THE EPIDEMIOLOGY OF GASTRIC CANCER IN THE UNITED STATES: A POPULATION-BASED STUDY

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Introduction

- Gastric cancer is the third leading cause of cancer-related mortality in the world.
- Although various epidemiologic and clinical characteristics are reported to be associated with the development of gastric cancer, there are no large studies that demonstrate their relative risk of gastric malignancy.

Aim

- Our study describes the prevalence of gastric cancer in the US population and quantifies the risk factors associated with the development of gastric cancer.

Methods

- Explorys Database
- Retrospective cohort 1999-2022
- Patients >18 years old
- Epidemiologic characteristics and risk factors were recorded for each group and compared.
- A univariate binary logistic model was constructed.

Results

- Demographic characteristics such as elderly (>65 years), male gender, Asian, African American, and Caucasian races were at higher odds of gastric cancer when compared with controls ($p < 0.0001$).
- Risk factors such as hypertension, diabetes mellitus, obesity, coronary atherosclerosis, end-stage renal disease, cirrhosis, congestive heart failure, alcohol abuse, tobacco use, family history of gastrointestinal cancer, H. pylori infection, history of gastritis, history of gastric ulcer, history of pernicious anemia and history of chronic atrophic gastritis were all associated with higher odds of gastric cancer ($P < 0.0001$).
- Finally, patients with history of intestinal polyposis syndrome were more likely to have gastric cancer ($P = 0.0001$)

	With Gastric cancer (n=34370)	Wo Gastric cancer (n=70306690)	OR (CI)	
Demographics				
Age >65	24,160 (70%)	47,922,349 (68%)	1.11 (1.08-1.13)	
Male	20,780 (60%)	31,380,250 (45%)	1.89 (1.86-1.94)	
Caucasian	22,780 (66%)	37,812,540 (54%)	1.69 (1.65-1.73)	
African American	5560 (16%)	7,014,930 (10%)	1.74 (1.69 to 1.79)	
Asian	1430 (4%)	1,119,980(2%)	2.68 (2.54 to 2.83)	
Comorbidities				
Diabetes	9570 (28%)	5,637,530 (8%)	4.43 (4.32-4.53)	
HTN	7290 (21%)	3,493,560 (5%)	5.15 (5.02-5.28)	
Obesity	5170 (15%)	5,431,330 (8%)	2.12 (2.05-2.18)	
Tobacco use	6610 (2%)	6,481,490 (9%)	2.35 (2.28-2.41)	
Cirrhosis	7290 (21%)	3,493,500 (5%)	5.15 (5.02-5.28)	
Coronary Atherosclerosis	8920 (26%)	3,724,220 (5%)	6.27 (6.12-6.42)	
CHF	5030 (15%)	1,829,140 (3%)	6.42 (6.23-6.61)	
ESRD	910 (3%)	416,780 (1%)	4.56 (4.27-4.87)	
Alcohol abuse	1500 (4%)	1,088,380 (2%)	2.87 (2.73-3.02)	

Risk factors of Gastric cancer				
Family hx of gastrointestinal cancer	1880 (6%)	593,480 (1%)	6.79 (6.49-7.12)	< 0.0001
H. pylori infection	430 (1%)	92,720 (0.13%)	9.59 (8.72-10.55)	< 0.0001
Hx of gastritis	9520 (28%)	3,322,240 (5%)	7.72 (7.54-7.91)	< 0.0001
Hx of gastric ulcer	4580 (13%)	354,050 (1%)	30.38 (29.44-31.34)	< 0.0001
Hx of pernicious anemia	680 (2%)	81310 (0.12%)	17.43 (16.15-18.81)	< 0.0001
Hx of chronic atrophic gastritis	2380 (7%)	261220 (0.4%)	19.95 (19.13-20.80)	< 0.0001
Hx of intestinal polyposis syndrome	10 (0.03%)	6060 (0.01%)	3.38 (1.82-6.28)	= 0.0001

Discussion

- In our large cohort of patients with primary malignant neoplasm of the stomach, we demonstrate an increased association of gastric cancer with several epidemiological and clinical risk factors. In the absence of screening practices, our study can help guide decision-making and facilitate the early diagnosis of gastric cancer.