The Prevalence of Gastric Pernecplastic Lesions in East Asians and Hispanics in the United States
Parallels the Incidence of Gastric Cancer in Their Corresponding Ancestral Countries

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Background

The epidemiology of H. pylori infection and the incidence of gastric cancer (GC) and its precursor lesions in different countries are well established. However, the consequences of such variability for the healthcare of the multiracial population of the US is less clear and have not been systematically investigated.

If H. pylori infection and preneoplastic lesions were more common in some groups than in others, patients from high-prevalence groups would likely benefit from more aggressive H. pylori testing and screening programs for gastric cancer.

Aims

The aim of this study was to compare the prevalence of H. pylori infection and atrophic metaplastic gastritis in US residents of East Asian and Hispanic ancestry to a group of US residents not of East Asian, Hispanic, Indian (persons with ancestry in the Indian Subcontinent), Other Americans (Caucasians and African-Americans – not specifically identified with any of the above groups).

Results

The prevalence of H. pylori and Intestinal Metaplasia in each group are summarized in Table 1. Whereas the highest prevalence values for H. pylori were found in Hispanic and Vietnamese patients, these two groups had a much lower prevalence of intestinal metaplasia than Chinese and Korean subjects.

The prevalence of chronic inactive gastritis was closely related to that of H. pylori infection, of which it represents a sequela. The highest prevalence of atrophy and metaplastic atrophy in the gastric corpus for each group is reported in Table 2. The prevalence of metaplastic atrophy in the gastric corpus for each group and 2008 incidence of gastric cancer in the respective ancestral countries.

Study Design and Methods

From a large national pathology database of unique subjects who had gastric mucosal biopsies between 2008 and 2013, in endoscopy centers throughout the US, we used the methods detailed in Panel 1 to extract patients from the following ethnic origins:

- Hispanic
- Chinese
- Korean
- Vietnamese
- Japanese
- Indian (persons with ancestry in the Indian Subcontinent)
- Other Americans (Caucasians and African-Americans – not specifically identified with any of the above groups).

All data were gathered from one endoscopic procedure only, if a patient had multiple procedures with different sets of biopsies, only the chronologically first encounter was used in this analysis.

End-points

The following histopathologic parameters were used as end points:

- Active H. pylori infection (organisms demonstrated in gastric biopsy specimens by either immunohistochemical or histochemical staining)
- Intestinal Chronic Gastritis (no H. pylori detected)
- Intestinal Metaplasia anywhere in the stomach
- Intestinal Metaplasia and atrophy in the gastric corpus

The incidence of gastric cancer in different countries was obtained from the World Cancer Fund International (2008) and are reported as yearly new cases per 100,000 persons (male and female).

References


Table 1

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>IM in Corpus (%)</th>
<th>GC in US (100,000/M and F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>18.7%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Korean</td>
<td>15.6%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>10.4%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Indian</td>
<td>12.7%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8.9%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Other US</td>
<td>10.4%</td>
<td>17.9%</td>
</tr>
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Table 2

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Validity

1. Patients are called to ensure about ethnicity of a sample of their patients
2. Queries are applied to lists of people from different countries. If specificity is 100%, sensitivity <100%, queries are further adjusted.
3. Final categorization is generated.

1. Determining Ethnicity: A Validated Method

- Queries using comprehensive first and/or last names, assigns subjects to an appropriate category.
- An anthropologist consults with specific expertise in each group identifies characteristics peculiar to that group (e.g. preferred English names, propensity to marry outside group, U.S. immigration history).
- Queries are refined to include above information.
- An educated native informant reviews lists and excludes uncertain subjects. Queries may be further adjusted.
- Final categorization is generated.

Panel 1 – How ethnicity was determined.