

# Screening to Identify and Eradicate *Helicobacter pylori* Infection in Teenagers in Japan



Taiji Akamatsu, MD, PhD<sup>a,b,\*</sup>, Takuma Okamura, MD, PhD<sup>b</sup>,  
Yugo Iwaya, MD, PhD<sup>b</sup>, Tomoaki Suga, MD, PhD<sup>b</sup>

## KEYWORDS

- *Helicobacter pylori* • Gastric cancer • Prevention • Health screening • Teenager
- School children • Cost-effectiveness • Medical economy

## KEY POINTS

- The rate of prevalence of *Helicobacter pylori* infection in Japanese teenagers is 4% to 5% at present.
- A very high participation rate of screening examination for *H pylori* infection using urine-based rapid test kit was achieved in high school health screening.
- The most common endoscopic findings for students with *H pylori* infection are nodular gastritis and closed-type atrophic gastritis.
- If this procedure was introduced nationwide, the cost of the prevention of a gastric cancer would be 481,144 yen (\$4184 dollars) per person.
- The low rate of prevalence of *H pylori* infection makes it possible to perform this nationwide plan from a viewpoint of medical economy.

---

Author contributions: Each of the authors has been involved equally and has read and approved the final article. Each meets the criteria for authorship established by the International Committee of Medical Journal Editors and verifies the validity of the results reported.

Supportive foundations: Dr T. Akamatsu and coauthors are not supported by any grants.

Potential conflict: Dr T. Akamatsu and coauthors have nothing to declare.

<sup>a</sup> Endoscopy Center, Suzaka Prefectural Hospital, Nagano Prefectural Hospital Organization, 1332 Suzaka, Suzaka, Nagano 382-0091, Japan; <sup>b</sup> Gastroenterology, Department of Internal Medicine, Shinshu University School of Medicine, 3-1-1 Asahi, Matsumoto, Nagano 390-8621, Japan

\* Corresponding author. Endoscopy Center, Suzaka Prefectural Hospital, Nagano Prefectural Hospital Organization, 1332 Suzaka, Suzaka, Nagano 382-0091, Japan.

E-mail address: [akamatsu-taiji@pref-nagano-hosp.jp](mailto:akamatsu-taiji@pref-nagano-hosp.jp)

Gastroenterol Clin N Am 44 (2015) 667–676

<http://dx.doi.org/10.1016/j.gtc.2015.05.008>

[gastro.theclinics.com](http://gastro.theclinics.com)

0889-8553/15/\$ – see front matter © 2015 Elsevier Inc. All rights reserved.

## INTRODUCTION

*Helicobacter pylori* infection is etiologically related to several gastric diseases, such as gastritis, gastroduodenal ulcer, gastric cancer, and mucosa-associated lymphoid tissue (MALT) lymphoma. Gastric cancer is one of the common malignant neoplasms in East Asia including Japan, and many people die of gastric cancer each year. Recently, it has been confirmed that *H pylori* infection is a significant risk factor for gastric cancer epidemiologically,<sup>1,2</sup> experimentally,<sup>3,4</sup> and clinically.<sup>5</sup> This has been proved by experiments using animals<sup>6</sup> and also by randomized clinical studies<sup>7,8</sup> showing that eradication of *H pylori* reduces the occurrence of gastric cancer. Furthermore, Nozaki and colleagues<sup>9</sup> reported that early stage eradication of *H pylori* was more effective in reducing the late occurrence of gastric cancer compared with late-stage eradication in animal experimentation. From these data, eradication of *H pylori* is thought to be beneficial for the prevention of human gastric cancer, and it is more effective to treat *H pylori* infection in young people compared with old people. Furthermore, *H pylori*-related diseases, especially complicated gastroduodenal ulcer, which can cause death and emergency operations because of perforation or bleeding, can be prevented by cure of *H pylori*. Most Japanese experts of *H pylori* infection agree that *H pylori* should be treated in young people, but the method of mass screening for *H pylori* infection and the most suitable age for receiving the treatment remain controversial.

This article presents our attempts at examination and treatment of *H pylori* infection in high school health screening between 2007 and 2013. The purpose of this study was to collect data regarding the screening for *H pylori* infection in health screenings in school, and to identify the actual effects of *H pylori* infection in Japanese teenagers.

## AN EXAMINATION AND TREATMENT OF *HELICOBACTER PYLORI* IN HIGH SCHOOL STUDENTS

We have proposed that a screening for *H pylori* infection should be introduced into health screenings in school, and have performed this procedure in one Japanese high school since 2007.<sup>10</sup> The study was approved by the Ethics Committee of Shinshu University School of Medicine.

### ***First Screening Examination for Helicobacter pylori Infection***

All students of the second year in high school were annually examined about the status of *H pylori* infection using a urine-based rapid test kit (RUPIRAN; Otsuka Pharmaceutical Co, Tokyo, Japan). Students were between ages 16 and 17. Between 2007 and 2013, a total of 3251 of 3263 students (99.6%) received a first screening examination. One hundred and thirty-six of 3251 students (4.2%) were positive for *H pylori*; the remaining 3115 were negative (Table 1). A summary of the results is shown in Fig. 1.

### ***Further Examination for Helicobacter pylori Infection***

Seventy-four of 136 students who were determined to be *H pylori*-positive visited Shinshu University Hospital. Another 11 consulted other medical institution; the remaining 51 did not accept the invitation to visit a medical institution.

Seventy-two of the 74 students who visited Shinshu University Hospital underwent esophagogastroduodenoscopy (EGD) with sedation using 0.1 mg/kg of midazolam after providing written informed consent; two declined to undergo EGD.

*H pylori* status was assessed by histology (six sites) and culture (two sites) of biopsy specimens obtained from the antrum and corpus of the stomach. The biopsy samples were stained with hematoxylin and eosin, and immunostained for *H pylori* with rabbit

Download English Version:

<https://daneshyari.com/en/article/3301024>

Download Persian Version:

<https://daneshyari.com/article/3301024>

[Daneshyari.com](https://daneshyari.com)