

COLON CANCER: UPDATE ON TREATMENT. ARE OUTCOME DISPARITIES REAL?

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INTRODUCTION

To review this topic related to colon cancer, treatment, and disparities found in ethnic minority populations, 4 areas will be addressed: 1) colon cancer incidence among minority populations, especially African Americans; 2) data supporting outcome disparities; 3) screening and surveillance methods for detection of colon cancer; and 4) treatment options and future direction for the management of colon cancer.

BACKGROUND

Colon cancer can be detected through screening; 4 conditions allow for the successful discovery and subsequent treatment of tumors: 1) the disease is very common (the third most common solid tumor after lung and breast in females and prostate and lung in males)¹; 2) colon cancer is lethal if left untreated, providing impetus for early detection; 3) a long pre-symptomatic growth time (it takes anywhere from 5 to 10 years to grow from a small polyp to a full cancer) allows ample time for discovery; 4) if discovered early, colon cancer has a very high rate of successful treatment.

COLON CANCER INCIDENCE FOUND IN MINORITY POPULATIONS AND OUTCOME DISPARITIES

We often ask the question, "Are outcome disparities real?" Research findings answer the question with a very resounding "yes," as data that follow will

demonstrate. Both the incidence and death rates for colon cancer are highest among Blacks; rates are intermediate in Whites and Asian Pacific Islanders and are lowest in the American Indians, Alaskan natives, and Hispanics.¹ As shown in Table 1, from 1992 to 1998, the death rate from colon cancer in African Americans was more than twice the rate for Hispanics, American Indians, and Alaskan natives.¹ For African Americans, the incidence was 50.1 per 100,000, which is the highest rate, followed by Whites, Asian Pacific, American Indians, Alaskan natives, and Hispanic men, which had the lowest rates. Much of the data for this study was collected in California, which has a large Hispanic population. The Hispanic population in this study group represented a migrant population comprised of first generation Americans from several different countries; it is possible that the study sample was not as homogeneous as we would like for the purposes of statistics. However, we need to keep a close eye on this data because the Hispanic population is the fastest growing minority group in the United States.² As Hispanics become "Americanized," they will acquire eating (and other) habits of other Americans and perhaps an increase in the cancer rate will be seen for this group.

As for cancer survival rates, the highest survival rate is among White males, followed by White females, then African-American females, and finally African-American males with the lowest survival rates.¹ These trends are evident for both colon and rectal cancer, which are regarded as slightly different entities. The overall survival rate for Whites is about 61% compared to survival rates for African Americans of approximately 50%.^{1,5}

It is estimated that for 2002, 148,300 new cases of colon cancer are expected to be reported throughout the United States,¹ which is similar to the new case numbers for 2001. Approximately 56,600 colon cancer deaths are expected for 2002, again, at the same rate as the previous year.¹ In Georgia alone, the number of new cases expected for 2002 is 3,200 and approximately 1,200 deaths from colon cancer will be reported.¹

The lifetime risk for all populations for colon cancer is 6%. There is a 61% 5-year survival rate for all ethnic groups combined,³ but for African Americans, as already stated, this number is closer to 50%.

But, there is some good news. Some evidence suggests a recent decline in the occurrence and death from colorectal cancer in African Americans,³ although little is known about what is causing this decline and if it will be sustained. Some believe that it may be a reflection of the decrease in the incidence rate and an increase in survival for colon cancer.³ Possible etiologies could be that we have increased screening and the use of estrogen therapy, and have made modifications in diet to include more fiber and less fat. Perhaps the increased colorectal screenings in the 1990s and the removal of polyps are contributing to this decline.

SCREENING AND SURVEILLANCE METHODS FOR DETECTION OF COLON CANCER

There are several screening methods that are commonly used for the detection of colon cancer.⁶ First, the fecal occult blood test should be conducted annually by the primary care physician on all patients 50 years of age and older. To be conducted properly, the fecal occult test should not be done via a rectal exam but on defecated stool. The patient should be given the hemocult cards and

Incidence and mortality rates from colorectal cancer by race and ethnicity, 1992–1998. Men and women combined^a

Race/Ethnic Group	Incidence	Mortality
Black	50.1	22.8
White	42.9	16.8
Asian/Pacific Islander	38.2	10.7
American Indian/Alaskan Native	28.6	10.3
Hispanic	28.4	10.2

^a Source: Adapted from National Cancer Institute Surveillance, Epidemiology, and End Results Program, 2001.

allowed to collect 3 consecutive spontaneous stools. The screening kit comes with a little spatula and the patient is able to provide a sample of the stool, as opposed to a stool sample obtained by the physician traumatically during a rectal exam.

Another screening procedure, flexible sigmoidoscopy, has been used for years. Unfortunately, the flexible sigmoidoscope is approximately 60 cm long and can only be used to visualize the colon at the level of splenic flexure in the descending colon and thus, only half of the colon is being examined.

Double-contrast barium enema has its drawbacks as a screening x-ray test. Normally, this method is combined with a flexible sigmoidoscopy because the double-contrast barium enema is notoriously unreliable in evaluating the area around the rectum. To conduct the double-contrast barium enema, the radiologist places the barium into the colon and then pumps up a balloon in the rectum to retain the barium. The result is that the ano-rectal anatomy is distorted and small polyps can easily be missed. A barium enema should always be combined with a flexible sigmoidoscope.

Cost of screening must be taken into consideration, as cost may influence patient compliance with screening recommendations. The good news is that, as of third quarter 2001, Medicare Part B covers one screening colonoscopy every 10 years; this should be viewed as the gold standard. As more and more insurance carriers begin to follow this

recommendation by paying for screening colonoscopies, early detection of colon cancer should lead to improved treatment outcomes for all population groups.⁷

Fecal occult, which should still be used, is the least expensive method of screening, with an average cost of \$20. Flexible sigmoidoscopy costs from \$150 to \$200; however, decreasing reimbursements have been seen lately, with \$100 often the typical reimbursement rate. A double-contrast barium enema costs between \$300 to \$400, while colonoscopy costs the patient \$1,000 or more. Since surgery as treatment for colon cancer could cost anywhere from \$25,000 to \$45,000, it is imperative to catch colon cancer in the early stage, or at least remove polyps prior to surgery, to avoid the financial burden to our patients. More efforts are needed to fund screening tests rather than waiting for the cancer to appear and thus require surgery.

TREATMENT OPTIONS FOR THE MANAGEMENT OF COLON CANCER

Aside from removing a polyp, which we can do with a colonoscope, treatment options for colon cancer are limited to surgery, radiation, and chemotherapy. Surgery is the only definitive treatment for colon cancer, while radiation and chemotherapy are regarded as adjuvant therapy.

To understand surgery and other

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therapies for colon cancer treatment, it is important to know the stages of colon cancer. The colon cancer staging is broken down into Duke A, B, C, and D. Duke A is cancer limited to the mucosa/submucosal layer. Duke B represents cancer that has more or less penetrated through the muscularis propria. Duke C means lymph node spread and Duke D is distant metastasis. As with most cancers, if discovered at an early stage, cancer can be cured by surgical methods, as opposed to metastatic disease where the treatment options are limited to palliation.

Depending on the extent of the cancer, surgery options include polypectomy, local excision, and segmental resection. Many people think that colon cancer surgery means the need for a colostomy bag; however, this is a myth and a colostomy bag is rarely needed, except for cancers located very low in the rectum. With the modern surgical methods, a colostomy can be avoided.

Radiation is used primarily for rectal cancers, as opposed to colon cancers, and specifically for Duke C rectal cancer. Radiation has a very limited use but controls pain and other symptoms; unfortunately, it has not been shown to improve survival rate.¹

Finally, chemotherapy is used periodically on remaining cancer cells and to prevent recurrence. The most common chemotherapeutic regimen is 5-Fluorouracil used in conjunction with

levamisole or leucovorin. A new drug, Irinotecan, has been used for metastatic disease but it is regarded as second-line chemotherapy.

FUTURE STRATEGIES FOR COLON CANCER DETECTION AND TREATMENT

Although surgical, radiation and pharmacological approaches of today have had some success in curbing the rates of colon cancer, what are our future strategies? Most importantly, we need to improve methods to identify populations at risk. As mentioned previously, the higher prevalence rates of colon cancer among ethnic groups indicate that these populations should be targeted. However, even for all populations, screening methods should be emphasized to detect cancer at its earliest stage. It is important to increase the poor rates of screening which, for some population groups, are as low as 10%. The primary care physician should keep a computer database to remind their patients when colorectal screening is indicated.

New detection tools for colon cancer continue to be developed and the “virtual” colonoscopy, an x-ray form, may soon be commonplace. The “virtual” colonoscopy is a high-definition CT scan that creates the illusion of a colonoscopy. Patients will still have to consume a preparatory solution, such as golytely, prior to the procedure. One of the drawbacks of this technique to date is that a small stool in the colon can create an artifact on “virtual” colonoscopy and could appear to be a polyp. In this case, a full colonoscopy is still needed and the patient is required to undergo two (instead of one) tests.

New research on the molecular genetics of colon cancer is being conducted which might help identify colon cancer at very early stages⁴ when malignant transformation takes place via a series of

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DNA mutation steps. Research is aimed at developing a stool test that could identify these genetic markers to identify a person at risk for developing colon cancer.

CONCLUSION

While the rates of colorectal cancer in some minority ethnic groups have been seen to decline, we must be vigilant to screening measures for the early detection of this cancer, which has good treatment options if found at an early stage. Increased screening, use of targeted therapies, diets with less fat and rich in fiber can help patients avoid the most costly and burdensome surgery options. It is our hope that primary care physicians, our frontline healthcare providers, will continue to follow guidelines for advising patients for regular screening.

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INTERNET INFORMATION RESOURCES

American Cancer Society
Cancer Facts and Figures 2002
www.cancer.org

The American Gastroenterological Association (AGA)
www.gastro.org

American College of Gastroenterology (ACG)
www.acg.gi.org

American Society for Gastrointestinal Endoscopy (ASGE)
www.asge.org