Racial and Ethnic Differences in Gastric Cancer Risk

Gastro

Shah SC, McKinley M, Gupta S, et al. Population-based analysis of differences in gastric cancer incidence among races and ethnicities in individuals age 50 years and older. *Gastroenterology* 2020;159:1705–1714.

Summary

Globally, gastric cancer is the third most common cause of cancer-related deaths and the fifth most common cause of cancer. While the United States (US) is considered a low-intermediate incidence country for gastric cancer, the disease burden is not uniformly distributed among the US population. Non-cardia gastric adenocarcinoma (GA), accounting for the majority of GA in the US, is significantly more common among non-white (NW) populations, particularly immigrants from countries where GA is endemic. In contrast, cardia GA is more common among the non-Hispanic white (NHW) population, especially men. A recent cost-effectiveness analysis demonstrated that screening for non-cardia GA might be cost-effective for NW individuals ≥ 50 years old — an age threshold currently adopted for other screening interventions such as colorectal cancer in average-risk individuals and esophageal cancer in selected high-risk individuals. One input influencing that decision model is the incidence of GA. Anatomic site-specific GA incidence rates for the major race and ethnic groups in the US, specifically for the population ≥ 50 years old, however, have not been evaluated or quantified.

Shah et al analyzed data from the California Cancer Registry, the largest, most diverse SEER-designated state cancer surveillance registry, from 2011–2015, to determine the incidence of GA in specific anatomic sites (cardia, non-cardia, other/not otherwise specified) for NHW, non-Hispanic black, Hispanic, and the 7 largest Asian-American populations. Comparative risk estimates between NW groups and NHW were presented using incidence rate ratios and 95% confidence intervals.

The NW groups had a significantly higher incidence of non-cardia GA compared with NHW. The highest incidence rates were among Korean Americans ≥ 50 years old, with an overall incidence of 49.0 cases (95% CI, 43.9–54.6) per 100,000 (70.0 and 33.5 cases per 100,000 for men and women, respectively), while NHW had the lowest incidence with 3.7 cases (95% CI, 3.5–3.9) per 100,000 (4.8 and 2.8 cases per 100,000 for men and women, respectively). Compared with NHW individuals ≥ 50 years old, the risk of non-cardia GA was 1.8-fold (95% CI, 1.37–2.31) to 7.3-fold (95% CI, 5.73–9.19) higher in most NW groups, and 12.0-fold (95% CI, 9.96–14.6) to 14.5-fold (95% CI, 12.5–16.9) higher among Korean American men and women ≥ 50 years old, respectively. Compared with NHW men ≥ 50 years old,

Clinical Practice Take-Home Points

- The incidence of gastric adenocarcinoma (GA) at specific anatomic sites differs according to race/ethnicity and sex in the US. According to this population-based analysis, these differences are particularly striking for non-cardia GA, where individuals 50 years or older in all NW racial and ethnic groups had significantly higher risk of non-cardia GA—ranging from 1.8-fold to 14.5-fold higher—compared with NHW.
- Practitioners should be aware of the variation in risk profiles so that they can provide appropriate guidance to patients, and address modifiable risk factors—for example, smoking and *Helicobacter pylori* infection for non-cardia GA.
- The present study was not designed to comment on etiologies for the differences in GA risk among groups, such as immigrant generation and lifestyle factors; focused investigation is warranted to delineate the biologic and non-biologic determinants that are relevant.
- The marked differential risk among Asian American groups when disaggregated according to country of origin highlights the need to consider complete demographic data when reporting on GA epidemiology and outcomes, and for conducting future studies.
- Endoscopic screening may be cost-effective among groups at higher risk for non-cardia GA, including NW and Hispanic individuals ≥ 50 years old, but not lower risk groups, including the general NHW population ≥ 50 years old. Clinical trials comparing patient outcomes associated with GA screening vs no screening in high-risk groups in the US are needed.

all NW men, except Japanese and Korean American men, had a significantly lower risk of cardia GA. For reference, the age-adjusted incidence rates for colorectal cancer in the US based on SEER 2013–2017 data are 43.7 and 33.6 per 100,000 men and women, respectively, with the highest rates of colorectal cancer reported among black men and women (51.3 and 38.2 per 100,000 black men and women, respectively). While these estimates represent age-adjusted rates and are not specifically restricted to the age-group ≥50 years old as in the referenced study, this comparison does provide useful context.

These findings have important public health implications when considering that, without intervention, the burden of GA in the US is expected to increase given the projection that immigrants and their descendants will account for nearly 90% of the US population growth through 2065. Furthermore, Asian and Hispanic Americans are expected to surpass the NHW population. Gastric cancer screening occurs in some countries with high-risk populations, including Japan and Korea, and is associated with significantly reduced gastric cancer-related mortality as a result of early detection and the opportunity for curative resection. The findings from this study not only provide valuable information regarding the need for resource allocation to GA prevention and early detection efforts, but also provide further evidence for the need to conduct prospective, comparative trials of gastric cancer screening vs no screening in high-risk groups.

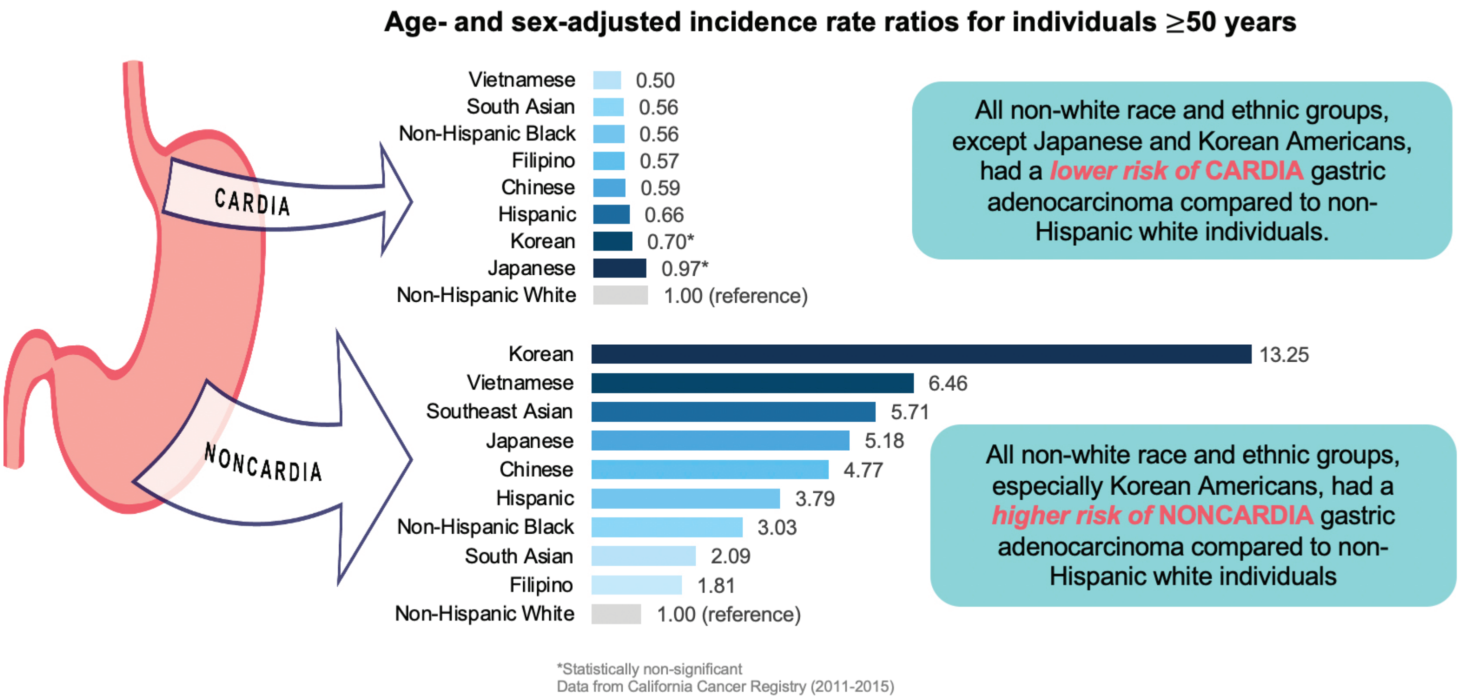

Figure 1. Age- and sex-adjusted incidence rate ratios (IRR) of anatomic site-specific gastric adenocarcinoma (GA) according to race and ethnicity among individuals age ≥ 50 years old (California Cancer Registry, 2011–2015).

Table 1. Gastric adenocarcinoma incidence rates per 100,000 person-years by anatomic site according to race and ethnicity and sex among individuals 50 years and older (California Cancer Registry, 2011–2015).

Race and ethnicity	Noncardia			Cardia			Overlapping or NOS			Population[a]
	Case count	Incidence rate, (95% CI)	IRR (95% CI)	Case count	Incidence rate, (95% CI)	IRR (95% CI)	Case count	Incidence rate, (95% CI)	IRR (95% CI)	
Men and women (combined)										
NHW	1197	3.70 (3.49–3.92)	Reference	1833	5.61 (5.35–5.87)	Reference	634	1.97 (1.82–2.14)	Reference	3,2638,954
NHB	344	11.2 (10.0–12.5)	3.03 (2.67–3.43)	102	3.16 (2.56–3.86)	0.56 (0.45–0.69)	137	4.36 (3.64–5.18)	2.21 (1.81–2.68)	3,546,618
Hispanic	1588	14.0 (13.3–14.8)	3.79 (3.5–4.09)	436	3.70 (3.35–4.08)	0.66 (0.59–0.74)	723	6.05 (5.60–6.53)	3.07 (2.74–3.43)	13,715,323
Chinese American	404	17.6 (15.9–19.5)	4.77 (4.26–5.34)	76	3.29 (2.58–4.13)	0.59 (0.47–0.74)	127	5.47 (4.54–6.52)	2.78 (2.29–3.36)	2,533,915
Japanese American	162	19.2 (16.2–22.6)	5.18 (4.33–4.75)	43	5.45 (3.86–7.47)	0.97 (0.72–1.31)	57	6.84 (5.08–9.01)	3.47 (2.65–4.55)	734,735
Filipino American	128	6.69 (5.55–8.0)	1.81 (5.16–5.41)	72	3.22 (2.50–4.09)	0.57 (0.45–0.73)	58	3.01 (2.26–3.92)	1.53 (1.17–2.00)	2,269,380
Korean American	347	49.0 (43.9–54.6)	13.3 (11.8–14.9)	27	3.95 (2.58–5.79)	0.7 (0.48–1.03)	88	12.1 (9.61–14.9)	6.12 (4.89–7.64)	789,555
South Asian American	39	7.75 (5.34–10.8)	2.09 (5.99–6.07)	21	3.14 (1.87–4.98)	0.56 (0.36–0.86)	21	4.29 (2.56–6.68)	2.18 (1.41–3.36)	721,240
Vietnamese American	183	23.9 (20.4–27.8)	6.46 (6.82–6.73)	21	2.79 (1.69–4.32)	0.5 (0.32–0.76)	53	6.58 (4.86–8.70)	3.34 (2.52–4.42)	949,045
Southeast Asian American	48	21.1 (15.2–28.5)	5.71 (4.28–7.62)	—[b]	—	—	—	—	—	338,505
Men only										
NHW	701	4.82 (4.46–5.20)	Reference	1502	9.85 (9.35–10.4)	Reference	363	2.49 (2.24–2.76)	Reference	15,537,061
NHB	195	14.1 (12.1–16.4)	2.92 (2.46–3.46)	69	4.73 (3.61–6.09)	0.48 (0.36–0.62)	86	6.25 (4.92–7.81)	2.51 (1.93–3.22)	1,635,759
Hispanic	869	17.4 (16.1–18.6)	3.60 (3.24–4.00)	319	6.12 (5.42–6.88)	0.62 (0.54–0.71)	416	7.78 (7.0–8.63)	3.13 (2.69–3.63)	6,421,688
Chinese American	223	21.9 (19.1–25.0)	4.54 (3.91–5.28)	51	4.94 (3.66–6.51)	0.50 (0.38–0.66)	69	6.74 (5.23–8.55)	2.71 (2.09–3.50)	1,148,640
Japanese American	98	33.6 (27.0–41.4)	6.98 (5.65–8.62)	28	9.72 (6.34–14.2)	0.99 (0.68–1.43)	24	7.57 (4.75–11.5)	3.04 (2.01–4.60)	307,495
Filipino American	61	8.58 (6.44–11.2)	1.78 (1.37–2.31)	56	6.13 (4.55–8.09)	0.62 (0.48–0.81)	31	4.36 (2.87–6.31)	1.75 (1.21–2.53)	919,705
Korean American	211	70.0 (60.5–80.5)	14.5 (12.5–16.9)	17	6.32 (3.57–10.3)	0.64 (0.40–1.03)	55	17.4 (13.0–22.8)	6.98 (5.26–9.27)	340,185
South Asian American	19	8.68 (4.93–13.9)	1.80 (1.14–2.84)	17	4.93 (2.72–8.30)	0.50 (0.31–0.81)	—	—	—	373,710
Vietnamese American	103	27.8 (22.5–34.0)	5.77 (4.69–7.10)	16	4.11 (2.27–6.84)	0.42 (0.25–0.68)	32	8.03 (5.39–11.5)	3.22 (2.25–4.63)	444,600
Southeast Asian American	28	29.1 (18.6–43.2)	6.04 (4.14–8.82)	—	—	—	—	—	—	146,935
Women only										
NHW	496	2.78 (2.53–3.04)	Reference	331	1.89 (1.69–2.11)	Reference	271	1.55 (1.37–1.75)	Reference	17,101,893
NHB	149	8.94 (7.54–10.5)	3.22 (2.65–3.89)	33	1.97 (1.35–2.77)	1.04 (0.70–1.50)	51	2.94 (2.18–3.89)	1.90 (1.37–2.58)	1,910,859
Hispanic	719	11.5 (10.6–12.4)	4.13 (3.66–4.65)	117	1.81 (1.49–2.18)	0.96 (0.76–1.19)	307	4.70 (4.17–5.27)	3.03 (2.56–3.60)	7,293,635
Chinese American	181	14.2 (12.2–16.5)	5.12 (4.32–6.07)	25	1.96 (1.26–2.91)	1.04 (0.69–1.56)	58	4.42 (3.34–5.73)	2.85 (2.15–3.79)	1,385,275
Japanese American	64	11.4 (8.54–14.8)	4.08 (3.15–5.30)	15	2.55 (1.33–4.49)	1.35 (0.80–2.26)	33	6.45 (4.29–9.33)	4.16 (2.90–5.97)	427,240
Filipino American	67	5.66 (4.36–7.22)	2.04 (1.58–2.63)	16	1.27 (0.72–2.09)	0.67 (0.41–1.11)	27	2.28 (1.49–3.35)	1.47 (0.99–2.18)	1,349,675
Korean American	136	33.5 (28.0–39.7)	12.0 (9.96–14.6)	—	—	—	33	7.93 (5.42–11.2)	5.12 (3.56–7.34)	449,370
South Asian American	20	7.18 (4.24–11.3)	2.58 (1.65–4.04)	—	—	—	—	—	—	347,530
Vietnamese American	80	20.2 (15.9–25.2)	7.26 (5.73–9.19)	—	—	—	21	5.11 (3.10–7.90)	3.30 (2.11–5.14)	504,445
Southeast Asian American	20	14.7 (8.69–23.2)	5.29 (3.39–8.28)	—	—	—	—	—	—	191,570

[a]Population estimates were created using linear interpolation and extrapolation of decennial US Census data.
[b]Indicates case count <15.

Dyssynergic Defecation in Functional Dyspepsia

Huaman J-W, Mego M, Bendezú A, et al. Correction of dyssynergic defecation, but not fiber supplementation, reduces symptoms of functional dyspepsia in patients with constipation in a randomized trial. *Clinical Gastroenterology and Hepatology* 2020;18;2463–2470.

CGH

Summary

The pathophysiology of dyspepsia is largely unknown, but data indicate that dyspeptic patients have increased digestive system sensitivity, so that normally unperceived physiologic stimuli induce their symptoms. A large proportion of patients with functional dyspepsia also have functional constipation due to dyssynergic defecation. Huaman et al hypothesized that in patients with functional dyspepsia, constipation due to dyssynergic defecation facilitates or triggers dyspeptic symptoms, which, conversely, are alleviated by the correction of dyssynergic defecation. They performed a parallel trial at 2 referral centers in Spain, from June 2016 through January 2018, of 50 patients who fulfilled the Rome IV criteria for: a) functional dyspepsia with postprandial distress syndrome, b) functional constipation, and c) dyssynergic defecation. After a 2-week pretreatment phase, the patients were randomly assigned to groups that either learned to correct dyssynergic defecation (2–3 sessions of biofeedback combined with instructions for daily exercise; n = 25) or received dietary fiber supplementation (3.5 g plantago ovata per day; n = 25) for 4 weeks. The primary outcome was change in postprandial abdominal fullness, measured daily on a scale of 0–10, during the last 7 days of the treatment phase vs the last 7 days of the pretreatment phase. Anal gas evacuation was measured (using an event marker) during the last 2 days of the pretreatment vs treatment phases. Biofeedback treatment corrected dyssynergic defecation in 19/25 patients. Correction of dyssynergic defecation was associated with significant improvement of dyspeptic symptoms (postprandial fullness, postprandial distension, and postprandial discomfort/pain), digestive well-being, and mood, whereas fiber supplementation (n = 24) had no effect. In the intention-to-treat analysis, the effects of treatment differed significantly between the 2 groups, demonstrating a significant benefit of referral for anorectal biofeedback.

Clinical Practice Take-Home Points

- Meal-related symptoms of functional dyspepsia are aggravated by concomitant constipation, suggesting that uncorrected dyssynergia is an obstacle to effectively treating dyspepsia.
- A key issue is how to identify among patients with functional dyspepsia those who also have dyssynergic defecation. A plausible option seems to inquire about symptoms of chronic constipation and impaired defecation, even if not spontaneously volunteered because patients may ignore these complaints when consulting for dyspepsia, and if defecatory symptoms are present, anorectal testing may be performed.
- The authors' proof-of-concept study shows that correcting dyssynergia improves dyspeptic symptoms, but the intention-to-treat analysis further shows a significant benefit of referring patients with functional dyspepsia and dyssynergic defecation to anorectal biofeedback.

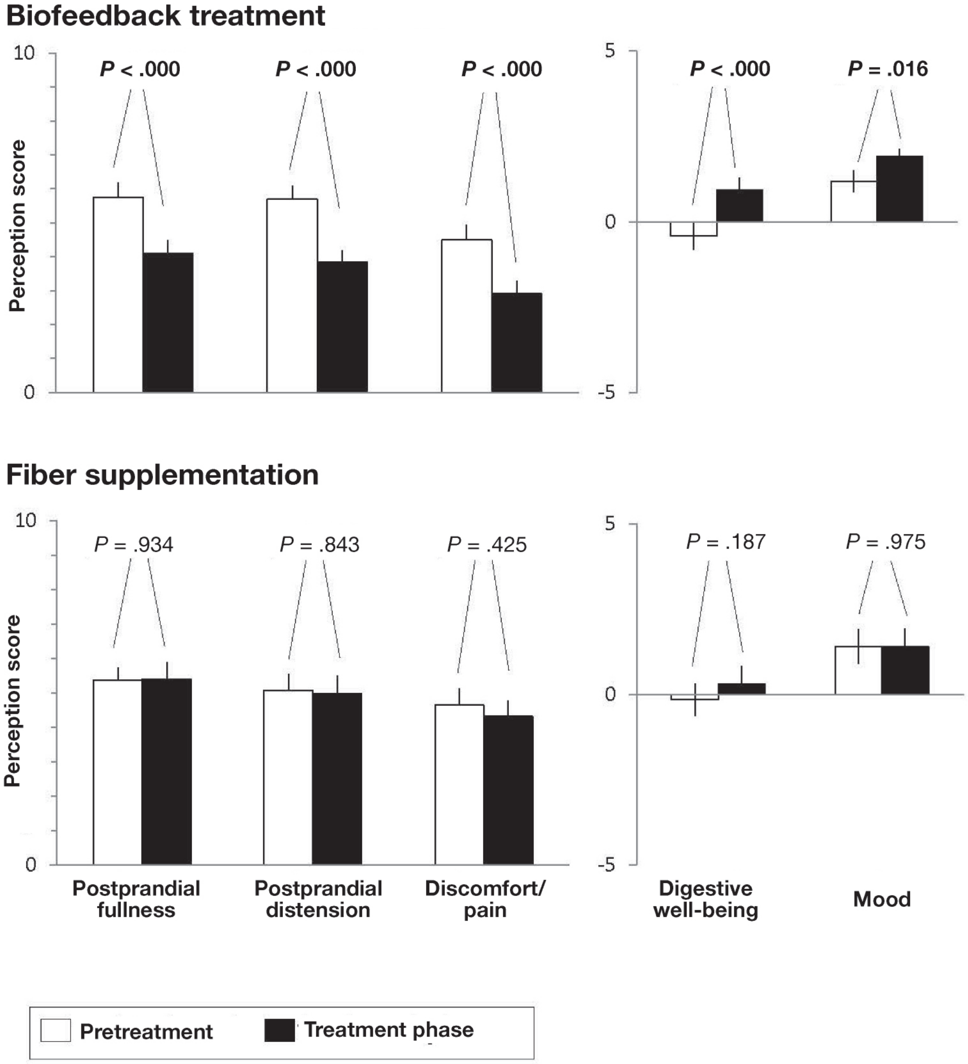

Figure 1. Effect of treatment on symptoms of dyspepsia and hedonic domain. Correction of dyssynergic defecation (n = 19) was associated with significant improvement of dyspeptic symptoms (postprandial fullness, postprandial distension, and postprandial discomfort or pain), digestive well-being, and mood, whereas fiber supplementation (n = 24) had no effect. In the intention-to-treat analysis, the effects of treatment were significantly different between groups for postprandial fullness (P = .003), distension (P = .003), discomfort or pain (P = .015), and mood (P = .036), and borderline significant for digestive well-being (P = .058).