Helicobacter pylori and Gastric Cancer in High Risk Immigrant Populations: A Systematic Literature Review

Qiu Xia Guan[1,2], Susan Kum, PhD[1], Yi-Ling Tan, MPH[1], Simona Kwon, DrPH, MPH[1]

[1] NYU School of Medicine, Department of Population
[2] Columbia University Mailman School of Public Health, Department of Epidemiology

NYU School of Medicine
Department of Population Health

INTRODUCTION

- Gastric cancer is a common cancer and is the third leading cause of cancer mortality in the world.
- Gastric cancer has a poor survival rate. The average 5-year survival rate in the U.S. is around 31%[1].
- Racial and ethnic minorities have an increased risk for gastric cancer. In the U.S., the incidence rates of gastric cancer in Hispanics, African-Americans, and Asians are 52, 81, and 91 percent higher compared to that in Caucasians[2].
- Causes of gastric cancer are multifactorial and *Helicobacter pylori (H. pylori)* has been identified as a major risk factor. It is estimated that *H. pylori* can be found in about two-thirds of the world's population[3].
- Immigrants from regions such as Africa, South America, and Asia have increased prevalence of *H. pylori.* For example, Chinese Americans in NYC have a *H. pylori* seroprevalence of 70.1%[4].
- The differences in the prevalence of *H. pylori* further contribute to the racial and ethnic disparities that exist in gastric cancer.

OBJECTIVE

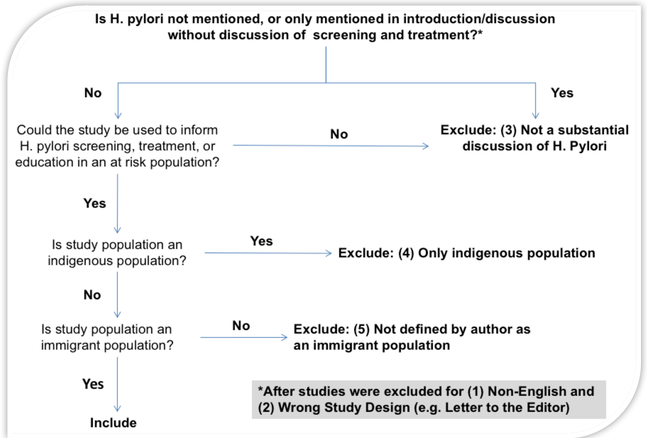
To conduct a systematic review of peer-reviewed literature to gain a better understanding of *H. pylori* and gastric cancer in high risk immigrant populations.

METHODS

- Databases such as PubMed, EMBASE, CINAHL, and CENTRAL were searched for articles that included keywords related to *H. pylori* and gastric cancer in the immigrant population.
- Titles and abstracts were screened and assessed for eligibility based on our inclusion and exclusion criteria.
- Eligible articles were evaluated and relevant information extracted. Findings were then categorized into common themes observed throughout the review.

ELIGIBILITY CRITERA

- 1356 articles were identified through the initial database search. Eligibility was determined using our inclusion and exclusion criteria.
- **Inclusion Criteria**:
  (1) Race, ethnic, minority, foreign-born or immigrant population (all generations); (2) Observational studies (e.g. case-control, cross-sectional, longitudinal, cohort, ecological, case series); (3) Experimental studies (e.g. intervention studies, clinical trials, community trials); (4) Review articles; (5) Study addresses etiology of gastric cancer, OR etiology (including genetic strains), screening, or treatment of *H. pylori*
- **Exclusion Criteria:** (1) Indigenous population; (2) Individual case studies; (3) Studies prior to 2009; (4) Primary study outcome is neither H. pylori infection nor gastric cancer



- 54 articles satisfied eligibility criteria and were used for this review

PREVALENCE FINDINGS

- The **prevalence of *H. pylori* is highest among immigrant and refugee populations**. The prevalence rates decrease with each successive generation born in the U.S.
- The **age group with highest prevalence is children**, and most people acquired *H. pylori* before adulthood.
- **Immigrants from high risk countries have increased risk for gastric cancer** and this risk remains high among the first two generations.

RESULTS

- Of the 54 articles evaluated, 13 were review articles, 40 were observational studies, and 1 was a clinical trial for *H. pylori* eradication therapy. The majority of observational studies provided insight into the prevalence and risk factors of *H. pylori* infections in immigrant populations.
- This review consisted of articles from a number of different countries. The most common ones were the U.S. with 15 articles, Australia with 6, Belgium with 4, and the Netherlands with 4.
- In articles that examined *H. pylori* screenings, a common finding is that **immigrant populations have low screening rates**. Examples of barriers to screening include the lack of insurance coverage, low health literacy and knowledge on screening procedures, language barriers, and the inability to take time off work or childcare.
- Many articles discussed that **immigrant populations tend to have poorer *H. pylori* eradication therapy results**, possibly from antibiotic resistance. Some possible factors include language barriers, limited health knowledge on infection and medications, and limited access to therapy and healthcare.

CONCLUSIONS

- Majority of articles focused on the high prevalence of *H. pylori* and incidence rates of gastric cancer. However, **few articles discussed guidelines for screening and treating *H. pylori* in these high risk immigrant populations**.
- This review identified important barriers that immigrant populations experience in *H. pylori* screening and treatment. Healthcare providers should become aware of these factors and take them into consideration when designing screening and treatment guidelines for this population.
- Future studies should continue to identify evidence and gaps related to *H. pylori* and gastric cancer in immigrant populations in order to offer appropriate practice and policy recommendations to reduce the racial and ethnic health disparities that currently exist.

REFERENCES

[1] American Cancer Society. (n.d.). Stomach Cancer Survival Rates. Retrieved from www.cancer.org/cancer/stomach-cancer/detection-diagnosis-staging/survival-rates.html.
[2] Bautista, M. C., Jiang, S. F., Armstrong, M. A., Kakar, S., Postlethwaite, D., & Li, D. (2015). Significant Racial Disparities Exists in Noncardia Gastric Cancer Outcomes Among Kaiser Permanente's Patient Population. *Digestive Diseases and Sciences*, *60*(4): 984-95.
[3] CDC. (n.d.) Helicobacter pylori Fact Sheet. Retrieved from www.cdc.gov/ulcer/files/hpfacts.pdf.
[4] Perez, G. I., Olivares, A. Z., Foo, F. Y., F, S., Neusy, A. J., Ng, C., Holzman, R. S., Marmor, M., & Blaser, M. J. (2005). Seroprevalence of Helicobacter pylori in New York City populations originating in East Asia. *Journal of Urban Health*, *(82)* 3: 510-516.

Acknowledgments: Research reported in this presentation was supported by the National Institute on Minority Health and Health Disparities of the National Institutes of Health under Award Number U54MD000538.
The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health."