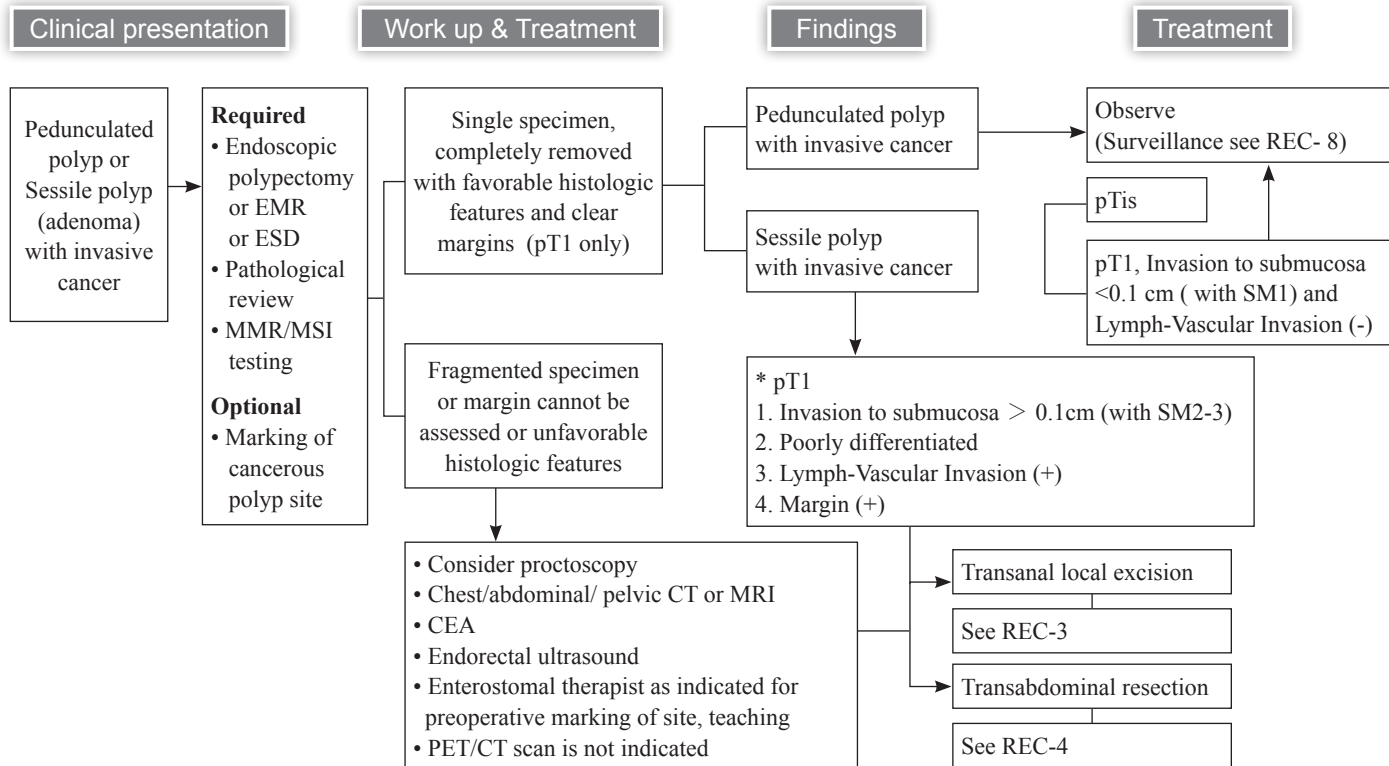
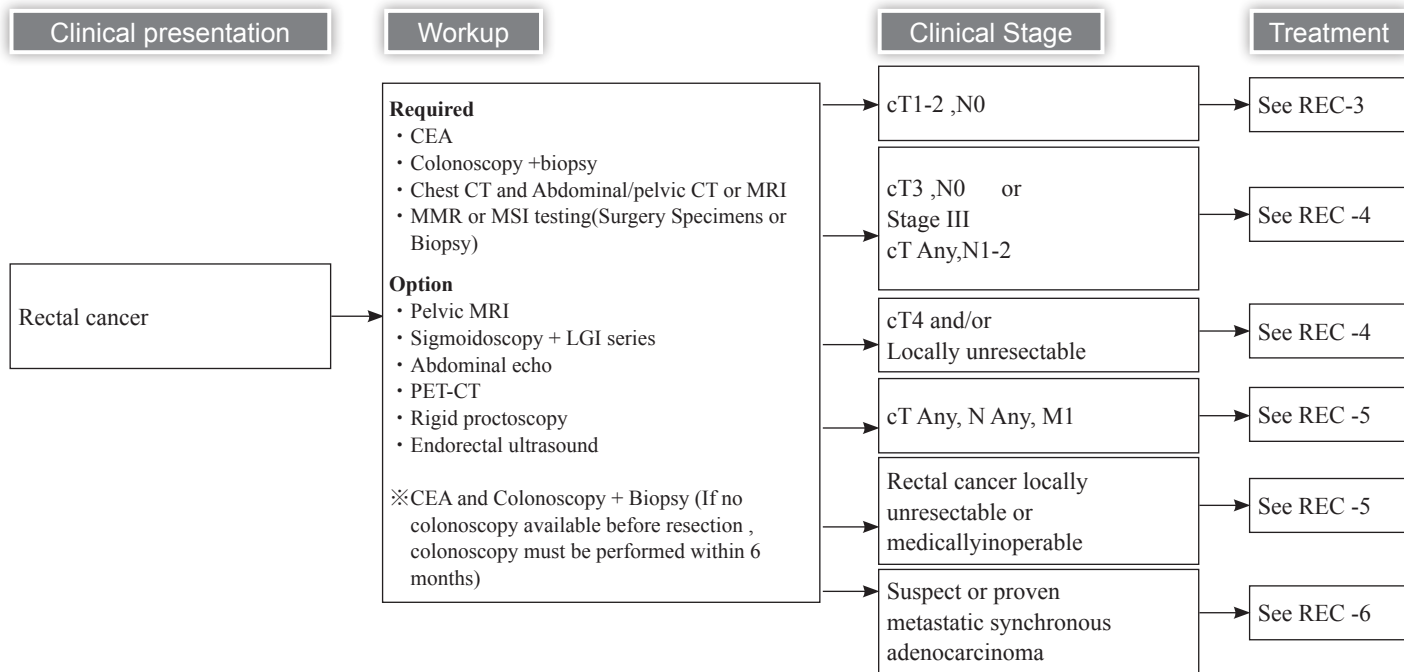




Colorectal Cancer

《 REC-1 》

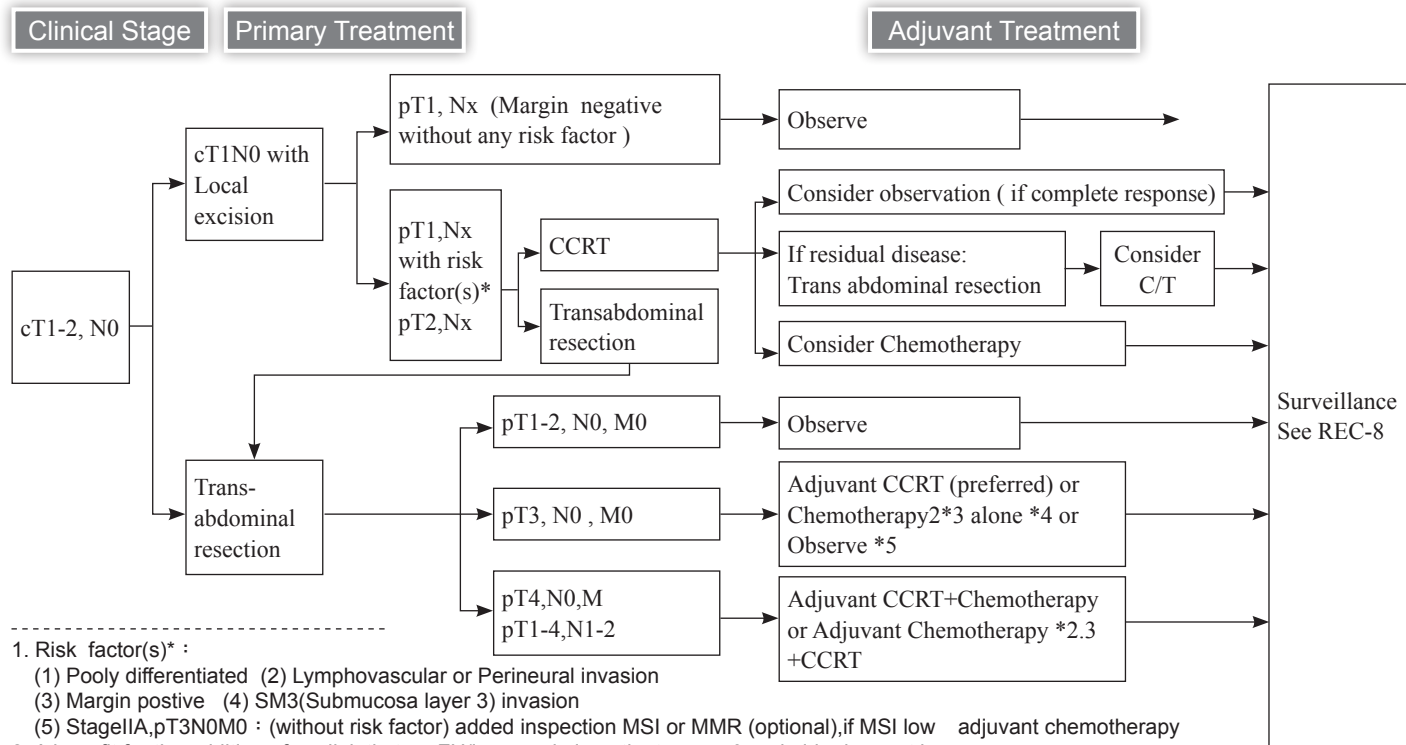




Definition of rectal cancer:

The distance from the lower edge of the lesion to the anus within 15 cm is the definition of rectal cancer. Lower third rectal cancer is 0-7 cm from anal verge. Middle third rectal cancer is 7.1-11cm from anal verge. Upper third rectal cancer is 11.1-15 cm from anal verge. For patients with locally advanced middle third and lower third rectal cancers, and age between 18-75 years old, neoadjuvant concurrent chemo-radiotherapy was recommended.

《 REC-3 》



1. Risk factor(s)* :

- (1) Poorly differentiated (2) Lymphovascular or Perineural invasion
- (3) Margin positive (4) SM3(Submucosa layer 3) invasion

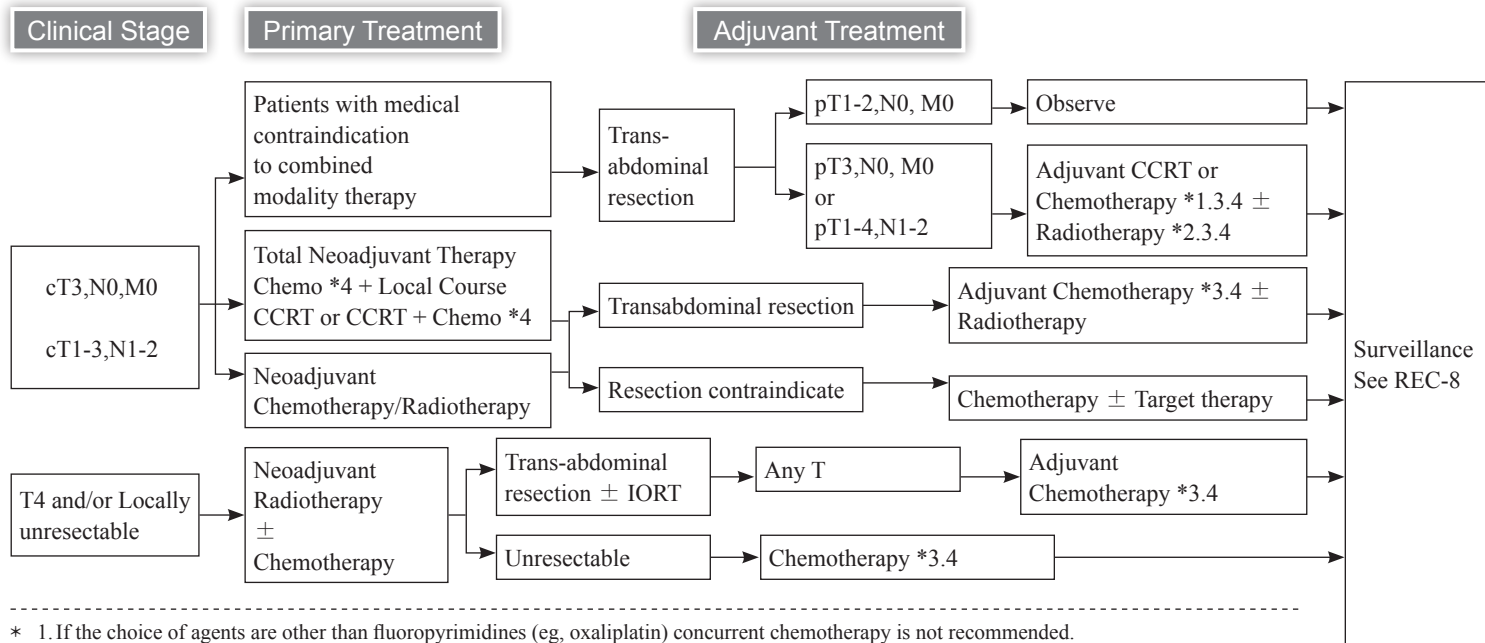
(5) StageIIA,pT3N0M0 : (without risk factor) added inspection MSI or MMR (optional),if MSI low adjuvant chemotherapy

2. A benefit for the addition of oxaliplatin to 5-FU/leucovorin in patients age 70 and older has not been proven

3. For patients who are under 70 years old of age and ECOG: 0-2 points,suggested standard combination chemotherapy

4. Only for R0 resection

5. Observe : only for upper rectum , G1/G2 , LVSI (-), R0 resection & mesorectum invasion <2mm

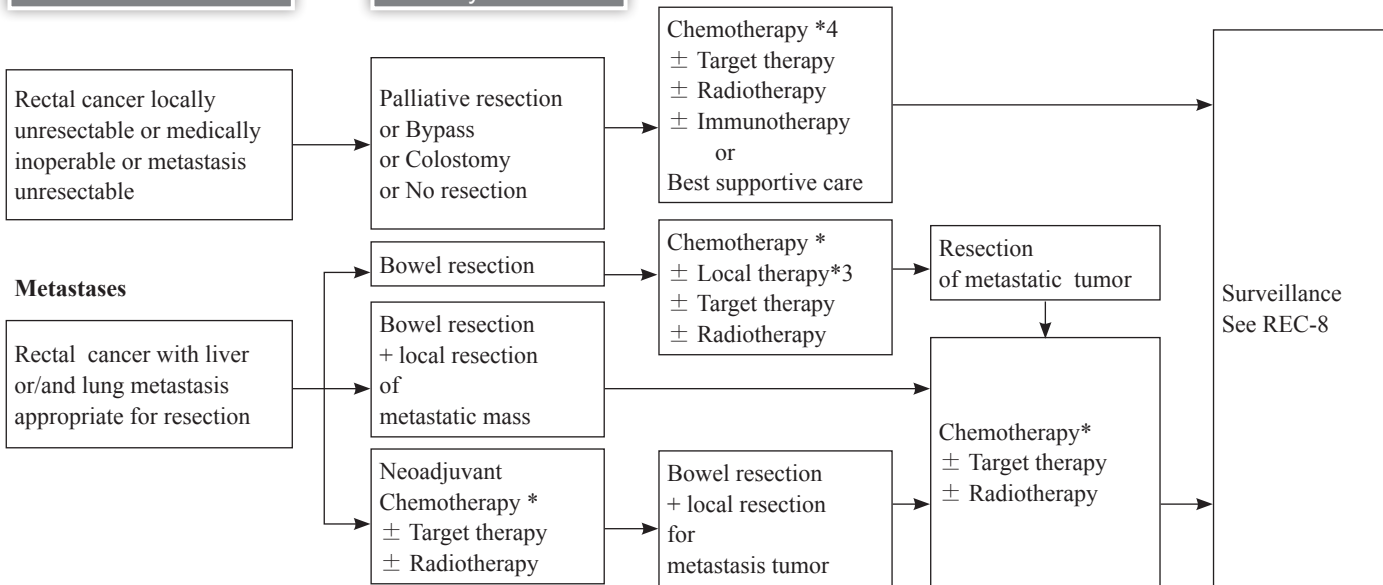


- * 1. If the choice of agents are other than fluoropyrimidines (eg, oxaliplatin) concurrent chemotherapy is not recommended.
- * 2. For patients with proximal T3, N0 disease with clear margins and favorable prognostic features, the incremental benefit of RT is limited. Chemotherapy alone is considered.
- * 3. A benefit for the addition of oxaliplatin to 5-FU/leucovorin in patients age 70 and older has not been proven.
- * 4. For patients who are under 70 years old of age and ECOG: 0-2 points, we suggested standard combination chemotherapy.
- * 5. Post CCRT and before surgery maintenance add oral chemotherapy with 5-Fluorouracil base (optional)
- * 6. Surveillance recommendations include DRE, proctoscopy every 3-4 months for 2 years, then every 6 months for a total of 5 years. MRI rectum is recommended every 6 months for at least 3 years to monitor for extraluminal local recurrence.

《 REC-5 》

Clinical Presentation

Primary Treatment

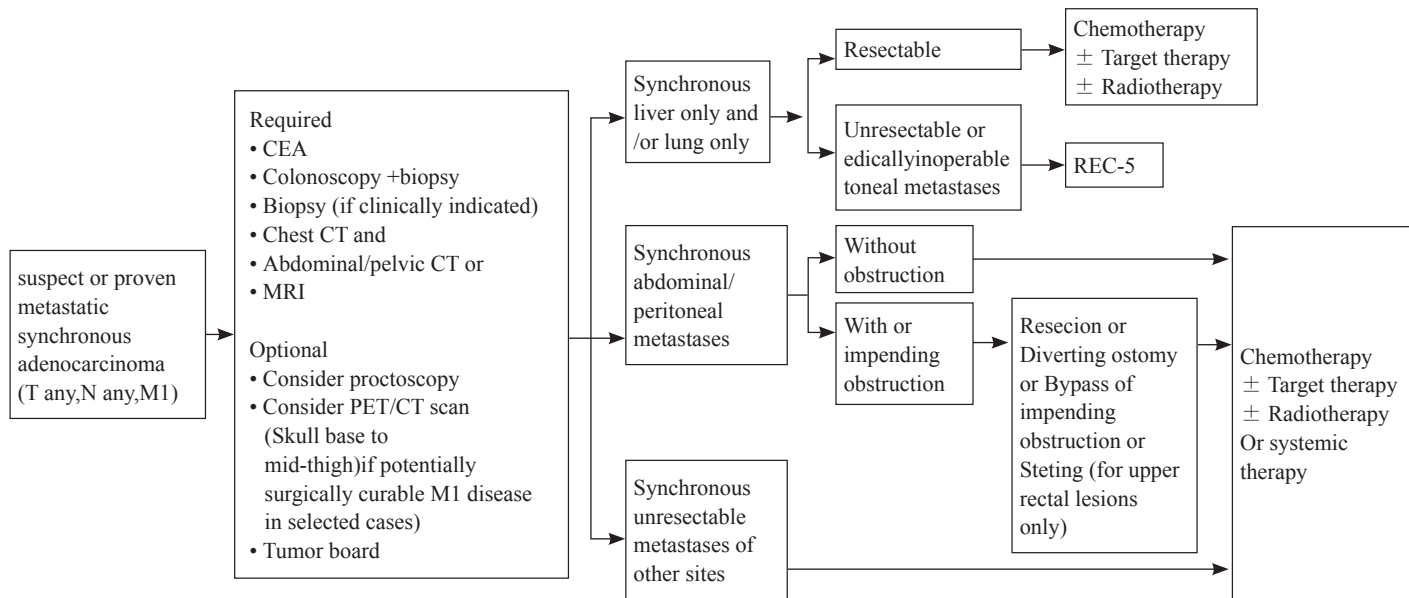


- * 1. Determination of tumor gene status for KRAS, NRAS and BRAF mutations and HER2 amplifications (individually or as part of tissue- or blood-based next-generation sequencing [NGS panel]) (optional).
- * 2. For patients who are under 70 years old of age and ECOG: 0-2 points, we suggested standard combination chemotherapy.
- * 3. For non-progressive primary tumor, resection is preferred over locally ablative procedures (eg, image-guided ablation or stereotactic body radiation therapy (SBRT)). However, these local techniques can be considered for liver or lung oligometastases.
- * 4. Hepatic artery infusion ± systemic 5-FU/leucovorin (category 2B) is also an option at institutions with experience in both the surgical and medical oncologic aspects of this procedure.

Clinical presentation

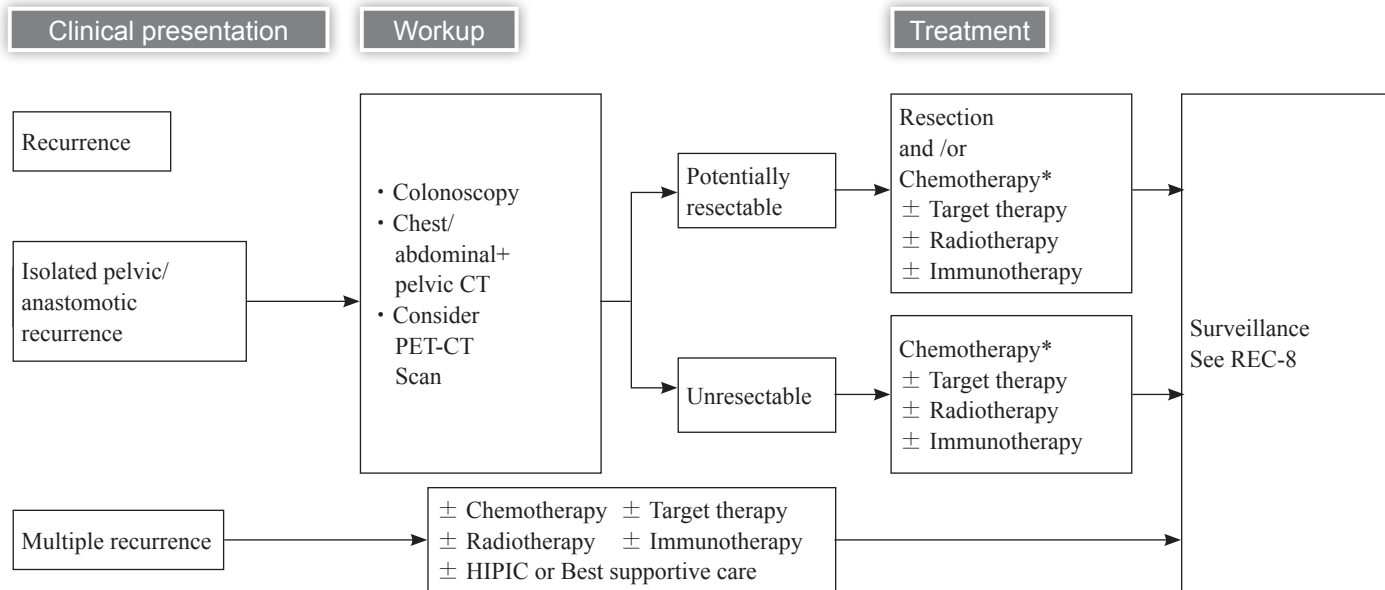
Workup

Primary treatment ±



- * 1. Determination of tumor gene status for KRAS, NRAS and BRAF mutations and HER2 amplifications (individually or as part of tissue- or blood-based next generation sequencing [NGS panel]) (optional).
- * 2. For patients who are under 70 years old of age and ECOG: 0-2 points, we suggested standard combination chemotherapy.
- * 3. Consider resection only if imminent risk of obstruction, significant bleeding, perforation, or other significant tumor-related symptoms.

《 REC-7 》

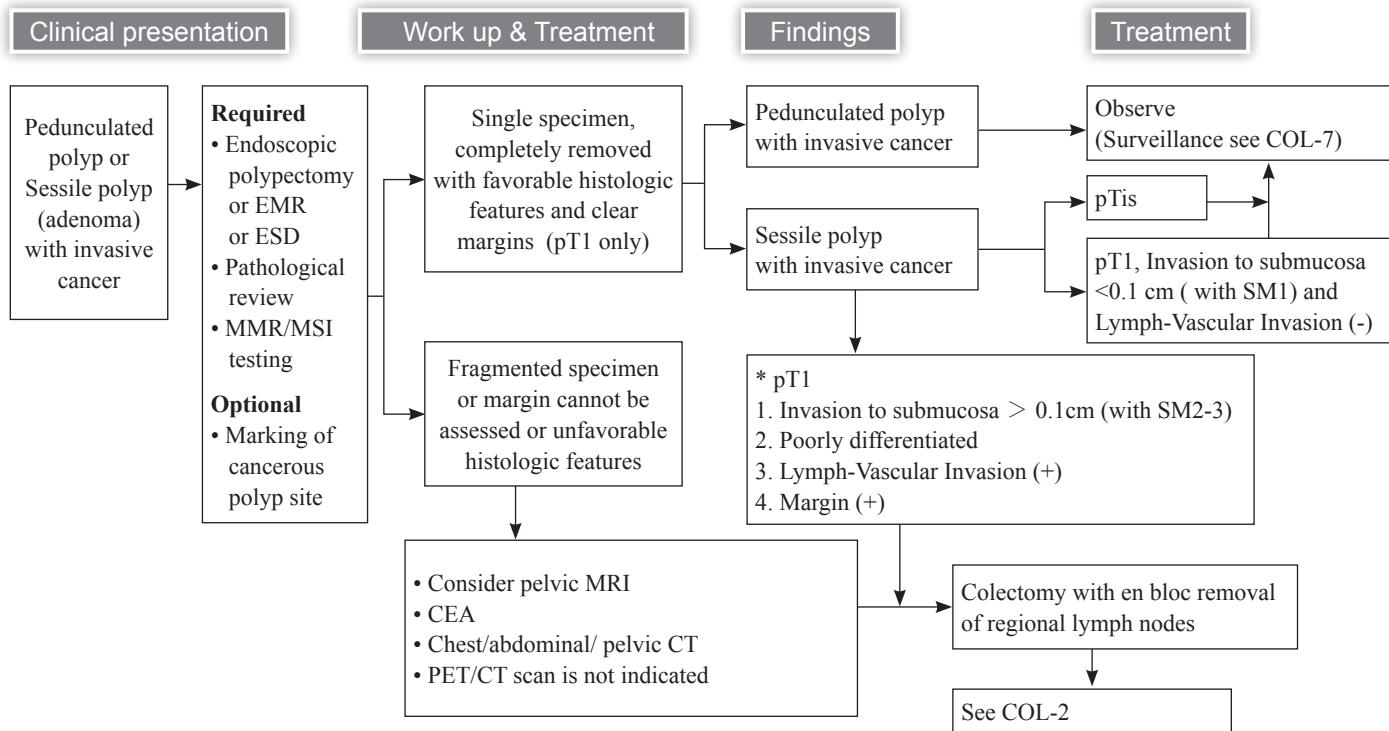


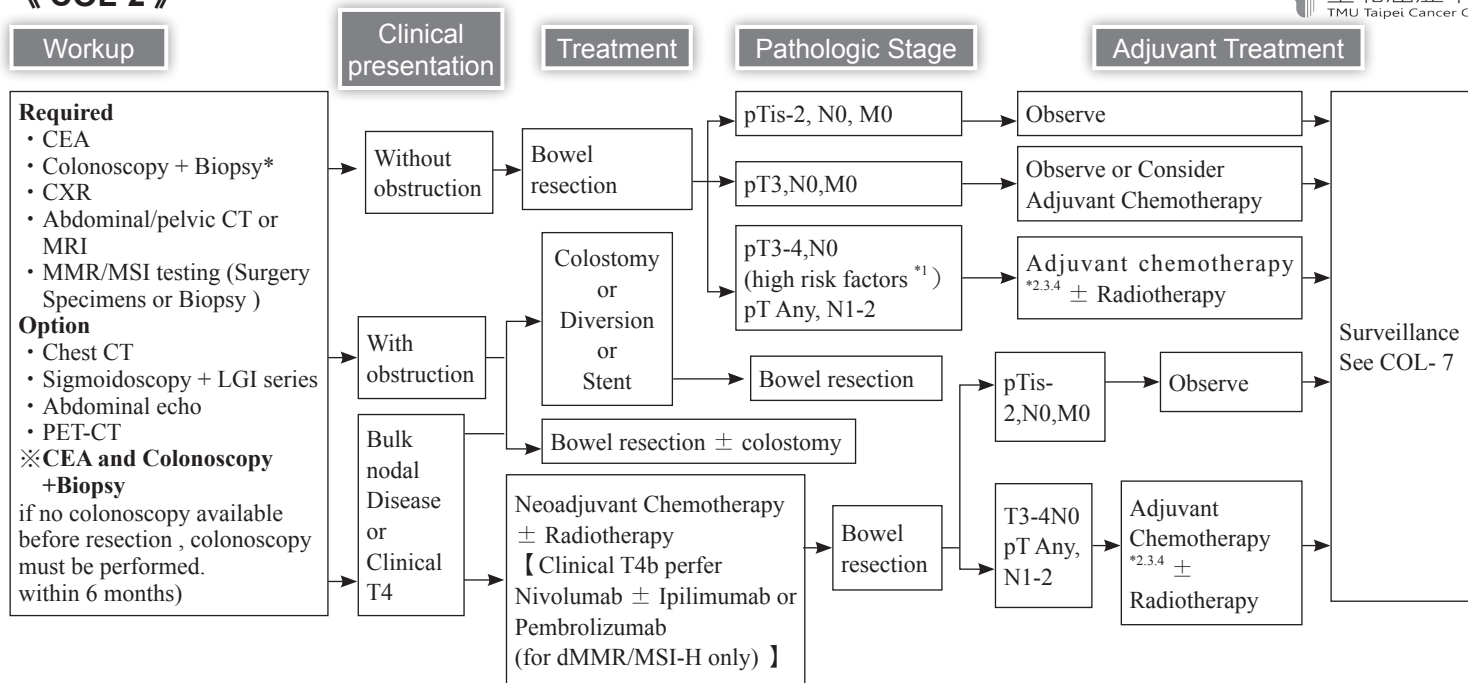
1. Determination of tumor gene status for KRAS.NRAS and BRAF mutations and HER2 amplifications (individually or as part of tissue- or blood-based next-generation sequencing [NGS panel]) (optional).
2. If d-MMR,MSI-H consider Immunotherapy
3. For patients who are under 70 years old of age and ECOG: 0-2 points,suggested standard combination chemotherapy
4. Colorectal cancer is not only associated with peritoneal metastasis of liver and lung metastasis, and ECOG:0-1, heart, lung, kidney function normal, → Complete cytoreductive surgery and/or HIPEC (Hyperthermic Intraperitoneal Chemotherapy)

《 REC-8 (Surveillance) 》

| Follow up Program for Rectal Cancer Patients (at least 5 years) | |
|---|---|
| CEA | After the first month, every three to six months,in first two years. once every six months thereafter. |
| Chest /Abdomen + pelvic CT | (1) Stage II,III: every 6–12 months for a total of 5 y |
| | (2) Stage IV: every 3–6 mo x 2 y, then every 6–12 mo for a total of 5 y. |
| Colonoscopy or Barium enema + Sigmoidoscopy | <p>At least once in the first year, then once every other year.</p> <ol style="list-style-type: none"> 1. Those who didn't had whole colonoscopy before preoperative obstructive lesions should do the whole colonoscopy 3-6 months after operation. 2. If advanced adenoma, repeat in every 1 year. 3. If no advanced adenoma, repeat in every 3 year , then every 5 years. |
| Rigid proctoscopy (optional) | every 3-4 months for 2 years, then every 6 months for a total of 5 years. |
| Abdomen sono (optional) | six months. |
| PET-CT scan (optional) | Clinical evaluation is required when needed. |

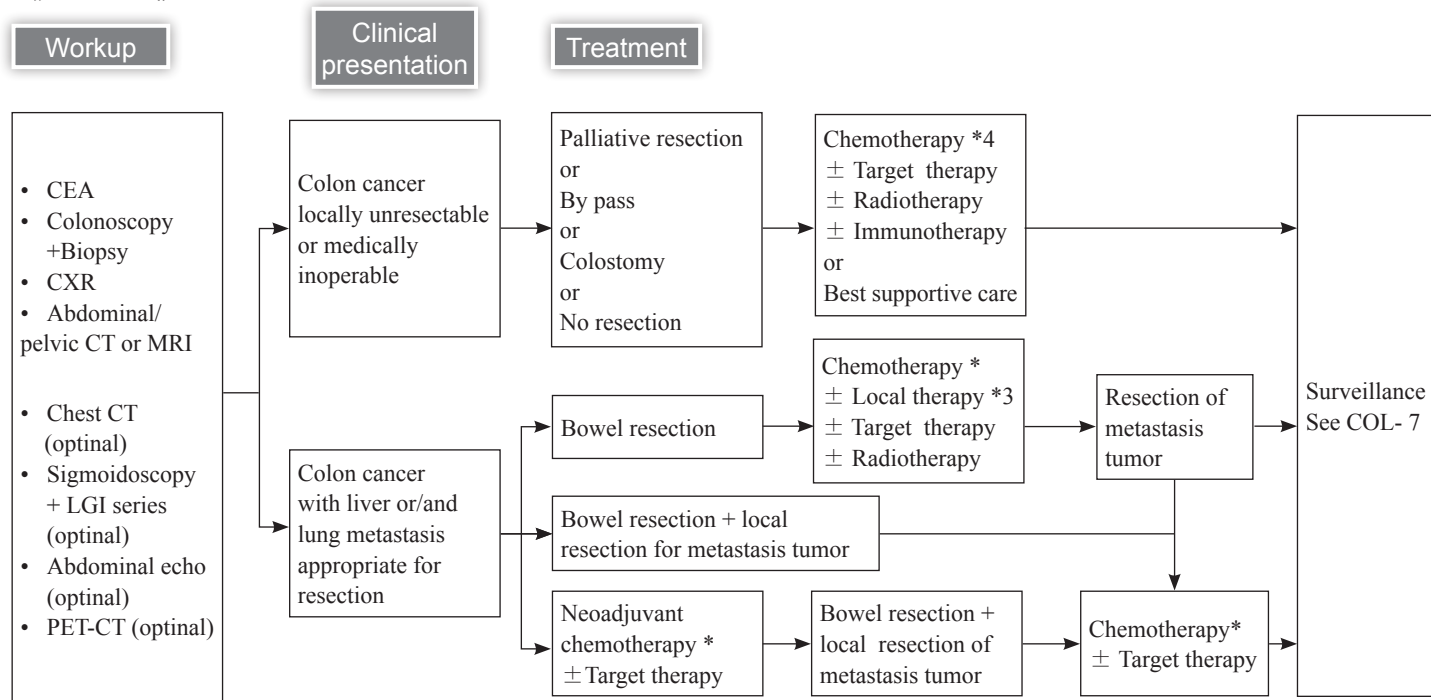
《 COL-1 》





- * 1. High risk factors : (1) Poorly differentiated (2) Lymphatic/vascular/perineural invasion 3) <12 lymph nodes examined (4) Localized Perforation (5) Bowel obstruction (6) Close, indeterminate or positive margins (7) StageIIA,pT3N0M0 : (without risk factor) added inspection MSI or MMR (optional),if MSI low → adjuvant Chemotherapy
- * 2. A survival benefit has not been demonstrated for the addition of oxaliplatin to 5-FU/leucovorin in stage II colon cancer. Tournigand C, André T, Bonnetain F, et al. Adjuvant therapy with fluorouracil and oxaliplatin in stage II and elderly patients (between ages 70 and 75 years) with colon cancer: subgroup analyses of the Multicenter International Study of Oxaliplatin, Fluorouracil, and Leucovorin in the Adjuvant Treatment of Colon Cancer trial. J Clin Oncol 2012; published online ahead of print on August 20, 2012.
- * 3. A benefit for the addition of oxaliplatin to 5-FU/leucovorin in patients age 70 and older has not been proven.
- * 4. For patients who are under 70 years old of age and ECOG: 0-2 points, we suggested standard combination chemotherapy.

《 COL-3 》



1. Determination of tumor gene status for KRAS.NRAS and BRAF mutations and HER2 amplifications (individually or as part of next-generation sequencing [NGS panel]) (optional)
2. If d-MMR,MSI-H consider Immunotherapy
3. For patients who are under 70 years old of age and ECOG: 0-2 points,suggested standard combination chemotherapy

Workup

Metastases

- CEA
- Colonoscopy +Biopsy
- CXR
- Abdominal/pelvic CT or MRI
- KRAS gene status
- Chest CT (optional)
- Sigmoidoscopy + LGI series (optional)
- Abdominal echo (optional)
- PET-CT (optional)
- Needle biopsy, if clinically indicated
- Multidisciplinary team evaluation, including a surgeon experienced in the resection of hepatobiliary and lung metastases

Clinical presentation

Treatment

Colon cancer with peritoneal carcinomatosis without liver or lung metastases

Chemotherapy * ± Target therapy

without obstruction

Chemotherapy * ± Target therapy

Colon cancer with peritoneal carcinomatosis without liver or lung metastases

with obstruction

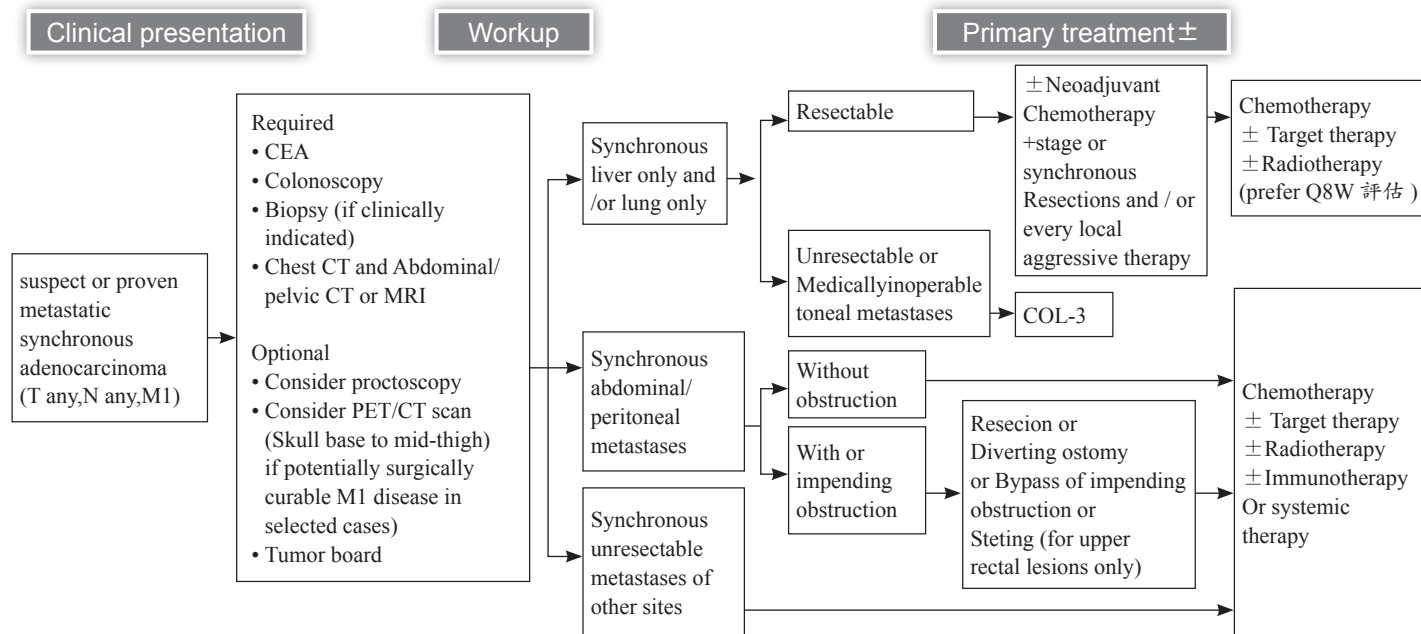
Colostomy or Palliative resection or Bypass procedure

Surveillance
See COL-7

Chemotherapy * ± Target therapy

1. Determination of tumor gene status for KRAS.NRAS and BRAF mutations and HER2 amplifications (individually or as part of tissue- or blood-based next-generation sequencing [NGS panel]) (optional)
2. If d-MMR,MSI-H consider Immunotherapy
3. For patients who are under 70 years old of age and ECOG: 0-2 points,suggested standard combination chemotherapy
4. Colorectal cancer is not only associated with peritoneal metastasis of liver and lung metastasis, and ECOG:0-1, heart, lung, kidney function normal, → Complete cytoreductive surgery and/or HIPEC (Hyperthermic Intraperitoneal Chemotherapy).

《 COL-5 》



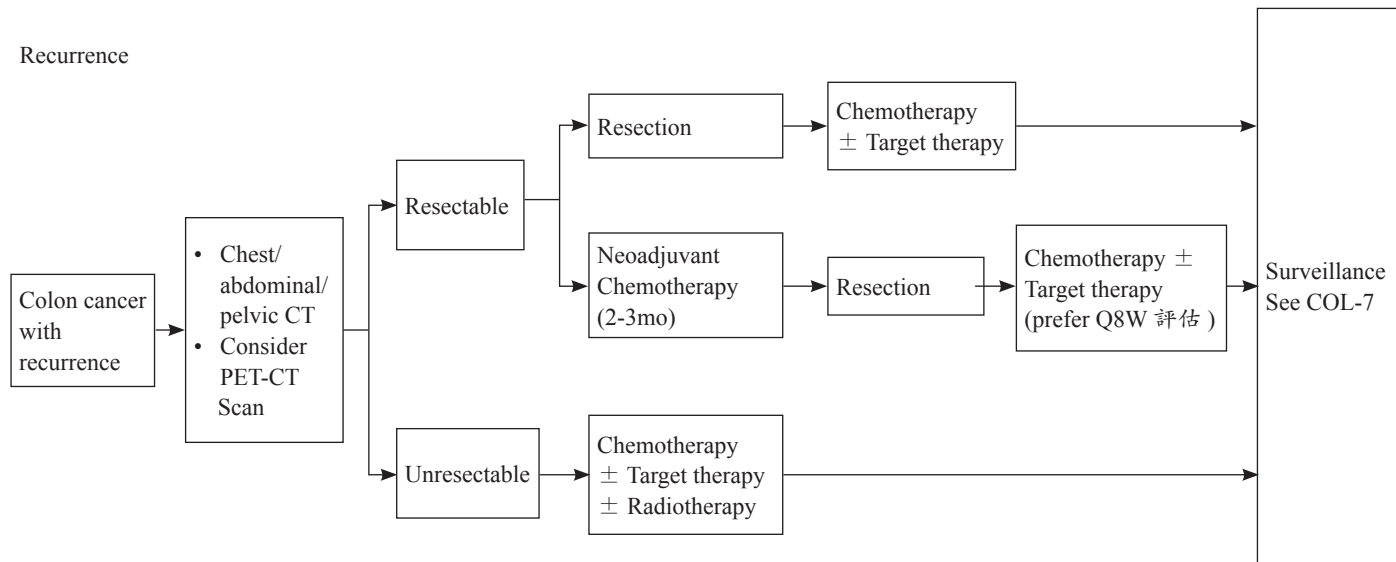
1. Determination of tumor gene status for KRAS.NRAS and BRAF mutations and HER2 amplifications (individually or as part of tissue- or blood-based next-generation sequencing [NGS panel]) (optional)
2. If d-MMR, MSI-H consider Immunotherapy
3. For patients who are under 70 years old of age and ECOG: 0-2 points, suggested standard combination chemotherapy
4. Colorectal cancer is not only associated with peritoneal metastasis of liver and lung metastasis, and ECOG:0-1, heart, lung, kidney function normal, → Complete cytoreductive surgery and/or HIPEC (Hyperthermic Intraperitoneal Chemotherapy)

Clinical
presentation

Workup

Treatment

Recurrence



1. Determination of tumor gene status for KRAS, NRAS and BRAF mutations and HER2 amplifications (individually or as part of tissue- or blood-based next-generation sequencing [NGS panel]) (optional)
2. If d-MMR, MSI-H consider Immunotherapy
3. For patients who are under 70 years old of age and ECOG: 0-2 points, suggested standard combination chemotherapy

《 COL-7 (Surveillance) 》

| Follow up Program for Rectal Cancer Patients (at least 5 years) | |
|---|--|
| CEA | After the first month, every three to six months,in first two years. once every six months thereafter. |
| Chest /Abdomen + pelvic CT | (1) Stage II,III: every 6–12 months for a total of 5 y. |
| | (2) Stage IV: every 3–6 months x 2 y, then every 6–12 mo for a total of 5 y. |
| Colonoscopy or Barium enema + Sigmoidoscopy | At least once in the first year, then once every other year. 1.Those who didn't had whole colonoscopy before preoperative obstructive lesions should do the whole colonoscopy 3-6 months after operation. 2.If advanced adenoma, repeat in every 1 year. 3.If no advanced adenoma, repeat in every 3 year , then every 5 years. |
| Abdomen sono (optional) | six months. |
| PET-CT scan (optional) | Clinical evaluation is required when needed. |

《 Reference 》

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