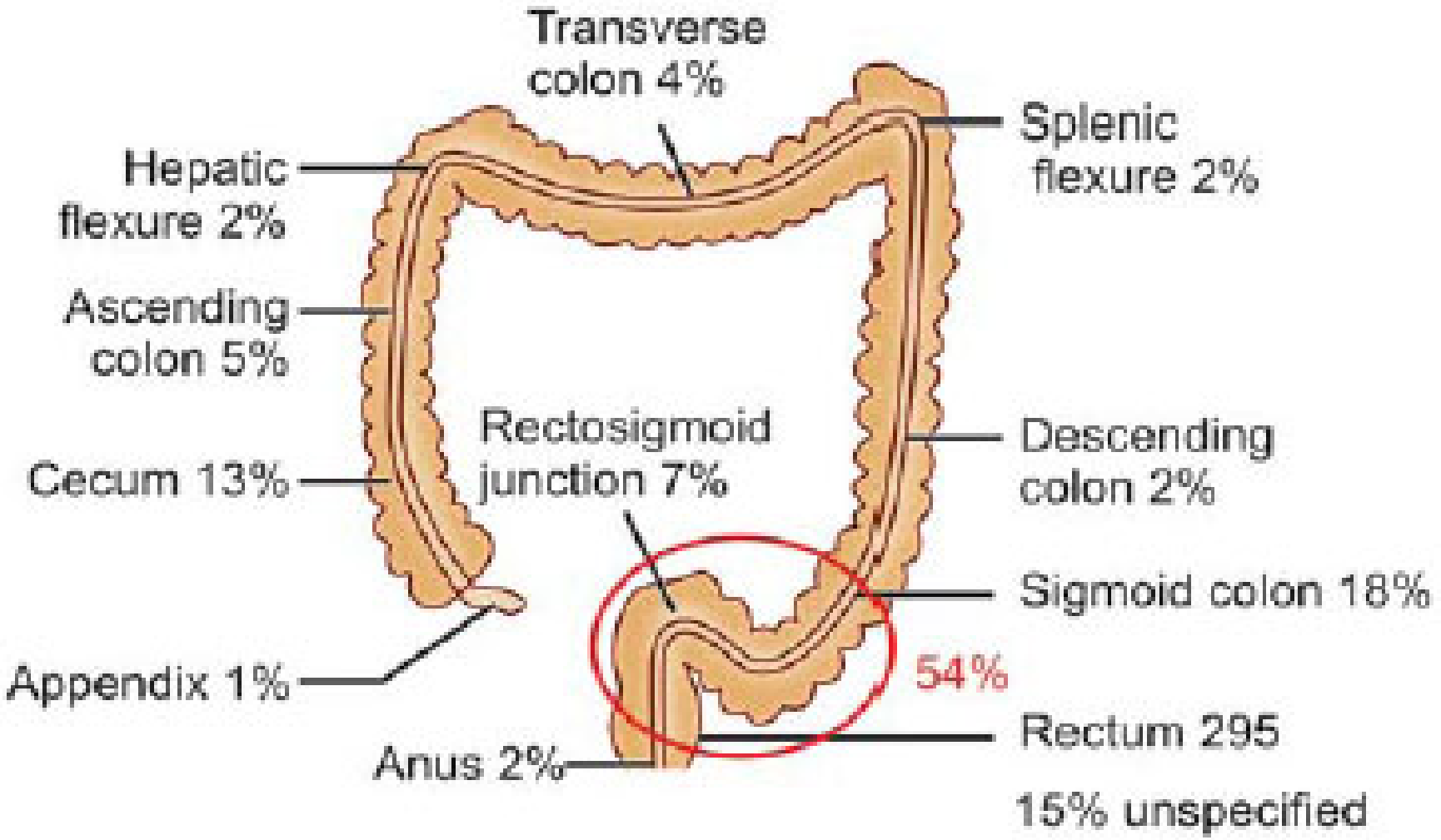
COLORECTAL CARCINOMA

EPIDEMIOLOGY

- Incidence : highest in developed countries

- Trends: Incidence rates have increased for cancers of the right colon (cecum, ascending colon) and sigmoid colon and have decreased for cancers of the rectum

DISTRIBUTION



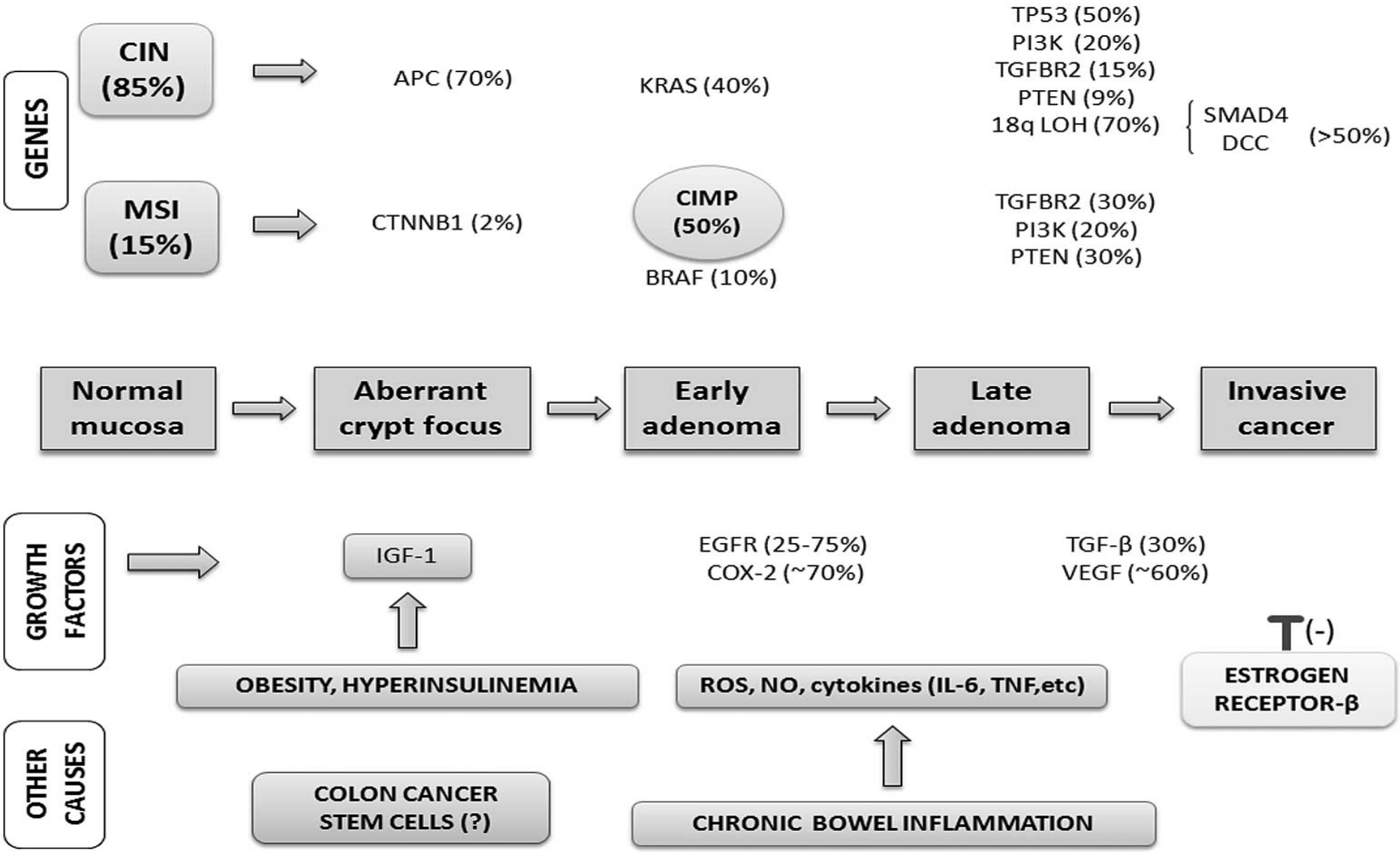
Risk Factors for Colorectal Cancer

- Age ≥50 years
  High-fat, low-fiber diet
  Personal history of Colorectal adenomas (synchronous or metachronous)
  Colorectal carcinoma

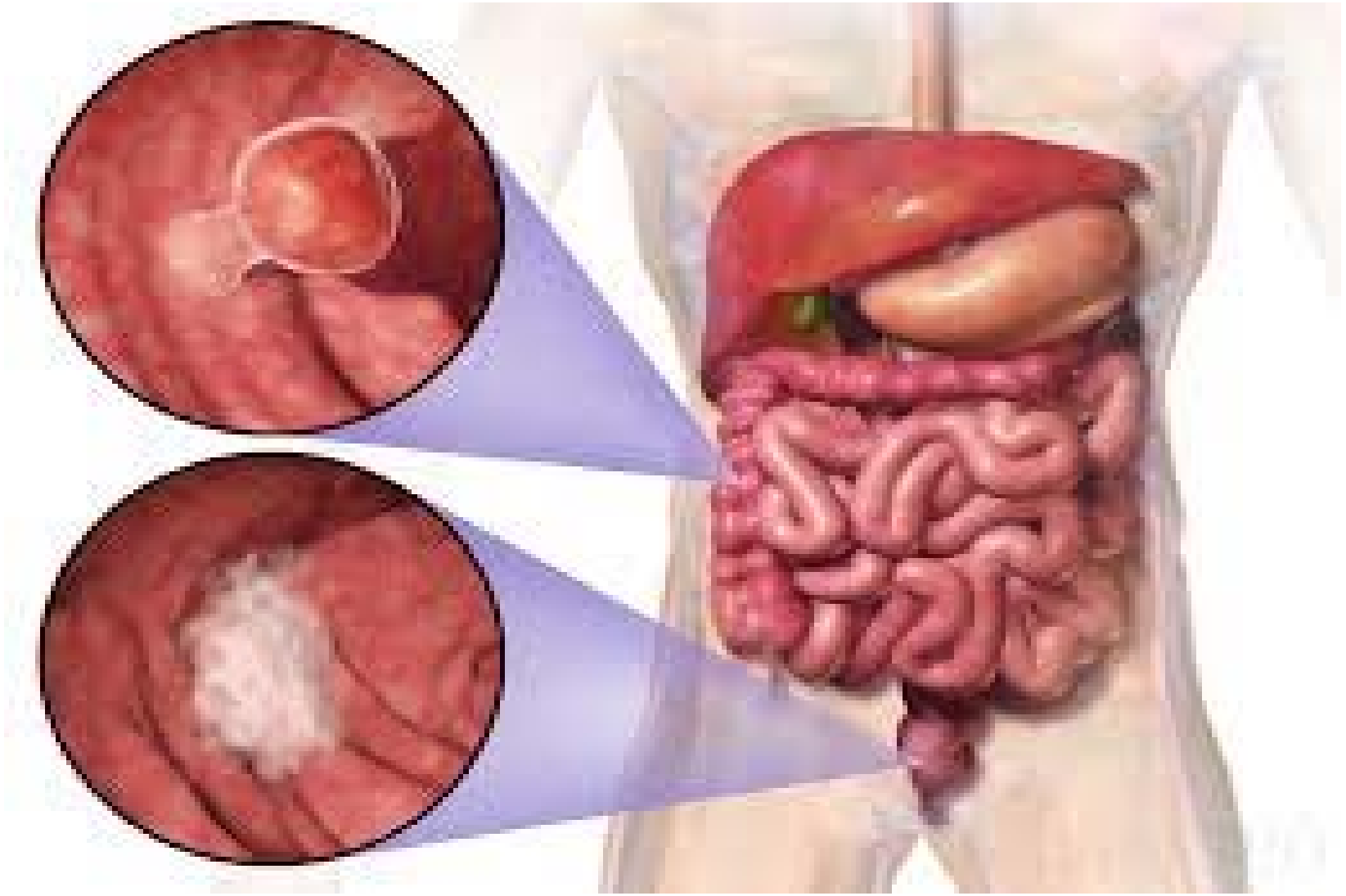
- Family history of a polyposis syndrome:
  Familial adenomatous polyposis
  Turcot's syndrome
  Muir-Torre syndrome
  Peutz-Jeghers syndrome
  Familial juvenile polyposis
  Hereditary nonpolyposis colorectal cancer

- First-degree relative with colorectal cancer
  Inflammatory bowel disease : Ulcerative colitis
  : Crohn's disease

Proposed sequence of molecular genetic events in the evolution of colon cancer



GROSS PATHOLOGY



HISTOLOGY

- 95% : adenocarcinomas
- Commonly moderately differentiated to well-differentiated glands and secrete variable amounts of mucin

CLINICAL FEATURES

- CRCs grow slowly
- May be present for as long as five years before symptoms appear
- Asymptomatic persons with cancer often have occult blood loss

Symptoms depend to some extent on the site of the primary tumor

- **Cancers of the proximal colon :**
- Usually grow larger before they products ymptoms.
  Constitutional symptoms, such as fatigue, shortness of breath, and angina, secondary to microcytic hypochromic anemia
-
  Less often, blood from right colon cancers is admixed with stool and appears as mahogany feces

- ***The left colon*** **:** has a narrower lumen
- Involve the bowel circumferentially and cause obstructive symptoms.
- Rectal cancers also cause obstruction and changes in bowel habits, including constipation, diarrhea, and tenesmus. Rectal cancers can invade the bladder, vaginal wall, or surrounding nerves, resulting in perineal or sacral pain, but this is a late occurrence

DIAGNOSIS AND SCREENING

SCREENING TOOL	AMERICAN CANCER SOCIETY
High sensitivity FOBT (guaiac-based or immunochemical)	Recommended annually as an option
Flexible sigmoidoscopy	Recommended every 5 yr as an option
Colonoscopy	Recommended every 10 yr as an option
Double-contrast barium enema	Recommended every 5 yr as an option
CT colonography	Recommended every 5 yr as an option

- History and physical examination
- S.CEA
- CT / MRI
- Immunoscintigraphy -radiolabeled monoclonal antibodies raised against various tumor antigens, including CEA -not been standardized.
- The role of positron emission tomography (PET) currently is being evaluated

- Colonoscopy preoperatively, perioperatively, and at subsequent intervals.

Staging

- Dukes modification of Astler and Coller

  A: Tumors limited to the mucosa

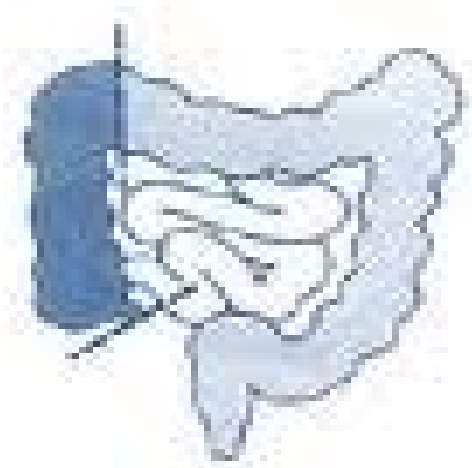
  B1: Tumors extending into, but not through, the muscularis propria

  B2: Tumors penetrating the muscularis propria but without lymph node involvement

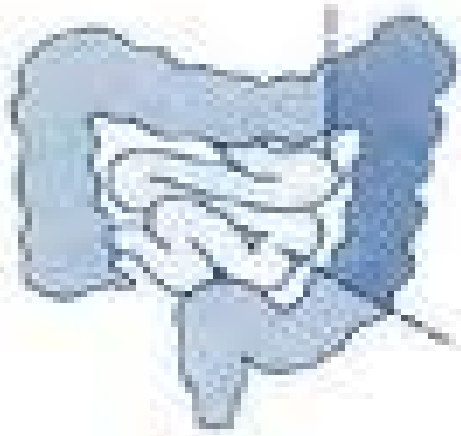
  C: Tumors with regional lymph node involvement

TREATMENT
SURGERY

- Surgical resection is the treatment of choice for most CRCs

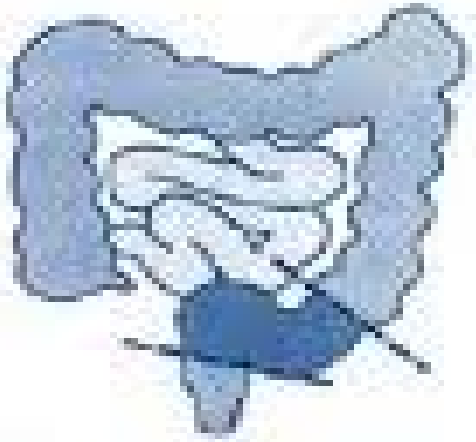


Right hemicolectomy



Left hemicolectomy

Transverse colectomy



Sigmoid colectomy

A colectomy may be done anywhere within the shaded areas of the diagrams.

Follow-up

- Recurrent colon cancer - Incidence of metachronous CRC is 1.1% to 4.7%
- High in persons who have serosal penetration or
- Lymph node involvement by tumor

Resection of Hepatic Metastases

- Recommended for those

  -whose primary tumor has been resected with curative intent and

  - in whom there is no evidence of extrahepatic disease

CHEMOTHERAPY

- Adjuvant Chemotherapy
- Neoadjuvant therapy
- Combined adjuvant radiation and chemotherapy

Chemotherapy schedules

Drug/combination	Dose and schedule
Infusional 5-FU with radiation therapy	
Concurrent radiation therapy and chemotherapy phase:	
5-FU	150–250 mg/m^2/day, infused over 24 hours/day during radiation therapy
Radiation therapy	Median dose of 4,500 cGy/25 fractions (range, 4,000 cGy/20 fractions to 5,040 cGy/28 fractions)
Fisher B, et al: Int J Radiat Oncol Biol Phys 45:291–295, 1999.	
Single-agent regimen	
Gemcitabine	1,000 mg/m^2 IV infused over 30 minutes once a week for 7 weeks, followed by a 1-week rest period
Subsequent cycles once a week for 3 consecutive weeks of every 4 weeks	
Burris HA, et al: J Clin Oncol 15:2403–2413, 1997.	
Erlotinib plus gemcitabine	
Erlotinib	100 mg PO daily
Gemcitabine	1,000 mg/m^2 IV infused over 30 minutes once a week for 7 weeks, followed by a 1-week rest period
Subsequent cycles once a week for 3 consecutive weeks of every 4 weeks	
Moore MJ, et al: J Clin Oncol 23(16S): abstract 1, 2005.	
FOLFIRINOX	
Oxaliplatin	85 mg/m^2
Leucovorin	400 mg/m^2 IV infused over 30 minutes
Irinotecan	180 mg/m^2
5-FU	400mg/m^2 bolus
5-FU	2400 mg/m^2 IV infused continuously over 46 hours
Repeat cycle every 2 weeks	
(Filgrastim should be considered because of risk of neutropenia)	
Conroy T, et al: N Engl J Med 364:1817–1825, 2011.	

Monoclonal Antibodies