0.066</td>
</tr>
<tr>
<td>Kwon et al, 1</td>
<td>0.289</td>
<td>0.115</td>
<td>0.728</td>
<td>-2.634</td>
<td>0.008</td>
</tr>
<tr>
<td>Jung et al</td>
<td>1.453</td>
<td>0.670</td>
<td>3.150</td>
<td>0.945</td>
<td>0.345</td>
</tr>
<tr>
<td>Jeong et al</td>
<td>1.024</td>
<td>0.166</td>
<td>6.317</td>
<td>0.025</td>
<td>0.980</td>
</tr>
<tr>
<td>Kim et al, 3</td>
<td>1.051</td>
<td>0.106</td>
<td>10.391</td>
<td>0.043</td>
<td>0.966</td>
</tr>
<tr>
<td>Kwon et al</td>
<td>0.234</td>
<td>0.095</td>
<td>0.576</td>
<td>-3.163</td>
<td>0.002</td>
</tr>
<tr>
<td>Chung et al</td>
<td>0.178</td>
<td>0.061</td>
<td>0.520</td>
<td>-3.154</td>
<td>0.002</td>
</tr>
<tr>
<td>Han et al, 2</td>
<td>0.593</td>
<td>0.278</td>
<td>1.266</td>
<td>-1.350</td>
<td>0.177</td>
</tr>
<tr>
<td>Choi et al</td>
<td>0.504</td>
<td>0.256</td>
<td>0.993</td>
<td>-1.979</td>
<td>0.048</td>
</tr>
<tr>
<td>Okada et al</td>
<td>0.785</td>
<td>0.449</td>
<td>1.372</td>
<td>-0.850</td>
<td>0.395</td>
</tr>
<tr>
<td>Yamamoto et al</td>
<td>3.360</td>
<td>0.976</td>
<td>11.563</td>
<td>1.922</td>
<td>0.055</td>
</tr>
<tr>
<td>0.539</td>
<td>0.441</td>
<td>0.668</td>
<td>-6.053</td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 Forest plot for incidence of metachronous gastric cancer between Helicobacter pylori-eradicated group and non-eradicated group in 23 studies. 95%CI: 95% confidence interval.

method. The potential study bias was assessed by the Egger’s test and Begg’s test[18,19].
A total of 1753 documents were retrieved during the initial literature search. Finally, we selected 23 articles as eligible articles according to the inclusion criteria[20-42]. The demographic information such as first author, date of publication, country, follow-up years, metachronous lesions, frequency of metachronous recurrence in both eradicated and persistent cases, and references are summarized in Table 1. These studies were conducted during 1997-2019. Of all the studies, 10 were from Korea, and 10 from the Japan. In the current analysis, we evaluated the data of 9233 H. pylori positive cases to determine the efficacy of complete eradication in preventing metachronous events.

The frequency of metachronous recurrence in both H. pylori extirpated and persistently infected cases was 7.2% (95%CI: 6.4-8.1, P = 0.01; I² = 81.68, Q = 125.56, P = 0.01; Egger’s P = 0.08, Begg’s P = 0.05) and 17.7% (95%CI: 16.1-19.5, P = 0.01; I² = 92.68, Q = 314.26, P = 0.01; Egger’s P = 0.01, Begg’s P = 0.54), respectively.

According to the statistical analysis, there is an inverse relation between H. pylori elimination and metachronous recurrence (OR = 0.53, 95%CI: 0.44-0.65, P = 0.01; I² = 39.22, Q = 34.55, P = 0.03; Egger’s P = 0.08, Begg’s P = 0.09). We showed that the eradication of H. pylori can significantly reduce the risk of metachronous recurrence (Figure 1).

Although most of included studies had not investigated the positive effect of H. pylori eradication in reducing MGC in each location of the stomach, in patients with H. pylori eradication, the risk of MGC was significantly associated with other conditions such as severity of corpus atrophy and intestinal metaplasia[21-23,27,39,40]. However, Han et al[39] showed that antrum/body atrophy and old age can meaningfully increase the risk of metachronous cancer after H. pylori eradication[24]. In some studies, there was no significant relationship between this cancer and the eradication of H. pylori[26,31,36].

Gastric cancer is one of the most prevalent cancers worldwide, especially in East Asian countries; today, the incidence of secondary gastric cancer after ER has become a major public health concern[34]. Unfortunately, in some cases, the eradication of H. pylori has not been able to prevent MGC in patients with ER. In general, the clinical eradication of H. pylori seems to be effective in preventing secondary gastric cancer and improving quality of life and survival of patients with gastric cancer[43]. In the present study, using data from 9233 H. pylori positive cases, we showed an inverse association between the elimination of H. pylori and progression to MGC in patients with a record of ER. In previous studies, we have shown that eradicating H. pylori in patients with gastric ulcers can reduce the risk of gastric cancer[44]. In general, it is suggested that eradicating H. pylori after primary gastric cancer can reduce the risk of MGC and increase survival in gastric cancer population[15,34,45].
Table 1 Characteristics of included studies

<table>
<thead>
<tr>
<th>First author</th>
<th>Country</th>
<th>Year</th>
<th>Follow-up years</th>
<th>Metachronous lesions</th>
<th>H. Pylori positive samples</th>
<th>Frequency</th>
<th>Mean age (yr)</th>
<th>Gender</th>
<th>Antrum/body/cardia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uemura</td>
<td>Japan</td>
<td>1997</td>
<td>3 years</td>
<td>EGC</td>
<td>132</td>
<td>1/65</td>
<td>69.4</td>
<td>68.7</td>
<td>47/18</td>
</tr>
<tr>
<td>Nakagawa</td>
<td>Japan</td>
<td>2006</td>
<td>2 years</td>
<td>EGC</td>
<td>2825</td>
<td>8/356</td>
<td>24/250</td>
<td>68</td>
<td>195/60</td>
</tr>
<tr>
<td>Fukase</td>
<td>Japan</td>
<td>2008</td>
<td>3 years</td>
<td>EGC</td>
<td>505</td>
<td>9/255</td>
<td>24/250</td>
<td>69</td>
<td>191/59</td>
</tr>
<tr>
<td>Shirotani</td>
<td>Japan</td>
<td>2008</td>
<td>24-48 mo</td>
<td>EGC</td>
<td>91</td>
<td>9/80</td>
<td>1/11</td>
<td>66</td>
<td>82/18</td>
</tr>
<tr>
<td>Han</td>
<td>Korea</td>
<td>2011</td>
<td>18-57 mo</td>
<td>EGC</td>
<td>116</td>
<td>4/94</td>
<td>2/22</td>
<td>70</td>
<td>NA</td>
</tr>
<tr>
<td>Kim</td>
<td>Korea</td>
<td>2011</td>
<td>60 mo</td>
<td>EGC</td>
<td>55</td>
<td>0/28</td>
<td>5/27</td>
<td>62</td>
<td>19/10</td>
</tr>
<tr>
<td>Maehata</td>
<td>Japan</td>
<td>2012</td>
<td>3 years</td>
<td>EGC</td>
<td>268</td>
<td>15/177</td>
<td>68</td>
<td>72</td>
<td>128/49</td>
</tr>
<tr>
<td>Watari</td>
<td>Japan</td>
<td>2012</td>
<td>1 year</td>
<td>ER</td>
<td>185</td>
<td>3/79</td>
<td>10/106</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Seo</td>
<td>Japan</td>
<td>2012</td>
<td>27 mo</td>
<td>EGC</td>
<td>74</td>
<td>0/61</td>
<td>0/13</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Kim</td>
<td>Korea</td>
<td>2014</td>
<td>12 mo</td>
<td>EGC</td>
<td>156</td>
<td>2/49</td>
<td>16/107</td>
<td>59</td>
<td>39/10</td>
</tr>
<tr>
<td>Bae</td>
<td>Korea</td>
<td>2014</td>
<td>60 mo</td>
<td>EGC/dysplasia</td>
<td>667</td>
<td>34/485</td>
<td>24/182</td>
<td>62</td>
<td>360/105</td>
</tr>
<tr>
<td>Choi</td>
<td>Korea</td>
<td>2014</td>
<td>36 mo</td>
<td>EGC</td>
<td>880</td>
<td>10/439</td>
<td>17/441</td>
<td>59</td>
<td>291/148</td>
</tr>
<tr>
<td>Kwon</td>
<td>Korea</td>
<td>2014</td>
<td>3 years</td>
<td>EGC</td>
<td>283</td>
<td>10/214</td>
<td>10/69</td>
<td>61</td>
<td>141/73</td>
</tr>
<tr>
<td>Jung</td>
<td>Korea</td>
<td>2015</td>
<td>42 mo</td>
<td>EGC/dysplasia</td>
<td>675</td>
<td>10/169</td>
<td>21/506</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Jeong</td>
<td>Korea</td>
<td>2015</td>
<td>NA</td>
<td>EGC</td>
<td>148</td>
<td>3/88</td>
<td>2/60</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Kim</td>
<td>Korea</td>
<td>2016</td>
<td>30 mo</td>
<td>EGC</td>
<td>162</td>
<td>3/120</td>
<td>1/42</td>
<td>64</td>
<td>86/34</td>
</tr>
<tr>
<td>Ami</td>
<td>Japan</td>
<td>2017</td>
<td>53 mo</td>
<td>EGC</td>
<td>226</td>
<td>0/212</td>
<td>0/14</td>
<td>69</td>
<td>NA</td>
</tr>
<tr>
<td>Kwon</td>
<td>Korea</td>
<td>2017</td>
<td>47 mo</td>
<td>EGC/dysplasia</td>
<td>395</td>
<td>33/368</td>
<td>8/27</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Chung</td>
<td>Korea</td>
<td>2017</td>
<td>61 mo</td>
<td>EGC/dysplasia</td>
<td>185</td>
<td>17/167</td>
<td>7/18</td>
<td>67</td>
<td>NA</td>
</tr>
<tr>
<td>Han</td>
<td>Korea</td>
<td>2017</td>
<td>60 mo</td>
<td>EGC</td>
<td>408</td>
<td>12/212</td>
<td>18/196</td>
<td>61</td>
<td>165/47</td>
</tr>
<tr>
<td>Choi</td>
<td>Korea</td>
<td>2018</td>
<td>5.9 years</td>
<td>EGC</td>
<td>396</td>
<td>14/194</td>
<td>27/202</td>
<td>59</td>
<td>141/53</td>
</tr>
<tr>
<td>Okada</td>
<td>Japan</td>
<td>2019</td>
<td>2 years</td>
<td>ESD</td>
<td>348</td>
<td>27/174</td>
<td>33/174</td>
<td>65</td>
<td>129/45</td>
</tr>
<tr>
<td>Yamamoto</td>
<td>Japan</td>
<td>2019</td>
<td>31.7 mo</td>
<td>Dysplasia</td>
<td>53</td>
<td>12/17</td>
<td>15/36</td>
<td>67</td>
<td>14/3</td>
</tr>
</tbody>
</table>

**Ref.**

[20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42]
Unfortunately, there is no detailed information about the location of the stomach where the reduction of gastric cancer can be achieved after *H. pylori* eradication. Therefore, in future studies, more research should be done on the recent puzzle.

**FOOTNOTES**

**Author contributions:** Karbalaei M and Keikha M contributed to conceptualization, data curation, original drafting, and manuscript review & editing; all authors critically reviewed and approved the final version of the manuscript before submitting.

**Conflict-of-interest statement:** There are no conflicts of interest to report.

**Open-Access:** This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: [https://creativecommons.org/Licenses/by-nc/4.0/](https://creativecommons.org/Licenses/by-nc/4.0/)

**Country/Territory of origin:** Iran

**ORCID number:** Mohsen Karbalaei 0000-0001-9899-2885; Masoud Keikha 0000-0003-1208-8479.

**S-Editor:** Chen YL

**L-Editor:** Wang TQ

**P-Editor:** Chen YL

**REFERENCES**


5. Schistosomes, liver flukes and *Helicobacter pylori*. IARC Working Group on the Evaluation of Carcinogenic Risks to...
Karbalaei M et al. H. pylori eradication and risk of MGC


molecular pathology of Helicobacter pylori eradication. *Int J Cancer* 2012; 130: 2349-2358 [PMID: 21732341 DOI: 10.1002/ijc.26275]


