Published in final edited form as:

Gastroenterology. 2015 November ; 149(6): 1302–1304. doi:10.1053/j.gastro.2015.08.033.

Reducing Colorectal Cancer Risk Among African Americans

SONIA S. KUPFER*,

University of Chicago, Chicago, Illinois

ROTONYA M. CARR*, and

University of Pennsylvania, Philadelphia, Pennsylvania

JOHN M. CARETHERS

University of Michigan, Ann Arbor, Michigan

Colorectal cancer (CRC) burden is not equal among populations in the United States. African Americans have the highest CRC incidence and mortality of all US populations, and rates are not decreasing to the levels of non-Hispanic Whites.¹ In addition to increased cancer risk, adenoma risk is also higher in African Americans, and both adenomas and cancers occur more frequently in the proximal colon and at younger ages in African Americans.² Reasons for population differences are multifactorial and include differences in tumor biology and behavior, genetic risk, access to health care, and screening rates.^{3,4} As demonstrated by the Delaware CRC screening program, strategies to maximize screening hold significant promise for correcting CRC disparities.⁵

Current US Multisociety Task Force guidelines recommend CRC screening for all populations at average risk beginning at age 50 years, and individuals at increased risk (such as those with family history, inherited genetic syndromes or inflammatory bowel disease) are recommended to begin screening earlier.⁶ Owing to increased and earlier neoplasia risk, some professional organizations recommend screening in African Americans starting at age 45.³ Others raise concerns about the impact of complicating existing standardized guidelines and the unclear benefit of earlier age screening in African Americans despite an increased proportion of CRC under the age of 50 years. They recommend that efforts should focus instead on improving screening efforts in African Americans starting at age 50. Given this controversy, it is timely to examine how our profession can take the lead in reducing CRC disparities among African Americans. Several strategies should be considered when prioritizing our efforts (Table 1).

African Americans are less knowledgeable about CRC and screening guidelines compared with Caucasians,⁷ and are less likely to transmit a family history of cancer.⁴ Both lack of knowledge about screening benefits and fatalistic views about cancer are associated with reduced likelihood of screening among African Americans.⁸ Interventions designed to

Reprint requests Address requests for reprints to: John M. Carethers, MD, Division of Gastroenterology, Department of Internal Medicine, University of Michigan, 1500 E. Medical Center Drive, Ann Arbor, Ann Arbor, Michigan, 48109-5368. jcarethe@umich.edu.

* Authors share co-first authorship.

Conflicts of interest

The authors disclose no conflicts.

educate patients about CRC and screening guidelines can improve screening rates and attitudes,^{9,10} and those that contain culturally sensitive materials have been shown to boost screening among African Americans.⁹ These and other studies suggest that lack of knowledge about CRC screening benefits is a surmountable barrier, but challenges remain. For example, 40% of African Americans aged 65 years and older in some US areas are estimated to read below a 5th-grade level,⁹ limiting the use of some CRC screening materials. In addition, standardized patient education approaches may not work in all populations and age groups, potentially necessitating individualized interventions and inclusion of personnel to engage in community-based education and outreach.

The impact of provider endorsement on screening rates cannot be under-estimated. Lack of provider recommendation is an important barrier to screening in African Americans.¹¹ However, studies that evaluate the impact of provider education on CRC screening in African Americans are lacking. Continuing medical education seminars can increase CRC knowledge, but whether this translates to improved screening rates is not clear.¹² Just as there are no standardized approaches for patient education, there are no standardized strategies to improve provider education. Moreover, providers cite insufficient time as a barrier to recommending CRC screening to patients,¹³ potentially causing additional delay in timely CRC screening for this higher risk population. Strategies focused on physician education about the increased CRC burden among African Americans may improve CRC screening, but more research is needed to demonstrate this.

Patient navigation is a proven strategy for increasing CRC screening rates in African Americans and also improves no show rates and bowel preparation.^{3,14} A randomized trial in older African Americans of phone navigation and printed material versus printed material alone found a 53% increase in endoscopic screening in the navigation group with health literate subjects showing a stronger effect from navigation.¹⁴ Financial modeling based on a program in New York City found patient navigation to be cost effective,¹⁵ whereas a randomized trial noted greater costs for tailored navigation.¹⁶ Implementation of patient navigation from research studies into the “real world” can be complex and requires flexibility and cooperation among stakeholders.¹⁷ Thus, although patient navigation can increase screening among African Americans, logistics and cost are major barriers to widespread adoption. Efforts should focus on overcoming these barriers through education, research, and advocacy for patient navigation in CRC screening.

A more controversial strategy is to lower the initial screening age recommendation for African Americans. Arguments supporting this strategy include increased rates of significant neoplasia, higher stage of CRC at younger ages, and proximal location of tumors among African Americans.³ Lieberman et al² showed that the rate of high risk polyps (>9 mm) was increased 17%–38% in African American men ages 50–69 years and 25%–50% in African American women ages 50–64 years compared with Caucasian men and women in these age groups. Although the risk of large polyps was not statistically different for African American men and women <50, the sample size was small, limiting power to detect true differences in this subgroup. A simulation study argued in favor of earlier screening in African Americans as well as shortening screening intervals by 1 year given significant life-years gained.¹⁸ Moreover, higher prevalence of proximal neoplasia in African Americans argues for

colonoscopy as the preferred endoscopic screening modality. If we consider race as a heritable factor,⁴ changing screening recommendations is akin to how we already risk stratify based on family history, and has the potential to prevent CRC among younger African Americans who currently are not detected early enough. Population-specific screening also raises awareness of the increased CRC burden in African Americans and could increase screening overall.

Arguments against changing initial screening age guidelines for African Americans include the lack of definitive evidence for increased neoplasia risk and screening benefit before age 50 years.^{2,19} To address this, a comparative effectiveness trial enrolling those starting screening before age 50 and at age 50 could be performed. Another argument is that the current screening guidelines are already complex and that population-based screening recommendations would further confuse patients and physicians. Further modifications to guidelines could potentially negatively impact screening knowledge and adherence; however, there are no studies to support this notion. Although changes in breast and prostate cancer screening led to some public confusion,^{20,21} this was largely based on less intensified and reduced screening, not more. Given that African Americans have been shown to prefer non-endoscopy-based screening examinations,²² perhaps focusing less on structural examinations and simplifying the message to encourage screening of any kind that is acceptable to the patient is the most appropriate initial comprehensive strategy. Increasing screening rates by 5%–10% has been argued to be as or more effective than reducing the screening age.¹⁹ Although screening rates have been improving among African Americans and the gap with Caucasians is closing, there is certainly more work to be done. Finally, insurance coverage and access to endoscopy resources for earlier screening is a real concern and likely will only be changed if there is consensus among all bodies authoring screening guidelines.

CRC burden among African Americans is unacceptably high, representing a major health disparity, and there are surmountable barriers to reduce this disparity. Patient and physician education as well as implementation of patient navigators can increase screening rates and should receive considerable attention. Whether implementing new population-specific screening guidelines will augment these efforts remains unclear; however, it is now time for our profession to establish consensus on this issue by establishing an expert panel to review the data and formulate updated evidence-based guidelines to reduce CRC disparities in African Americans, including a formal recommendation regarding the optimal screening age and modality. Such efforts will help us to make progress on health equity for all populations at risk for CRC and form a basis for an approach to care in this high risk population.

Acknowledgments

Funding

Supported by the United States Public Health Service (R01 DK067287 and U01 CA162147 (to JMC), K08 CA142892 (to SSK), and K08 AA021424 and P30 DK50306 pilot and feasibility grant (to RMC); the A. Alfred Taubman Medical Research Institute of the University of Michigan (to JMC); the University of Pennsylvania IDOM Diabetes Research Center Metabolomics Pilot Award (to RMC); and the Robert Wood Johnson Foundation-Harold Amos Medical Faculty Development Award #71586 (to RMC). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

References

1. American Cancer Society. Cancer facts and figures 2015. American Cancer Society; Atlanta, GA: 2015.
2. Lieberman DA, Williams JL, Holub JL, et al. Race, ethnicity, and sex affect risk for polyps >9 mm in average-risk individuals. *Gastroenterology*. 2014; 147:351–358. [PubMed: 24786894]
3. Tammana VS, Laiyemo AO. Colorectal cancer disparities: issues, controversies and solutions. *World J Gastroenterol*. 2014; 20:869–876. [PubMed: 24574761]
4. Carethers JM. Screening for colorectal cancer in African Americans: determinants and rationale for an earlier age to commence screening. *Dig Dis Sci*. 2015; 60:711–721. [PubMed: 25540085]
5. Grubbs SS, Polite BN, Carney J Jr, et al. Eliminating racial disparities in colorectal cancer in the real world: it took a village. *J Clin Oncol*. 2013; 31:1928–1930. [PubMed: 23589553]
6. Levin B, Lieberman DA, McFarland B, et al. Screening and surveillance for the early detection of colorectal cancer and adenomatous polyps, 2008: a joint guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *CA Cancer J Clin*. 2008; 58:130–160. [PubMed: 18322143]
7. Philip EJ, DuHamel K, Jandorf L. Evaluating the impact of an educational intervention to increase CRC screening rates in the African American community: a preliminary study. *Cancer Cause Control*. 2010; 21:1685–1691.
8. Greiner KA, Born W, Nollen N, et al. Knowledge and perceptions of colorectal cancer screening among urban African Americans. *J Gen Intern Med*. 2005; 20:977–983. [PubMed: 16307620]
9. Powe BD, Ntekop E, Barron M. An intervention study to increase colorectal cancer knowledge and screening among community elders. *Public Health Nurs*. 2004; 21:435–442. [PubMed: 15363024]
10. Greiner KA, Daley CM, Epp A, et al. Implementation intentions and colorectal screening: a randomized trial in safety-net clinics. *Am J Prev Med*. 2014; 47:703–714. [PubMed: 25455115]
11. May FP, Almario CV, Ponce N, et al. Racial minorities are more likely than whites to report lack of provider recommendation for colon cancer screening. *Am J Gastroenterol*. May 12, 2015 Epub ahead of print.
12. Nguyen BH, Pham JT, Chew RA, et al. Effectiveness of continuing medical education in increasing colorectal cancer screening knowledge among Vietnamese American physicians. *J Healthcare Poor Underserved*. 2010; 21:568–581.
13. Guerra CE, Schwartz JS, Armstrong K, et al. Barriers of and facilitators to physician recommendation of colorectal cancer screening. *J Gen Intern Med*. 2007; 22:1681–1688. [PubMed: 17939007]
14. Horne HN, Phelan-Emrick DF, Pollack CE, et al. Effect of patient navigation on colorectal cancer screening in a community-based randomized controlled trial of urban African American adults. *Cancer Cause Control*. 2015; 26:239–246.
15. Ladabaum U, Mannalithara A, Jandorf L, et al. Cost-effectiveness of patient navigation to increase adherence with screening colonoscopy among minority individuals. *Cancer*. 2015; 121:1088–1097. [PubMed: 25492455]
16. Lairson DR, Dicarlo M, Deshmuk AA, et al. Cost-effectiveness of a standard intervention versus a navigated intervention on colorectal cancer screening use in primary care. *Cancer*. 2014; 120:1042–1049. [PubMed: 24435411]
17. Sly JR, Jandorf L, Dhulkifl R, et al. Challenges to replicating evidence-based research in real-world settings: training African-American peers as patient navigators for colon cancer screening. *J Cancer Educ*. 2012; 27:680–686. [PubMed: 22791543]
18. Lansdorp-Vogelaar I, van Ballegooijen M, Zauber AG, et al. Individualizing colonoscopy screening by sex and race. *Gastrointest Endosc*. 2009; 70:96–108. e1-24. [PubMed: 19467539]
19. Gupta A, Ahlquist DA. The effectiveness of colonoscopy in reducing mortality from colorectal cancer. *Ann Intern Med*. 2009; 150:817. [PubMed: 19487721]
20. Harvey SC, Vegesna A, Mass S, et al. Understanding patient options, utilization patterns, and burdens associated with breast cancer screening. *J Womens Health*. 2014; 23(Suppl 1):S3–S9.

21. Moyer, CS. Conflicting data cause confusion on prostate cancer screening. 2012. Available at: www.amednews.com/article/20120813/health/308139946/4/. Accessed July 30, 2015
22. Inadomi JM, Vijan S, Janz NK, et al. Adherence to colorectal cancer screening: a randomized clinical trial of competing strategies. Arch Intern Med. 2012; 172:575–582. [PubMed: 22493463]

Table 1

Strategies to Decrease Disparities in Colorectal Cancer (CRC) Among African Americans (AAs)

Strategy	Advantages	Disadvantages
Patient education	Direct to consumer Addresses patient-level barriers (eg, fear, mistrust, etc)	Cost Ability to effectively reach certain target populations (ie, those with low health literacy)
Provider education	Addresses lower rates of provider recommended screening of AAs	No data on effectiveness Cost Broad target population (eg, gastroenterologists, primary care)
Patient navigation	Evidence for benefit in increasing colonoscopy screening for AAs Cost effective	Cost and insurance coverage Training Implementation
Increased screening by any method at age 50	Addresses lower screening rates among AAs Most CRCs develop after age 50 AAs might prefer noncolonoscopy screening	Confusion about preferred modality AAs have increased risk of right-sided neoplasia
Modify age for screening	Reduces burden of early-onset disease Raises awareness of increased risk Life-years gained by earlier screening	Increased confusion in guidelines No prospective study of effectiveness Most CRCs develop after age 50