Ethnic Disparities in Gastric Cancer Presentation and Screening Practice in the United States: An Analysis of 1997–2010 SEER-Medicare Data

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Describe differences in Helicobacter pylori (H. pylori) screening among a Surveillance, Epidemiology and End Results (SEER)-Medicare elderly population by ethnicity, place of birth, and gastric cancer (GC)-related conditions, as chronic infection with H. pylori is the strongest risk factor for distal GC. Methods: We used the National Cancer Institute's population-based SEER-Medicare cancer database for GC (1997–2010). We extracted demographic, location and disease staging information from the SEER data file, Patient Entitlement and Diagnosis Summary File. We obtained information on frequencies of various GC-related conditions (e.g., peptic ulcer, gastric ulcer, gastritis) and screening (H. pylori testing and endoscopy) from inpatient hospital and physician/outpatient services claims. Results: Data from 34,730 subjects were analyzed. The majority of Asian American/Pacific Islanders (AAPIs), 65.1%, were foreign-born, while majority of Non-Hispanic Whites (NHW), Hispanics and Blacks were US-born (88.7%, 51.3%, and 96.9%, respectively). NHWs were oldest at diagnosis (74.7 y.); Hispanic and Black cases were the youngest (72.4 and 72.9 y., respectively). For NHWs, the most frequently diagnosed GC site was the cardia (36.1%), while for AAPIs, Hispanics and Blacks, the most diagnosed sites were non-cardia (>80%, $P < 0.001$). Over 55% of NHW, Hispanic and Black cases were diagnosed at regional or distant stage, while 55% of AAPIs were diagnosed at local or regional stage. Over 57% of all cases had a history of GC-related conditions (AAPIs were highest at 64.1%). However, only 11.2% of total cases showed evidence of H. pylori testing. H. pylori testing was more frequent for foreign-born than US-born (2-fold increase in proportions) and AAPIs exhibited the highest proportion of H. pylori testing (22.6% among those with a GC-related condition). Conclusions: Screening for H. pylori was low for all GC cases, despite race/ethnic groups exhibiting conditions for which H. pylori testing is recommended. AAPI GC cases had the highest frequency of H. pylori testing with tumors staged locally or regionally; increased testing could lead to earlier stage of tumor at diagnosis. Future studies should investigate why screening rates are low in patients with GC-related conditions.

Published online March 2, 2018.
doi: 10.1158/1055-9965.EPI-18-0059

Race, Ethnicity, Socioeconomic Status and Site-specific Risk for Gastric Cancer

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Differences in gastric cancer risk by race/ethnicity have been reported but data on risk by anatomic subsite are lacking. We assessed site-specific differences in gastric cancer risk according to race/ethnicity and socioeconomic status. Methods: Participants included incident cases of gastric adenocarcinoma age >18 years in the Surveillance Epidemiology and End Results Program 2000–2014. Primary outcome was risk for incident gastric cancer, overall, and by anatomic subsite (cardia vs. non-cardia). Age-adjusted incidence rates were used to estimate adjusted incidence rate ratios (IRR) and their 95% confidence intervals (CI). Risk was assessed by race/ethnicity and neighborhood socioeconomic status (nSES). Results: We identified 77,881 cases of incident gastric cancer (n = 23,651 cardia; n = 35,825 non-cardia; n = 18,405 other). For all gastric cancers, adjusted IRRs (95% CI) were higher for blacks [1.72 (95% CI: 1.68–1.76)], Hispanics [1.77 (1.73–1.80)], and Asian/Pacific Islanders [2.12 (2.08–2.17)] compared to non-Hispanic whites. Opposite trends in risk for cardia vs. non-cardia cancer by race/ethnicity were observed. Compared to non- Hispanic whites, cardia IRRs (95% CI) were 0.55 (0.52–0.59) for blacks, 0.63 (0.60–0.66) for Hispanics, and 0.59 (0.56–0.62) for Asians/Pacific Islanders. Non-cardia IRRs (95% CI) were 2.78 (2.69–2.87) for blacks, 2.83 (2.75- 2.91) for Hispanics, and 3.86 (3.75–3.97) for Asians/Pacific Islanders relative to non-Hispanic whites. Increasing risk with decreasing nSES was observed for all gastric cancers (p trend < 0.0001), with moderate variation for non- cardia cancer but no substantial variation observed for cardia cancer. Conclusions. Gastric cancer incidence varies substantially by race/ethnicity and nSES, but with markedly different associations by anatomic subsite. Non-cardia cancer risk is higher among minorities than non-Hispanic whites and varies only moderately by nSES; while cardia cancer risk is lower among minorities and does not vary by nSES. Unique opportunities for addressing disparities exist for cardia and non-cardia gastric cancer.

Published online March 2, 2018.
doi: 10.1158/1055-9965.EPI-18-0060

Genetic Associations with Indoor Tanning Addiction

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Some young people are prone to develop addiction to indoor tanning along with psychiatric comorbidity. This study examined genetic hypotheses that liabilities in neurobiological addiction reward pathways influence risk of indoor tanning addiction and are affected by psychiatric comorbidity. Methods: Data were from an observational study investigating factors associated with indoor tanning addiction in a community sample of non-Hispanic white women ages 18–30 years with a history of indoor tanning in the past year. A total of 295 participants completed self-report measures and provided DNA samples. DNA samples were genotyped and analyzed for 36 single nucleotide polymorphisms (SNPs) in candidate genes involved in hypothesized addiction reward pathways (e.g., opioid and dopamine receptor genes). Self-report measures included indoor tanning frequency and dependence symptoms, appearance beliefs, and depressive symptoms. Results: Over 20% of the sample screened positive for indoor tanning addiction. Two SNPs in the DRD2 dopamine receptor gene, rs4436578 and rs4648318, were significantly associated ($P < 0.05$) with indoor tanning addiction after multiple testing adjustment using the false discovery rate. In logistic regression analyses adjusting for indoor tanning frequency, appearance beliefs, and depressive symptoms, homozygous major allele genotypes for both SNPs were associated with indoor tanning addiction (Odds Ratio [OR] 2.29, 95% Confidence Interval [CI] 1.11–4.77, and OR 1.95, 95% CI, 1.02–3.72,

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Cancer Epidemiol Biomarkers Prev 2018;27:356.