Studies Identify Associations and Disparities in Colorectal Cancer Care

Identifying these trends and disparities is just one step towards improved colorectal cancer care.

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There is little known about the connection between various factors (such as environmental quality index, unmet needs, cancer survivorship, etc.) and the outcomes of patients affected by colorectal cancer (CRC). Studying the trends and associations around the onset and progression of CRC is integral to educating people on risk reduction. Additionally, using a disparity lens can aid decision-making processes and allow providers to target high-risk populations who may be in need of greater assistance and care.

Several such studies were presented at the 2022 annual meeting of the American Society of Clinical Oncology. For example, Suleyman Yasin Goksu and team studied **the association of young-onset CRC with the national level Environmental Quality Index (EQI).** Their greatest finding? YOCRC can be linked to lower environmental quality. Additionally, Megan E. Delisle and team identified **the association between unmet needs** (in the physical, emotional, and practical sense) **and survivors' utilization of emergency services** in the first three years following treatment. They found that a greater amount of unmet needs could be linked to higher utilization of emergency services–which is an issue that can be resolved through preventative measures. Both these studies reach important conclusions regarding how we draw patterns from disease.

Here are some other studies from ASCO that dived into disparities and early-age onset CRC (EAO-CRC) outcomes:

1. **Disparity of treatment-related adverse events and outcome in patients with early-onset metastatic colorectal cancer (mCRC).** With the marked rise of early-onset metastatic CRC (mCRC), there is a gap in diagnosis and adverse events related to treatment. Patient outcomes have not been conclusively studied, so Lingbin Meng and team reviewed the potential age-related disparity and its causes. Using individual patient data from three clinical trials in Project Data Sphere, patients were categorized into three age groups and sorted by adverse events. Patients younger than 50 had shorter median overall survival, higher incidence of toxicity (abdominal pain, severe anemia, and nausea/vomiting), but lower incidence of severe diarrhea, neutropenia, and fatigue. This group had the earliest onset of these adverse events and was associated with worse overall survival. Some of these disparities may be explained by distinct genetic profiles, but overall, patients with early-onset mCRC had worse outcomes and endured greater overall treatment-related adverse events.

This study provides a basis for developing a personalized treatment plan when selecting patients for chemotherapy, providing counseling, and monitoring adverse events.

2. **Modifiable and non-modifiable risk factors associated with early-onset colorectal cancer: Analysis of the National Health Interview Survey.** Risk factors for EAO-CRC are largely understudied, while on the other hand, there is a rapid increase in incidence. Hyeun Ah Kang and Yahan Zhang of The University of Texas at Austin studied modifiable and non-modifiable risk factors associated with the rise. Their cross sectional study analyzed data from the 2004-2018 National Health Interview Survey (NHIS). Individuals between the ages of 18 and 49 with a history of CRC diagnosis at the time of the interview were compared with their non-cancer counterparts. Additionally, the researchers also compared their non–age-related characteristics to those with late-onset CRC, meaning after 50. One hundred and fifty six patients with EAO-CRC were identified. Results from the comparisons showed that greater odds of EAO-CRC were associated with older age, living in the Midwest, and history of alcohol consumption. Lower odds were associated with Hispanic or Asian race and a lifestyle of vigorous physical activity. This study points to both modifiable and non-modifiable characteristics of EAO-CRC risk. Further studies can help identify the associated risk in-depth.
3. **Racial disparities in receipt of guideline-concordant care for early-onset colorectal cancer in the U.S.** Black patients diagnosed with EAO-CRC have worse survival than their white counterparts, even in lieu of early-stage disease. Leticia M. Nogueira and team studied these racial disparities, with specific focus on guidance-concordant cancer care.The study included newly diagnosed non-Hispanic black and white individuals between the ages of 20 and 49. Demographics, comorbidities, and insurance coverage were added to multivariable models to predict their contribution in the disparities with quality measures. Out of the 84,728 colon and 62,483 rectal cancer patients, 20.8% and 14.5%, respectively, were black. They were less likely to receive guideline-concordant care than white patients, which was primarily driven by insurance coverage rather than demographics or comorbidities. Overall, black patients received worse and less timely care than their white peers. Health insurance, a modifiable factor, was identified as the largest contributor to this gap. This study suggests that access to care can significantly influence EAO-CRC outcomes.
4. **Racial parity in rectal cancer treatment and outcomes within an integrated healthcare system.** Hyunjee V. Kwak and team also looked at the survival outcomes of patients in the context of their race. They conducted a retrospective study of patients at the Kaiser Permanente Northern California health system, who were treated between 2010-2019. The study included over 3,500 patients diagnosed with rectal adenocarcinoma. Using self-reported race information, various analyses evaluated differences in race, age, stage of diagnosis, treatment, and overall survival. There was a greater proportion of Black patients with localized disease, who also had the longest overall survival. Hispanic patients were more likely to be male, younger, and have a shorter overall survival. These results show a gap in survival outcomes for patients treated at a large integrated healthcare system, where access to care is roughly equal. This calls for an improvement in outreach and screening, as well as awareness in these communities.
5. **Trends and disparities in the treatment of older adults with colon cancer.** Half of the patients diagnosed with colon cancer are aged above 70, yet there is a huge gap in treatment for this population. Most are undertreated, perhaps due to age-related biases. Philip Q. Ding and team looked at age-related disparities in the realm of CRC care. Their retrospective, population-based study of adults diagnosed with CRC between 2010 and 2018 in Alberta, Canada included more than 10,000 patients, 48% of whom were over 70 years old. Upon further examination, it was found that older age correlated with more comorbidities and

> less advanced disease. Despite this, there was no statistically significant correlation between age and treatment status. As compared to the younger group, the odds of receiving surgery and systemic therapy were three and five times lower (respectively) among older patients. These two interventions continue to improve the outcomes of colon cancer in old and young patients alike, but the rates of treatment were lower in older patients and with minimal change over time. This study highlights a disparity in CRC care within the geriatric population.

Identifying these trends and disparities is just one step towards improved CRC care. It empowers patients to identify their personal risk and also gives their provider another factor to consider for treatment and prognosis. Understanding these correlations may be the next step in eliminating the gap in care for many populations.

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