

2006 Update of Gastrointestinal (GI) Tumor Markers Clinical Practice Guideline: Recommended GI Tumor Markers

CEA (Colorectal Cancer)

- ◆ It is important to emphasize that measured levels of CEA may differ between laboratories and countries.
- ◆ Economic analyses suggest that intensive follow-up that incorporates CEA testing is cost-effective as compared to conventional follow-up.
- ◆ In addition to CEA every 3 months, annual CT of the chest and abdomen should be performed for 3 years after primary therapy for patients who are at high risk of recurrence and who could be candidates for curative-intent surgery. Pelvic CT should be performed on the same schedule for rectal cancer surveillance (Colorectal Cancer Surveillance: 2005 Update of ASCO Clinical Practice Guideline).

Screening	Staging/ Treatment Planning	Postoperative	Monitoring Response to Therapy
↓	↓	↓	↓
Not recommended	Order preoperatively for staging and surgical treatment planning	Perform every 3 months in patients with stage II or III disease for ≥ 3 years after diagnosis (if patient is a candidate for surgery or systemic therapy)	CEA is the marker of choice for monitoring metastatic colorectal cancer during systemic therapy
	↓	↓	↓
	Elevation (>5mg/ml) may indicate poorer prognosis	Retest elevated CEA	Measure CEA at start of treatment and every 1-3 months during active treatment
	Data insufficient to support use of CEA to determine whether to treat with adjuvant therapy	↓	↓
		If confirmed, conduct further evaluation for metastatic disease (does not justify the institution of adjuvant therapy or systemic therapy for presumed metastatic disease)	Restage if CEA levels persistently rise above baseline (rising levels suggest progressive disease even in the absence of corroborating radiographs)
		↓	↓
		<i>*Interpret CEA elevations within 1-2 weeks following chemotherapy with caution.</i>	Re-evaluate and consider alternative treatment strategy
		<i>*See colorectal cancer flow sheet at http://www.asco.org/guidelines/gitm</i>	<i>*Use caution when interpreting a rising CEA level during the first 4-6 weeks of new therapy; spurious early rises may occur, especially after Oxaliplatin.</i>

EXCEPTIONS

- ◆ Chemotherapy-associated CEA increases may be related to treatment-induced changes in liver function
- ◆ Gastritis
- ◆ Peptic ulcer disease
- ◆ Diverticulitis
- ◆ Liver diseases
- ◆ Chronic Obstructive Pulmonary Disease (COPD)
- ◆ Diabetes
- ◆ Any acute or chronic inflammatory state

CA 19-9 (Pancreatic Cancer)

◆ Present data are insufficient to recommend CA 19-9 for screening, diagnosis, staging, surveillance, or monitoring treatment of patients with colorectal cancer.

Screening	Operability (Resectability)	Evidence of Recurrence	Monitoring Response to Therapy
↓ Not recommended	↓ Not recommended to determine operability or the results of operability in pancreatic cancer	↓ CA 19-9 determinations by themselves cannot provide definitive evidence of disease recurrence ↓ Confirm with imaging studies for clinical findings and/or biopsy	↓ Not to be used alone or routinely for monitoring response to treatment ↓ Measure CA 19-9 at start of treatment and every 1-3 months during active treatment (for locally advanced metastatic disease) ↓ Elevation may be indicative of progressive disease; seek confirmation with other studies

Additional Tumor Markers Reviewed in 2006 GI Tumor Markers Update

Colorectal Cancer Tumor Markers	Not Recommended
CA 19-9	Present data are insufficient to recommend CA 19-9 for screening, diagnosis, staging, surveillance, or monitoring treatment of patients with colorectal cancer.
DNA index, %S phase	Neither flow cytometrically derived DNA Ploidy (DNA index) nor flow cytometric proliferation analysis (%S phase) should be used to determine prognosis of early stage colorectal cancer.
p53	Present data are insufficient to recommend the use of p53 expression or mutation for screening, diagnosis, staging, surveillance, or monitoring treatment of patients with colorectal cancer.
ras	Present data are insufficient to recommend the use of the ras oncogene for screening, diagnosis, staging, surveillance, or monitoring treatment of patients with colorectal cancer.
TS, DPD, TP	<ul style="list-style-type: none"> ◆ Thymidine synthase (TS), dihydropyrimidine dehydrogenase (DPD), and thymidine phosphorylase (TP) are tissue markers that have been used to predict response to treatment of established carcinomas and thus are not useful for screening. ◆ None of the three markers—TS, DPD, or TP—are recommended for use in determining the prognosis of colorectal carcinoma. ◆ There is insufficient evidence to recommend use of TS, DPD, or TP as predictors of response to therapy. ◆ There is insufficient evidence to recommend use of TS, DPD, or TP for monitoring response to therapy.
MSI	Microsatellite instability (MSI) ascertained by PCR is not recommended at this time to determine the prognosis of operable colorectal cancer nor to predict the effectiveness of 5-FU adjuvant chemotherapy.
18q-LOH/DCC	Assaying for loss of heterozygosity (LOH) on the long arm of chromosome 18 (18q) or DCC protein determination by immunohistochemistry should not be used to determine the prognosis of operable colorectal cancer, nor to predict response to therapy.

These tables are derived from recommendations in the 2006 Update of Recommendations for the Use of Tumor Markers in Gastrointestinal Cancer. This table is a practice tool based on ASCO® practice guidelines and is not intended to substitute for the independent professional judgment of the treating physician. Practice guidelines do not account for individual variation among patients. This tool does not purport to suggest any particular course of medical treatment. Use of the practice guidelines and this table are voluntary. The practice guideline and additional information is available at <http://www.asco.org/guidelines/gitm>. Copyright © 2006 by the American Society of Clinical Oncology. All rights reserved.