

AU InforMed

Volume 8 Number 2 (Issue 226)

Monday, March 8, 2010

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Key Inforbits

- About Colorectal Cancer
- Colorectal Cancer Risk Factors
- Colorectal Cancer Screening
- Colorectal Cancer Statistics
- Treatment of Colorectal Cancer
- Colorectal Cancer in the Literature

March is...



Colorectal Cancer Awareness Month

About Colorectal Cancer:

Colorectal cancer is a cancer that starts in either the colon or the rectum. After food is processed by the rest of the digestive tract, it is passed to the colon which absorbs water and nutrients and serves as a storage place for waste matter. The waste matter then moves from the colon into rectum where it passes out of the body through the anus.¹ The wall of the colon and rectum has several layers of tissues. Colorectal cancer starts in the inner layer and can grow through some or all of the other layers. The stage of the cancer depends on how deep the cancer goes into the layers. Colon and rectal cancer both develop slowly over many years. Most of these cancers begin as a polyp, which is a growth of tissue that starts in the lining and grows in to the center of the colon or rectum. A polyp can be cancerous or non-cancerous, but removing them early may keep them from becoming cancerous.¹⁻³

1. Overview: Colon and Rectum Cancer [Internet]. Atlanta: American Cancer Society;c2010. What is Colorectal Cancer?; 2009 May 7 [cited 2010 Jan 25]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_2_1X_What_is_colon_and_rectum_cancer_10.asp?sitearea=
2. Overview: Colon and Rectum Cancer [Internet]. Atlanta: American Cancer Society;c2010. How many people get colorectal cancer?; 2009 May 7 [cited 2010 Jan 25]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_2_1X_How_Many_People_Get_Colorectal_Cancer.asp?sitearea=
3. Colon and Rectal Cancer [Internet]. Bethesda, MD; c2010. Definition of Colon Cancer; [cited 2010 Jan 31]; Available from: <http://www.cancer.gov/cancertopics/types/colon-and-rectal>

Risk Factors for Colorectal Cancer^{1,2}

Unmodifiable risk factors:

- Age > 50 years
- Personal history of polyps or colorectal cancer
- History of bowel disease such as ulcerative colitis or Crohn's Disease
- Family history of colorectal cancer
- Certain family syndromes such as familial adenomatous polyposis and hereditary non-polyposis colorectal cancer
- African American or Eastern European Jewish Descent

Risk Factors linked to Habits:

- Diets high in red meat or processed meats such as hot dogs, bologna, or lunch meat
- Frequent use of high heat cooking methods such as frying, broiling, or grilling
- Lack of exercise
- Obesity
- Smoking
- Heavy use of alcohol
- Type 2 Diabetes

1. Overview: Colon and Rectum Cancer [Internet]. Atlanta: American Cancer Society;c2010. What causes colorectal cancer?; 2009 May 7 [cited 2010 Jan 25]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_2_2X_What_causes_colorectal_cancer.asp?sitearea=
2. Colon and Rectal Cancer [Internet]. Bethesda, MD; c2010. Cancer Risk: Understanding the Puzzle; [cited 2010 Jan 31]; Available from: <http://understandingrisk.cancer.gov/>

Colorectal Cancer Screening

Recommendations for starting colorectal cancer screening differ based on presence or absence of risk factors. For a normal healthy person with no other risk factors, screening should begin at age 50. For those at high risk (see risk factors above) screening should begin at age 40 or at an age 10 years younger than when a family member received a diagnosis of colorectal cancer. The following are some screening methods used for colorectal cancer. The colonoscopy is the gold standard for colorectal cancer detection due to its sensitivity for finding tissue abnormalities.¹

Screening Test ¹	Recommended Screening Interval	Sensitivity for Detecting Cancer	Advantages	Disadvantages
Sensitive Guaiac Fecal Occult Blood Test	1 yr	50-75%	Low cost, done at home	Not human blood specific, limited sensitivity, must repeat annually
Fecal Immunochemical Test	1 yr	60-85%	Specific for human hemoglobin, low cost, can be done at home	Uncertain benefit when compared to guaiac fecal occult blood test, must repeat annually
Stool DNA Test	Uncertain	≥80%	Detects specific mutations instead of just blood in the stool, can be done at home	Costly, appropriate intervals unknown
Flexible Sigmoidoscopy	5 yr	>95% (in the distal colon)	Office based, no sedation required, good at detecting distal colon cancers	Does not detect isolated proximal colon cancers, not good for women where proximal cancers are more common
CT Colonography	5 yr	>90%	High sensitivity for lesions ≥10 mm, less invasive than colonoscopy	No evidence of reduced mortality, requires bowel prep, sensitivity not good for smaller (<6 mm) or flat polyps
Colonoscopy	10 yr	>95%	Highly sensitive, good mortality data from case-control studies, concomitant detection and removal of lesions	Requires bowel prep, high cost, invasive

1. Lieberman DA. Screening for Colorectal Cancer. *N Engl J Med*. 2009; 361:1179-1187.

Survival Rates Based on Cancer Stage and 2009 Colorectal Cancer Statistics

- Staging a cancer describes the extent of cancer in the body, based on the extent that the cancer has grown, whether or not it has reached nearby structures, and whether or not it has spread to lymph nodes or distant organs.
- For both colon and rectal cancer, stage I represents the least invasive stage of cancer while stage IV represents the most invasive stage of cancer.

Colon Cancer Survival Rates²

Stage	5-Year Survival Rate
I	93%
IIA	85%
IIB	72%
IIIA	83%
IIIB	64%
IIIC	44%
IV	8%

Rectal Cancer Survival Rates²

Stage	5-Year Survival Rate
I	90%
II	70%
III	56%
IV	7%

2009 Colorectal Cancer Statistics^{3,4}

- 106,000 new cases of colon cancer
- 40,000 new cases of rectal cancer
- 49,000 deaths from colorectal cancer
- Not counting skin cancers, colorectal cancer is the third most common cancer in this country. The risk of a person having colorectal cancer in their lifetime is about 1 in 19.

1. Detailed Guide: Colon and Rectum Cancer How is Colorectal Cancer Staged? [Internet]. Atlanta, GA: American Cancer Society; c2010. 2009 May 18 [cited 2010 Feb 2]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_4_3X_How_is_colon_and_rectum_cancer_staged.asp?sitearea=
2. Tables Adapted From: Detailed Guide: Colon and Rectum Cancer How is Colorectal Cancer Staged? Atlanta, GA: American Cancer Society; c2010. 2009 May 18 [cited 2010 Feb 2]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_4_3X_How_is_colon_and_rectum_cancer_staged.asp?sitearea=
3. Overview: Colon and Rectum Cancer [Internet]. Atlanta: American Cancer Society; c2010. What is Colorectal Cancer?; 2009 May 7 [cited 2010 Jan 25]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_2_1X_What_is_colon_and_rectum_cancer_10.asp?sitearea=
4. Overview: Colon and Rectum Cancer [Internet]. Atlanta: American Cancer Society; c2010. How many people get colorectal cancer?; 2009 May 7 [cited 2010 Jan 25]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_2_1X_How_Many_People_Get_Colorectal_Cancer.asp?sitearea=

Treatment of Colorectal Cancer

There are four main types of treatment for colorectal cancer:

-Surgery:

- Various types of colon or rectal surgery to remove the cancerous tissue
- Depending on the location of the cancer, surgery can be more extensive and involve removal of the anus and thus the patient will require a colostomy to remove solid wastes from the body

-Radiation Therapy:

- Uses high-energy rays (x-rays) to kill cancer cells or shrink tumors. Radiation can kill small areas of cancer that may have been missed during surgery, or before surgery to shrink the size of a tumor.
- The main use for radiation treatment is when the cancer has attached to an internal organ or to the lining of the abdomen which can cause cancer cells to be left behind after the surgical removal of cancerous tissue.

-Chemotherapy:

- These are the drugs used to fight cancer
- Chemotherapy is either used before surgery to shrink the cancer and make surgery easier or after surgery because it can increase the survival rate for patients with some stages of colorectal cancer.
- Chemotherapy can also help relieve symptoms of advanced cancer and help some live longer.

-Targeted Therapies (monoclonal antibodies)

- These are drugs that attack parts of cancer cells that make them different from normal cells. Since they only affect cancer cells, they often cause fewer side effects than chemotherapy.

**Depending on the stage of cancer, two or more types of treatment may be used in colorectal cancer.*

1. Overview: Colon and Rectum Cancer [Internet]. Atlanta: American Cancer Society; c2010. How is colorectal cancer treated?; 2009 May 7 [cited 2010 Jan 25]; Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_2_4X_How_Is_Colorectal_Cancer_Treated.asp?sitearea=
2. Colon and Rectal Cancer [Internet]. Bethesda, MD; c2010. Colon and Rectal Cancer: Treatment; [cited 2010 Jan 31]; <http://www.cancer.gov/cancertopics/treatment/colon-and-rectal>

From the Medical Literature

Does age impact effectiveness of newer colorectal cancer adjuvant therapy regimens?

Adjuvant therapy, therapy used after surgery to help reduce recurrence of cancer, is commonly used to help eliminate cancer cells that might be left behind. A commonly used agent for this is intravenous fluoropyrimidine (FU), but this agent can also be given either orally or in combination with other agents. Past studies have shown no difference in efficacy when these therapeutic options when used in older individuals when compared to a younger population, however a recent study presented at the Annual Meeting of Clinical Oncology has looked further into this matter.^{1,2} Data for 12,669 patients from the ACCENT (Adjuvant Colon Cancer End Points) database was included in the study and it examined the difference in overall survival (OS), disease-free survival (DFS), and time to recurrence (TTR) in patients aged less than 70 years or greater than/equal to age 70 who were taking adjuvant therapy for stage II/III colon cancer. These patients were either taking oral FU, intravenous FU alone, or intravenous FU in combination with irinotecan or oxaliplatin. This trial showed that patients younger than 70 had significant improvements in the study endpoints with oral and combination therapy when compared to intravenous FU alone,

however this difference was not observed in the over 70 age group. These results indicate that other types of adjuvant therapy aside from the traditional IV FU do not offer a significant benefit to the elderly population.²

1. Holt PR, Kozuch P, Mewer S. Colon cancer and the elderly: From screening to treatment in management of GI disease in the elderly. *Best Pract Res Clin Ga.* 2009;23:889-907.
2. Jackson McCleary NA, Meyerhardt J, Green E, Yothers G, de Gramont A, Van Cutsem E, et al. Impact of older age on the efficacy of newer adjuvant therapies in >12,500 patients (pts) with stage II/III colon cancer: Findings from the ACCENT Database. *Clin Adv Hematol Oncol.* 2009;7(8):525.

Investigation into a chemoprotective agent for prevention of colon cancer

Several agents have been evaluated in the past for their potential role in prevention of colon polyps developing into cancerous adenomas including NSAIDs (including aspirin), folic acid, calcium, and vitamins. Balsalazide (Colazal[®]), a 5-amino-salicylate that is used in the treatment of ulcerative colitis, was the focus of a study published in August. The proposed mechanisms by which this agent could decrease development of malignancies is related to its anti-inflammatory properties as well as its ability to induce cellular apoptosis. In this small study, 75 subjects who had been diagnosed with small colon polyps were either given balsalazide 3 g daily or placebo for 6 months. It was found in this trial that balsalazide did not provide any significant benefit compared to placebo in reducing the number of adenomas developed by patients or in reducing polyp size. There was a non-significant increase in the number of adenomas in patients receiving placebo, so investigators feel that a large randomized trial should be done to further investigate balsalazide as a chemoprotective agent since this study was limited by its sample size.¹

1. Terdiman JP, Johnson LK, Kim YS, Sleisenger MH, Gum JR, Hayes A. Chemoprevention of colonic polyps with balsalazide: an exploratory, double-blind, placebo-controlled study. *Dig Dis Sci.* 2009;54:2488-2496

Resources for More Information about Colorectal Cancer:

American Cancer Society: http://www.cancer.org/docroot/lrn/lrn_0.asp

National Cancer Institute: <http://www.cancer.gov/cancertopics/types/colon-and-rectal>

American College of Gastroenterology: <http://www.gi.org/patients/cerk/>

National Comprehensive Cancer Network: <http://www.nccn.org/index.asp>



Did you know: St. Patrick's favorite color was blue, not green, and the people of Ireland weren't exactly fond of green - according to them it was the color of the Fairies and Leprechauns and, unless you wanted to forcibly join the ranks of these Wee Folks, you would refrain from sporting that color too often. It wasn't until the 19th Century that green became the official color of Ireland.¹

1. Interesting Facts about St. Patrick's Day [Internet]. Costa Mesa, CA: Buzzle.com;c2000-2009. Interesting Facts about St. Patrick's Day; [cited 2010 Jan 25]; Available from: <http://www.buzzle.com/editorials/3-17-2005-67214.asp>



The last "dose" ...

"The more that you read, the more things you will know. The more that you learn, the more places you'll go."

-Dr. Seuss (Theodore Seuss Geisel, March 2, 1904 to September 24, 1991)

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