**Colon and Rectal Cancers**

**FCDS 2013-2014 Educational Webcast Series**

December 12, 2013

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FCDS QC Staff

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**Outline**

- Overview – Incidence/Mortality/Survival
- Risk Factors – Signs and Symptoms
- Anatomy of the Colon and Rectum
- Screening Recommendations
- Multiple Primary Rules
- Histology Coding Rules
- Genetic and Biologic Tumor Markers
- Staging – Summary Stage, TNM, CSv02.04
- Treatment Planning / Coding Treatment
- NCCN Treatment Guidelines
- Text Documentation

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**Overview**

1 out of every 20 persons in the U.S. will develop colon or rectal cancer in their lifetime (est. 5%).

Colorectal cancer is the #2 cause of cancer deaths in the U.S.

Colorectal cancer often begins as a benign growth; a polyp.

Adenomas are a type of polyp and are benign tumors of the tissue lining the colon or rectum.

Most adenomas are benign.

However, some adenomas have the potential to develop into cancer over the long term.

When removed early, polyps are prevented from developing into malignant cancer.

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**Anatomic Distribution**

Distribution of colorectal cancers by subsite

- Cecum: 21%
- Rectum: 21%
- Sigmoid: 21%
- Recto-sigmoid: 10%
- Transverse: 11%
- Ascending: 16%

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**Incidence and Mortality**

[Graph showing incidence and mortality rates of colorectal cancer.]

Source: ACS Colorectal Cancer Facts and Figures 2011-2013

Incidence and Mortality

Table 1. Colorectal Cancer Incidence and Mortality Rates by Race/Ethnicity, 2003-2007

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Man</th>
<th>Woman</th>
<th>Man</th>
<th>Woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hispanic White</td>
<td>56.5</td>
<td>14.6</td>
<td>26.0</td>
<td>14.3</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>68.8</td>
<td>25.7</td>
<td>28.5</td>
<td>12.8</td>
</tr>
<tr>
<td>Asian American/Hispanic</td>
<td>45.4</td>
<td>23.3</td>
<td>22.0</td>
<td>13.5</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>62.0</td>
<td>21.9</td>
<td>16.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Other Race/Sex</td>
<td>57.3</td>
<td>24.6</td>
<td>21.2</td>
<td>14.9</td>
</tr>
</tbody>
</table>

Source: ACS Colorectal Cancer Facts and Figures 2011-2013

Incidence and Mortality

Cancer Death Rates* Among Men, US, 1930-2009

Source: ACS Colorectal Cancer Facts and Figures 2011-2013

*Age-adjusted to the 2000 US standard population and adjusted for delays in reporting.
Cancer Death Rates* Among Women, US, 1930-2009

Incidence and Mortality
Estimated Number of 2013 Florida New Cancer Cases and Deaths

New Cases
> 10,290 Colon/Rectum Combined

Deaths
> 3,640 Colon/Rectum Combined

ACS Cancer Facts & Figures 2013

Survival

Observed Survival by AJCC Stage

Univariate relative survival rates based on patients diagnosed from 2001 to 2006, all followed through 2009.

RISK FACTORS

*In this study survival was better for some stage III cancers than for some stage II cancers. The reasons for this are not clear.

Trends in Five-year Relative Cancer Survival Rates (%), 1975-2008

Survival

15

14

16

18
Table 4. Summary of Major Risk Factors for Colorectal Cancer

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Relative Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family history (first-degree relative)</td>
<td>2.2</td>
</tr>
<tr>
<td>Relative with diagnosis before age 45</td>
<td>4.5</td>
</tr>
<tr>
<td>Inflammatory bowel disease (Crohn disease)</td>
<td>2.4</td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td>2.8</td>
</tr>
<tr>
<td>Rectal cancer</td>
<td>1.6</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Other factors:

- High fat consumption
- Processed meat consumption
- Smoking
- Alcohol consumption

Factors that decrease risk:

- Physical activity (level of activity)
- Diet
- Calcium
- Milk consumption

Note: Relative risks compare the risk of disease among people with a particular risk factor to people without that risk factor. Levels of fat and meat consumption are usually measured in relation to levels with lowest consumption. If the relative risk is greater than 1.0, the risk is higher among people with the consumption pattern. Relative risks less than 1.0 indicate a protective effect.

Prevention

Current Recommendations for the Prevention of Colorectal Cancer

1. Get screened regularly.
2. Maintain a healthy weight throughout life.
3. Adopt a physically active lifestyle.
4. Consume a healthy diet with an emphasis on plant sources of ﬁber:
   - Choose foods and beverages in amounts that help achieve and maintain a healthy weight
   - Eat 5 or more servings of a variety of vegetables and fruits each day
   - Choose whole grains in preference to processed refined grains
   - Limit your consumption of processed and red meats
5. If you drink alcohol, beverages, limit consumption.

Signs and Symptoms

- Change in bowel habits
- Blood in the stool or in the toilet after a bowel movement (bright red or dark black)
- Change in shape of stool
- Diarrhea, constipation, or feeling that the bowel does not empty completely > 1 week
- Acute obstruction and/or perforation
- General abdominal discomfort (frequent gas pains, bloating, fullness, or cramps)
- Weight loss with no known reason
- Weakness / Fatigue
- Anemia

Screening

Colorectal Cancer Screening Guidelines*

Beginning at age 50, men and women should follow one of the following exam schedules:

<table>
<thead>
<tr>
<th>Test</th>
<th>Time Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fecal occult blood test</td>
<td>Annual</td>
</tr>
<tr>
<td>Flexible sigmoidoscopy</td>
<td>5 yrs</td>
</tr>
<tr>
<td>Double contrast barium enema</td>
<td>5 yrs</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>10 yrs</td>
</tr>
<tr>
<td>CT Colonography</td>
<td>5 yrs</td>
</tr>
</tbody>
</table>

*For people at average risk who have a higher risk should consider a colonoscopy at a different testing schedule.
Screening Recommendation Details

<table>
<thead>
<tr>
<th>Screening Test</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonoscopy</td>
<td>Men and women, ages 50+</td>
</tr>
<tr>
<td>FOBT*</td>
<td>Men and women, ages 50+</td>
</tr>
</tbody>
</table>

- Annual screening for men and women at age 50
- Every other year for men and women 50-75
- Every year if FOBT is positive
- Individual recommendations for FOBT are not available

Screening High Risk Populations

- **Individuals at High Risk Include:**
  - Family History – 1st degree relative
  - Family History – more than 1 relative
  - Family History – relative with dx < age 45
  - Personal History – Inflammatory bowel disease
  - Crohn’s Disease
  - Ulcerative Colitis
  - Personal History - Diabetes

- Screening should begin before age 50
- Colonoscopy is recommended screening method
- Discuss your personal risk and routine screening schedule with your personal healthcare provider

Choosing the Right Test

<table>
<thead>
<tr>
<th>Test</th>
<th>Key Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOBT/FIT</td>
<td>Positive result from colorectal cancer screening, safe, and easy to complete</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>Can help detect cancer, can be performed once, easy to tolerate, and safe</td>
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Trends in the Prevalence of Fecal Occult Blood Test* by Health Insurance Status, US, 2000-2010

Flexible Sigmoidoscopy or Colonoscopy Prevalence* by Race/Ethnicity and Health Insurance Status, US, 2010

* Fecal occult blood test in the last year among adults 50 years and older
* Colonoscopy in the last year among adults 50 years and older

* Flexible sigmoidoscopy or colonoscopy in the last year among adults 50 years and older

* Sources: National Health Interview Survey, National Center for Health Statistics, Centers for Disease Control and Prevention

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* Source: National Health Interview Survey, National Center for Health Statistics, Centers for Disease Control and Prevention
Who Gets Routine Colorectal Cancer Screening Among U.S. Adults Age 50+?

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>Other FBT or Endoscopy</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Final</td>
<td>50-54</td>
<td>55-64</td>
<td>65+</td>
<td>50-54</td>
</tr>
<tr>
<td>Black/Melanoma</td>
<td>11.2</td>
<td>11.4</td>
<td>10.4</td>
<td>11.1</td>
</tr>
<tr>
<td>White/non-melanoma</td>
<td>11.2</td>
<td>11.4</td>
<td>10.4</td>
<td>11.1</td>
</tr>
<tr>
<td>Asian American (non-Indian)</td>
<td>8.8</td>
<td>9.6</td>
<td>10.1</td>
<td>8.6</td>
</tr>
<tr>
<td>Native Indian/Alaska Native</td>
<td>12.1</td>
<td>12.1</td>
<td>12.1</td>
<td>12.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.3</td>
<td>10.3</td>
<td>10.3</td>
<td>10.3</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>% of Persons</td>
<td>52.4</td>
<td>47.6</td>
<td>52.4</td>
<td>47.6</td>
</tr>
<tr>
<td>% of Persons</td>
<td>12.4</td>
<td>12.4</td>
<td>12.4</td>
<td>12.4</td>
</tr>
<tr>
<td>% of Persons</td>
<td>50.2</td>
<td>50.2</td>
<td>50.2</td>
<td>50.2</td>
</tr>
<tr>
<td>Total</td>
<td>50.2</td>
<td>50.2</td>
<td>50.2</td>
<td>50.2</td>
</tr>
</tbody>
</table>

23 Million Adults Never Screened

- People less likely to get tested are: Hispanics, people aged 50–64, men, American Indians or Alaska Natives, and those who don’t live in a city.

- People with lower education and income are less likely to get tested.

- About 2 of every 3 adults who have never been tested for colorectal cancer actually have a regular doctor and health insurance that could pay for the test.

- Many people do not know they need to be tested and are not notified when it is time to be tested.
Rectosigmoid and Rectum

Rectum – Anorectum – Anus

Colonoscopy Measurements

Distance from Anal Verge (approximations only)
Adapted from AJCC Cancer Staging Manual

“Non-Peritonealized” Surface

- Some colon surfaces have no serosa at the exterior surface (around the hollow organ)
  - The serosa acts as barrier for tumors that begin on inside surface of the colon and invade down into the mucosa and through the wall of the colon (the serosa).
  - When there is no serosa – you lose a natural barrier that helps contain the colon cancer
- Non-Peritonealized Surfaces in Colon-Rectum:
  - Entire Rectum – no serosa on any surface
  - Descending Colon – no serosa covering posterior surfaces
  - Ascending Colon – no serosa covering posterior surfaces

Source: www.analcancerinfo.ucsf.edu

Polyps and Colon Cancer

- 95-98% of colon cancers - adenocarcinoma
  - Most originate in polyps or adenomas
  - But, only 10% of adenomas develop into cancers

- Types of adenoma
  - Tubular
  - Villous
  - Tubulo-villous

- Process takes up to 10 years

- De Novo Cancers – mucinous, signet ring
  - >10% of all colon ca are mucinous (>50% mucin production)
  - <1% of all colon ca are signet ring cell (>50% signet rings)

http://hopkinscoloncancercenter.org

http://www.pathology.pitt.edu/lectures/gi/colon-a/14.htm

http://www.pathology.pitt.edu/lectures/gi/colon-a/16.htm

http://www.pathology.pitt.edu/lectures/gi/colon-a/17.htm
**Polyps and Colon Cancer**

http://www.mayoclinic.org/images

**Polyps and Colon Cancer**

ESTIMATED RISK FOR COLON CANCER BY SYNDROME

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Gene(s)</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAP (familial adenomatous polyposis)</td>
<td>APC</td>
<td>10% by age 45</td>
</tr>
<tr>
<td>attenuated FAP</td>
<td>APC</td>
<td>5% by age 80</td>
</tr>
<tr>
<td>Lynch (HNPCC)</td>
<td>MLH1, MSH2, MSH6, PMS2, EPCAM</td>
<td>40% to 80% by age 75</td>
</tr>
<tr>
<td>MLH1-associated polyposis</td>
<td>MLH1</td>
<td>35% to 53%</td>
</tr>
<tr>
<td>Peutz-Jeghers</td>
<td>STK11</td>
<td>39% by age 70</td>
</tr>
<tr>
<td>juvenile polyposis</td>
<td>BMPR1A, SMAD4</td>
<td>17% to 68% by age 60</td>
</tr>
</tbody>
</table>

http://www.ambrygen.com

**Lymphatics of Colon / Rectum**

The regional lymph nodes of the colon and rectum are colored by anatomic location.

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The regional lymph nodes of the colon and rectum are colored by anatomic location.

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**“Tumor Deposits”**

- **Definition**
  - Separate tumor nodules or tumor deposits of malignant cells in perirectal or pericolic fat with no evidence of lymph node tissue
  - Found in primary lymphatic drainage area
- **Other names**
  - Peri-tumoral deposits, satellite nodules, discontinuous extramural extension, or malignant tumor foci
“Tumor Deposits”

- Mesenteric
- Pericolonic
- Perirectal
- Subserosa
- All Regional Lymph Nodes Negative
- Deposits + LNs

N1c = Tumor deposit(s) in the subserosa, mesentery, or nonperitonealized pericolic or perirectal tissues without regional nodal metastasis.

Metastatic Sites

- Lung
- Liver
- Lymph Nodes
- Seeding in peritoneum
- Seeding of small intestine
- Seeding of other segments of colon

Observed Survival by AJCC Stage

<table>
<thead>
<tr>
<th>AJCC-TNM Stage</th>
<th>5-year Observed Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>74%</td>
</tr>
<tr>
<td>IIA</td>
<td>67%</td>
</tr>
<tr>
<td>IIB</td>
<td>59%</td>
</tr>
<tr>
<td>IIC</td>
<td>37%</td>
</tr>
<tr>
<td>IIIA</td>
<td>73%</td>
</tr>
<tr>
<td>IIIB</td>
<td>46%</td>
</tr>
<tr>
<td>IIIC</td>
<td>28%</td>
</tr>
<tr>
<td>IV</td>
<td>6%</td>
</tr>
</tbody>
</table>

*In this study, survival was better for some stage II cancers than for some stage III cancers. The reasons for this are not clear.

Metastatic Sites

- Lung
- Liver
- Lymph Nodes
- Seeding in peritoneum
- Seeding of small intestine
- Seeding of other segments of colon

MPH Rules Terms and Definitions

- 2014-2015 Updates
- New MPH Database
- Text Only Rules
- Stay Tuned

www.colorectal-surgeon.com


Subserosal

i) subserosal tumors: tumors that involve or extend into the subserosal fat or muscle layers of the serosal surface of a hollow organ.

Seeding of other segments of colon

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Seeding of other segments of colon

www.colorectal-surgeon.com
MPH Rules
Multiple Primary Rules

- 2014-2015 Updates
- New MPH Database
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Multiple Primary Rules

Unknown number
- M1. Unknown whether single or multiple tumors = single

One tumor
- M2. Single tumor = single

Multiple tumors
- M3. Adenoca in adenomatous polyposis coli in one or multiple segments = single

Source: Afritz and Associates, LLC

Multiple Primary Rules

Multiple tumors, continued
- M4. Different topography = multiple
- M5. Diagnosis dates > 1 year apart = multiple
- M6. Invasive after in situ > 60 days = multiple
- M7. Frank adenocarcinoma and malignant tumor in a polyp = single
- M8. Non-specific and specific histology = single
- M9. Multiple polyps (all malignant) = single
- M10. Histology different = multiple
- M11. All other scenarios = single

Source: Afritz and Associates, LLC

New Primary or Recurrence?

- C18.9 historical colon with new primary
- Extent of previous resection
  - Polypectomy only?
  - Segmental resection?
  - Hemicolectomy?
- Circumferential resection margin
- What is “recurrence” in anastomosis?

Histopathology Review

- 95-98% of colon cancers - adenocarcinoma
  - Most originate in polyps or adenomas
  - But, only 10% of adenomas develop into cancers
- Types of adenoma
  - Tubular
  - Villous
  - Tubulo-villous
- Process takes up to 10 years
- De Novo Cancers – mucinous, signet ring
  - >10% of all colon ca are mucinous (>50% mucin production)
  - <1% of all colon ca are signet ring cell (>50% signet rings)
New Histologic Terms and Code

- Glandular intraepithelial neoplasia, high grade
- Glandular intraepithelial neoplasia, grade III
- Flat intraepithelial neoplasia, high grade

8148/2 – new ICD-O-3 Code for 2015

All low grade intraepithelial neoplasia = /0
All grade I or grade II intraepithelial = /0

Mucinous and Signet Ring Cell

- Mucinous adenocarcinoma (8480)
  Code when
  - Final diagnosis is mucinous  OR
  - Documentation says > 50% mucinous
  - May use microscopic section of path report

- Signet ring cell carcinoma (8490)
  Code when
  - Final diagnosis is signet ring cell  OR
  - Documentation says > 50% signet ring cell
  - May use microscopic section of path report
  - “…with signet ring cells” ≠ signet ring cell CA

Colorectal NETs and GISTs

- NET – Neuroendocrine Tumor
  - Carcinoid Tumor – 2015 ALL are reportable
  - Neuroendocrine Carcinoma
  - Mitotic Count Matters
  - Serum Chromogranin A (CgA)
  - Urinary 5-Hydroxyindoleacetic Acid (5-HIAA)

- GIST – Gastrointestinal Stromal Tumor
  - Tumor Size Matters
  - Mitotic Count Matters
  - KIT (CD117) Mutation
  - PDGFRA (CD140A) Mutation

Histology Coding Rules

Single tumor

- H1. If no tissue, code physician’s statement
- H2. If no primary tissue, code metastasis
- H3. Adenocarcinoma, NOS vs. intestinal type adenocarcinoma
- H4. 8210, 8261, or 8263 when carcinoma is in a polyp
- H5. Mucinous or signet ring cell > 50% of tumor
- H6. Adenocarcinoma, NOS when mucinous or signet ring cell < 50% of tumor
- H7. 8255 combined mucinous and signet ring

Multiple tumors abstracted as a single primary

- H8. 8240 carcinoid when combined neuroendocrine and carcinoid
- H9. 8244 composite carcinoid when combined adenocarcinoma and carcinoid
- H10. 8245 adenocarcinoid when diagnosis is exactly “adenocarcinoid”
- H11. Single histology
- H12. Invasive if both invasive and in situ
- H13. Most specific term
- H14. Higher code

Histology Coding Rules

Single tumor, continued

- H15. If no tissue, code physician’s statement
- H16. If no primary tissue, code metastasis
- H17. 8220 Familial polyposis
- H18. 8263 - carcinoma is tubulo-villous adenoma
- H19. 8221 when < 100 polyps
- H20. Most invasive tumor
- H21. 8210, 8261, or 8263 - carcinoma in a polyp
- H22. Single histology
- H23. Most specific term
- H24. Higher code

Histology Coding Rules

Multiple tumors abstracted as a single primary

- H25. If no tissue, code physician’s statement
- H26. If no primary tissue, code metastasis
- H27. 8220 Familial polyposis
- H28. 8263 - carcinoma is tubulo-villous adenoma
- H29. 8221 when < 100 polyps
- H30. Most invasive tumor
- H31. 8210, 8261, or 8263 - carcinoma in a polyp
- H32. Single histology
- H33. Most specific term
- H34. Higher code
GENETIC AND BIO-MOLECULAR TUMOR MARKERS

College of American Pathologists

Microsatellite Instability

What is MSI?
- Genetic Test using PCR (polymerase chain reaction) looking for DNA Repair errors and HNPCC features
- What does positive result indicate?
  - MSI predicts response to chemotherapy
  - MSI may indicate patient's overall prognosis
  - MSI-H (highly positive MSI Test) may be related to development of HNPCC or Lynch Syndrome
- Who should get tested?
  - Patient under age 50 with colon cancer
  - Patient under age 50 with rectal cancer
  - Patient with other HNPCC-associated tumors
  - Patient with family history of colon/rectal cancer

Mismatch Repair Proteins

- Can include one or more:
  - MLH1
  - MSH2
  - MSH6
  - PMS2
  - EPCAM

KRAS Mutation

- What is KRAS wild-type?
- What is KRAS mutation?
- When is KRAS testing done?
- What does positive result mean?
- What about BRAF V600E Mutation?
18q Loss of Heterozygosity

Other Gene Testing

- APC Mutation
- PIK3CA Mutation
- PTEN Mutation
- TFAP2E – fluorouracil resistance

- Multi-parameter Gene Expression Testing
- Protein Expression Assay
- DNA Microarrays

SEER Summary Stage
AJCC Cancer Staging - TNM

CS Tumor Size

CS Tumor Size (polyp)
- Size of polyp is not size of tumor
- Tumor usually only fills part of a polyp
- Do not code size of polyp unless polyp is replaced by tumor
- Pathology report may not give size of tumor within the polyp – may be microscopic focus or may be measurable tumor in the polyp
In situ

- In-situ
- Minimal invasive
- Invasive

In situ, intramucosal, non-invasive

In situ, intramucosal, non-invasive, in a polyp or adenoma

Invasive adenoma limited to mucosa, NOS

Invasive carcinoma, intramural, NOS

Invasive lamina propria, including lamina propria in the stalk of a polyp

Confined to and through muscularis mucosae, including submucosa in the head of a polyp

Confined to head of polyp, NOS

Confined to stalk of polyp, NOS

Invasive tumor in polyp, NOS

Invasive submucosa (superficial invasion, including multilayered in the head or stalk of a polyp)

Invasive as T1 with no other information on extension

Intramucosal Colon Cancer
Tumor invades through the muscularis propria into peri-colorectal tissues.

Circumferential resection margin. T3 shows macroscopic involvement of the circumferential resection margin of a non-peritonealized surface of the colorectum by tumor with gross disease remaining after excision.

Circumferential resection margin. T4a (left side) has perforated the visceral peritoneum.

Tumor penetrates to the surface of the visceral peritoneum.

Tumor perforates visceral peritoneum (shown with gross bowel perforation through the tumor).
Tumor directly invades or is adherent to other organs or structures, illustrated here with extension into an adjacent loop of small bowel

Tumor directly invades or is adherent to other organs or structures (such as the sacrum shown here)

The regional lymph nodes of the colon and rectum are colored by anatomic location.
N1a is defined as metastasis in one regional lymph node. N1b is defined as metastasis in 2 to 3 regional lymph nodes.

N2a is defined as metastasis in 4 to 6 regional lymph nodes. N2b is defined as metastasis in seven or more regional lymph nodes.

M1a disease is defined as distant metastasis confined to one organ or site (e.g., liver, lung, ovary, nonregional node). In this case, involvement is outside the regional nodes of the primary tumor.
## Treatment – Early Stage

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Non-Invasive Poly Peudne</th>
<th>Non-Invasive Polyp Sessile</th>
<th>KRAS Wild Type</th>
<th>T1, N0</th>
<th>T2, N0</th>
</tr>
</thead>
<tbody>
<tr>
<td>NeoAdjuv Chemo</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NeoAdjuv XRT</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NeoAdjuv Other</td>
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<td>Panitumumab (KRAS Wild)</td>
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</table>
Chemotherapy and BRM

- Chemotherapy alone, or in combination with radiation, is given before or after surgery to most patients whose cancer has penetrated the bowel wall deeply or spread to lymph nodes.

- Adjuvant chemotherapy (anticancer drugs in addition to surgery or radiation) for colon cancer in otherwise healthy patients 70 years of age and older is equally effective as in younger patients; toxicity in older patients can be limited if certain drugs (e.g., oxaliplatin) are avoided.
Oral Chemotherapy

Capecitabine
Brand Name: Xeloda®

Treatment - Advanced Stage

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Chemotherapy and BRM

- Several targeted therapies are approved by the FDA to treat metastatic colorectal cancer:
  - Bevacizumab (Avastin) and zivafiblercept (Zaltrap) block the growth of blood vessels to the tumor,
  - Cetuximab (Erbitux) and panitumumab (Vectibix) block the effects of hormone-like factors that promote cancer growth.

Chemotherapy and BRM

- Stivarga® (regorafenib) is a oral multi-kinase inhibitor that blocks several enzymes that promote cancer growth.

Rx advanced colorectal CA

http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm321271.htm

Use SEER®Rx to Code Agents
Neoadjuvant Therapy

- Colon – seldom used except for locally advanced tumors to shrink size of primary tumor mass or to reduce size of metastasis that are deemed resectable.
- Rectum – used for all stages > T2
- Chemo plus or minus XRT to tumor

Text Documentation

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References

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- Colorectal Cancer Facts and Figures 2011-2013
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Questions