

Addressing Disparities in Cancer Care and Incorporating Precision Medicine for Minority Populations

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WEBINAR 3: Disparities in GI Cancers

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Introduction to Disparities in GI Cancers



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Incidence of gastrointestinal (GI) cancer and outcomes for patients vary considerably between racial and ethnic groups. GI cancer is responsible for 27% of all cancer deaths in the United States,^{1,2} and therefore, even small racial disparities have a large impact.

- GI cancers include cancers of the esophagus, stomach, pancreas, small intestine, liver, colon, rectum, and anus
- They are the most common types of cancer in the United States in terms of incidence, surpassing 3 other common cancers—breast, lung, and prostate. The yearly incidence of GI cancer is 286,480 individuals, resulting in 147,090 deaths
- GI cancers account for 4.5 million global deaths per year
- There has been a 22% increase in incidence of GI cancers for younger individuals (aged <50 years)

Introduction to Disparities in GI Cancers



Esophageal adenocarcinoma³

- Most common subtype in the United States and Northern Europe
- Accounts for 68% of esophageal cancer among White Americans

Esophageal squamous cell carcinoma³

- Most common subtype worldwide, especially in East Asia, Africa, and Southern Europe
- Accounts for 80% of esophageal cancer among African Americans

Gastric carcinoma³

- Asian/Pacific Islander men displayed the highest incidence and mortality when compared with all other groups and genders, with 14.0 new cases per 100,000 and 7.1 deaths per 100,000
- Black patients developed gastric cancer at nearly the same rate as Asian/Pacific Islander patients
- Black patients are more likely to have more aggressive disease

Small intestine cancer³

- Rare cancer, but non-Hispanic Black individuals have the highest rates



Pancreatic cancer³

In addition to having the highest incidence of pancreatic cancer, Black individuals also have the worst prognosis of all populations in the United States

- Black patients present with more advanced disease, are less likely to receive standard-of-care treatment, and have worse unadjusted survival⁴

Anal cancer

- Communities with a higher proportion of individuals living in poverty and a higher proportion of racial/ethnic minority groups bear the highest incidence of disease⁴

Liver cancer³

Highest incidence and death rates for hepatocellular carcinoma (HCC) in the United States are among

- Asian American individuals, likely due to the prevalence of hepatitis B virus (HBV) vertical transmission in this population
- Hispanic individuals, likely due to the prevalence of non-alcoholic fatty liver disease (NAFLD) and hepatitis C virus (HCV) in this population
- American Indian/Alaskan natives and Black individuals

Colorectal cancer³

- Black individuals have the highest incidence and death rates for colorectal cancer (CRC), whereas Hispanic and Asian/Pacific Islander individuals have the lowest rates³
- Black patients have a distribution of CRC that favors metastatic disease compared with non-Hispanic White patients³
- Black patients display a higher frequency of KRAS mutations in tumors, increasing the aggressiveness of the CRC³
- Black patients are more likely to be diagnosed at an earlier age, with more advanced and more aggressive disease³
- The age of diagnosis has been decreasing across all races, which is likely to lead to increased incidence for African Americans⁵

- Disparities in incidence are influenced by inequalities in exposure to risk factors like diet and infectious diseases³
- Disparities in mortality rates are influenced by access to screening, standard-of-care treatments, and by tumor biology
- The African American population has a higher incidence of and mortality from stomach, pancreatic, small intestine, liver, and colorectal cancers compared with White Americans

Black patients are more likely to be diagnosed with more advanced stage disease



Surgical rates for Black patients were low relative to those for White patients. Adjustment for age, stage, and comorbidities revealed even lower odds of receiving surgery³



Receipt of surgery and socioeconomic factors had the greatest influence on the survival disparity in GI cancers⁶



Other social determinants of health affect survival (social injustice, living environments, education, etc)

Racial disparities in cancer occurrence and outcomes arise from disparities across the cancer care continuum. Below are examples of how racial disparities affect cancer outcomes.



Exposure to Risk Factors

Structural racism leads to higher exposure to risk factors. Due to banking policies such as “redlining,” minority communities are more likely to be located near waste sites and less likely to have access to resources like fresh foods; both of those factors can contribute to higher rates of cancer⁷

Esophageal squamous cell carcinoma³

- Primary risk factors are alcohol and tobacco use
- Variants in genes involved in alcohol metabolism confer increased risk of squamous cell carcinoma (SCC) among Asian individuals

Gastric cancer³

- Risk factors include *Helicobacter pylori* infection, tobacco use, and obesity

Liver cancer³

- The prevalence of HBV vertical transmission is a risk factor in Asian American individuals
- In Hispanic individuals NAFLD and HCV are potential risk factors

Pancreatic cancer

- Risk factors include family history (not linked to race/ethnicity), tobacco use, diabetes, obesity, and chronic pancreatitis³
- Geographic region, income, education level, insurance status, and facility type, but not race/ethnicity, were associated with survival in a multivariable model in which all variables were analyzed⁸

Anal cancer

- Smoking is reported as a risk factor that correlates with anal cancer, especially in patients with human papilloma virus (HPV) infection³

Racial disparities in cancer occurrence and outcomes arise from disparities across the cancer care continuum. Below are examples of how racial disparities affect cancer outcomes.



Prevention

Population-specific screening and prevention programs are warranted for esophageal SCC in Black men who use alcohol and tobacco³

HPV vaccination can prevent anal cancer; however, vaccination rates among African American individuals are lower compared with those in White individuals even when adjusted for socioeconomic status⁹

HBV vaccination and treatment, hepatitis C virus treatment, HCC surveillance in high-risk populations, and societal efforts to curb obesity and treat metabolic syndrome with statins and metformin may alter the risk projections in these populations for liver cancer



Early Detection

Disparities in CRC outcomes can be attributed in part to lower screening rates and more advanced disease at diagnosis



Access to Treatment

African American patients are less likely to receive the standard of care, and when treatment is equalized, the disparities in outcomes can disappear¹⁰

Access to centers with experience in treating esophageal and pancreatic cancers in particular are linked to improved outcomes

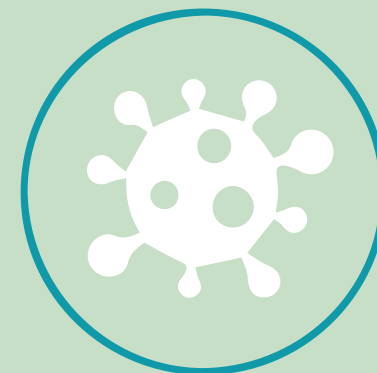
Addressing Disparities



- Representation in Clinical Trials
 - Providers can work to ensure clinical trials are more inclusive. Engage patients in the research process and reevaluate inclusion criteria to ensure therapies are effective and safe in all populations
- Patient Navigators and Community Outreach to Increase Access to Screening
 - Patient navigators intervened on the social and community level and provided support to help vulnerable populations overcome the anxiety and barriers they faced navigating the complex healthcare system¹¹
 - Investing in navigation services throughout the continuum of preventive care has been shown to improve successful screening uptake, diagnosis, and follow-up, resulting in earlier diagnoses and treatment and eventually contributing to gains in quality-adjusted life years¹¹
- Access to Standard of Care
 - Receipt of surgery and socioeconomic factors had the greatest impact on the survival disparity of GI cancers⁶
 - Centralize care for esophageal, gastric, and pancreatic cancer at specialized centers⁸
- Social Determinants of Health
 - A construct to address social determinants of health promotes recognition of structural inequities, institutional environments, living environments, risk factors, and the spectrum of cancer comorbidities²

Effect of COVID-19 on Disparities in Cancer Care

- The effects of the pandemic have highlighted disparities in access to care, and one major effect is delayed screening for cancer. It is estimated that over the next 10 years, delays in cancer screening will result in up to 10,000 excess deaths from breast cancer and CRC.¹²



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