中山醫學大學附設醫院

大腸癌診療指引

本臨床指引參考台灣國家衛生研究院、與美國NCCN版本

大腸直腸癌多專科團隊編修

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2024/11/12	Version 18.0
2023/12/22	Version 17.0
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2018/11/15	Version 12.0
2017/12/21	Version 11.0
2016/12/01	Version 10.0
2015/12/24	Version 9.0
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2013/12/26	Version 7.0
2012/12/06	Version 6.0
2011/11/17	Version 5.0
2010/12/23	Version 4.0
2009/12/03	Version 3.0
2008/12/18	Version 2.0
2007/10/25	Version 1.0

癌症委員會主任委員	癌症委員會執行長	癌症中心主任	抗癌藥物安全小組	團隊負責人

修訂內容

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12	**WORKUP** **B1: 大腸癌(無遠端轉移)** **Colon Cancer Work Up** **Major Diagnosis** ● Colonoscopy ● Tumor makers ● Chest CT and abdominal CT ● Biopsy ● Pathology review ● Flexible Sigmoidoscopy + Double contrast Barium enema **(Option)** ● **RAS/BRAS testing** ● **MMR/MSI test/HER-2** ● **Consider PIK3CA testing** ● **廣泛型癌症基因藥物檢測分析** ● PET/CT scan before CCRT or CEA >20 ● Multidisciplinary team evaluation ● Operative risk and anesthetic risk evaluation	**WORKUP** **B1: 大腸癌(無遠端轉移)** **Colon Cancer Work Up** **Major Diagnosis** ● Colonoscopy ● Tumor makers ● Abdominal CT **or MRI** ● Biopsy ● Pathology review **(Option)** ● **RAS/BRAS testing** ● **MMR/MSI test/HER-2** ● **HER-2/PIK3CA/POLE/POLD1, RET, and NTRK test** ● **廣泛型癌症基因藥物檢測分析(NGS)** ● Chest CT ● Flexible Sigmoidoscopy + Double contrast Barium enema(if tumor obstruction) ● PET/CT scan before CCRT or CEA >20 ● Multidisciplinary team evaluation ● Operative risk and anesthetic risk evaluation

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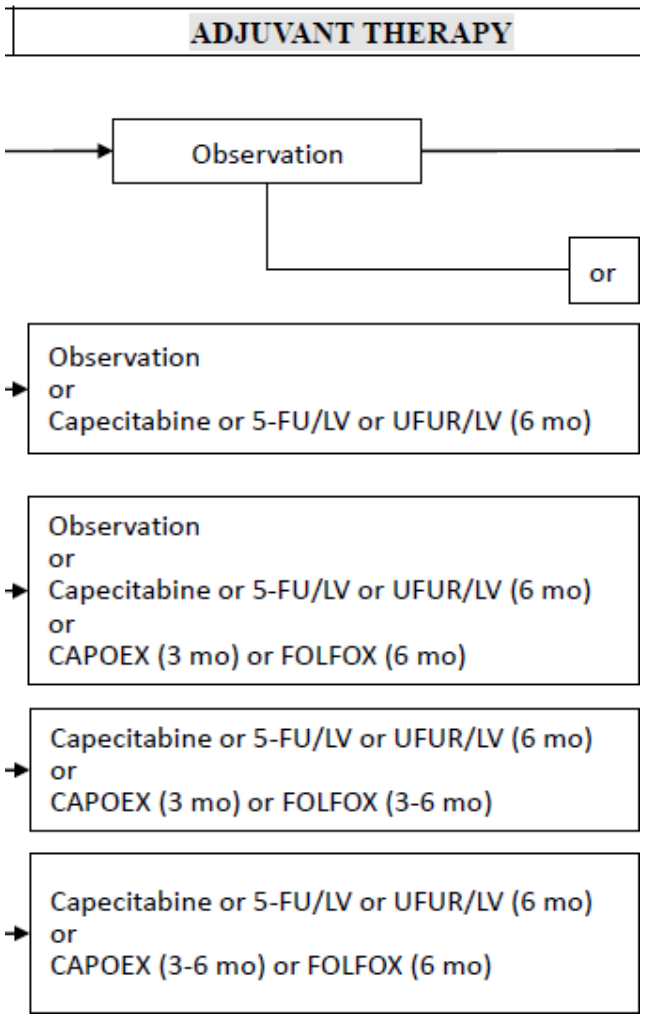
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or
Observation
or
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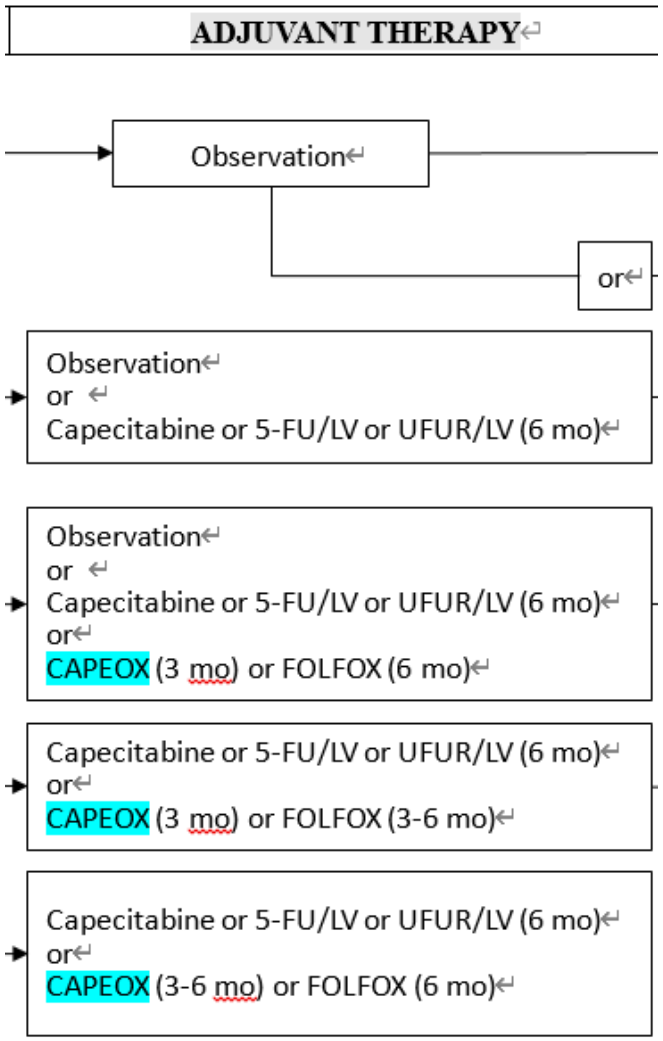
Observation
or
Capecitabine or 5-FU/LV or UFUR/LV (6 mo)
or
CAPOEX (3 mo) or FOLFOX (6 mo)
Capecitabine or 5-FU/LV or UFUR/LV (6 mo)
or
CAPOEX (3 mo) or FOLFOX (3-6 mo)
Capecitabine or 5-FU/LV or UFUR/LV (6 mo)
or
CAPOEX (3-6 mo) or FOLFOX (6 mo)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or
CAPEOX (3 mo) or FOLFOX (3-6 mo)
Capecitabine or 5-FU/LV or UFUR/LV (6 mo)
or
CAPEOX (3-6 mo) or FOLFOX (6 mo)

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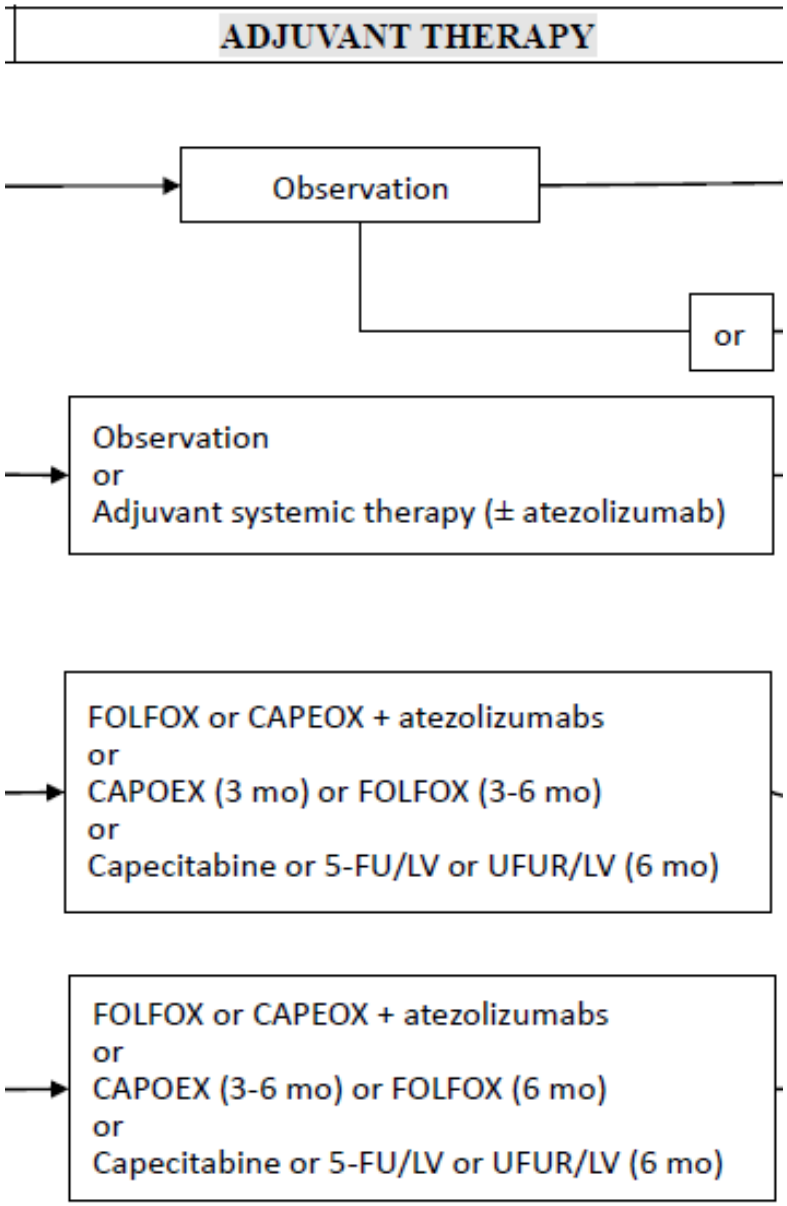
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Observation
or
Observation
or
Adjuvant systemic therapy (± atezolizumab)
FOLFOX or CAPEOX + atezolizumabs
or
CAPOEX (3 mo) or FOLFOX (3-6 mo)
or
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FOLFOX or CAPEOX + atezolizumabs
or
CAPOEX (3-6 mo) or FOLFOX (6 mo)
or
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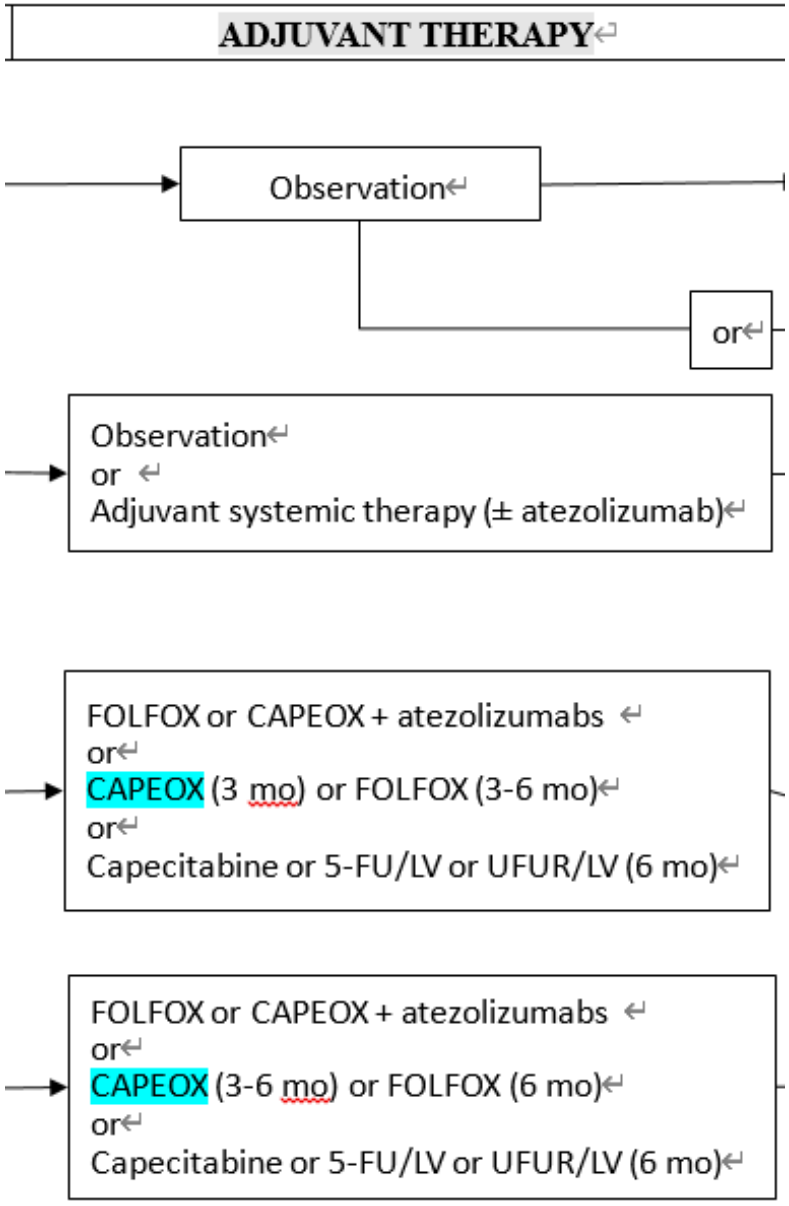
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or
CAPEOX (3-6 mo) or FOLFOX (6 mo)
or
Capecitabine or 5-FU/LV or UFUR/LV (6 mo)

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Adjuvant chemotherapy：CAPOEX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1000mg/m2	PO bid	D1-14	Q3W x 8 cycles
Oxaliplatin	130mg/m2	IV	D1	

Adjuvant chemotherapy：修訂 CAPEOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1000 mg/m2(NCCN), 825mg/m2(FDA)	PO bid	D1-14	Q3W x 8 cycles
Oxaliplatin	130mg/m2	IV	D1	

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Neoadjuvant Chemotherapy for Locally Advanced Disease：

CAPOEX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1000 g/m2	PO bid	D1-14	Q3W x4 cycles
Oxaliplatin	130mg/m2	IV	d1	

Neoadjuvant Chemotherapy for Locally Advanced Disease：

修訂 CAPEOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1000 mg/m2(NCCN), 825mg/m2(FDA)	PO bid	D1-14	Q3W x4 cycles
Oxaliplatin	130mg/m2	IV	d1	

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Systemic Chemotherapy for Advanced or Metastatic Disease

CAPOEX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1000mg/m2	PO bid	D1-14	Q3W
Oxaliplatin	130 mg/m2	IV	D1	

Systemic Chemotherapy for Advanced or Metastatic Disease

修訂 CAPEOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1000 mg/m2(NCCN), 825mg/m2(FDA)	PO bid	D1-14	Q3W
Oxaliplatin	130 mg/m2	IV	D1	

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Systemic Chemotherapy for Advanced or Metastatic Disease

CAPEOX + bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Bevacizumab	7.5 mg/kg	IV	D1	Q3W
CAPOEX				

Systemic Chemotherapy for Advanced or Metastatic Disease

修訂 **CAPEOX + bevacizumab**

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Bevacizumab	7.5 mg/kg	IV	D1	Q3W
CAPEOX				

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CAPEOX + panitumumab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Panitumumab	6 mg/kg	IV over 60 min	D1	Q2W
CAPOEX				Q3W

CAPEOX + panitumumab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Panitumumab	6 mg/kg	IV over 60 min	D1	Q2W
CAPEOX				Q3W

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新增 **Encorafenib + cetuximab or panitumumab ± FOLFIRI or FOLFOX (*BRAF V600E mutation positive*)**

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Encorafenib	300mg	PO	D1	Q2W
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2 hrs	D1	Q2W
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	
FOLFIRI or FOLFOX[2,3]			D1	Q2W

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Systemic Chemotherapy for Advanced or Metastatic Disease

2nd line

新增 **Fruquintinib**

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Fruquintinib	5 mg	PO	D1~21	Q4W

目 錄

一、 前言

本大腸癌治療指引內所提之各種診治意見，為實證醫學原則之建議，希望能為癌症患者及其家屬提供一個正確的指引；但對臨床醫師之醫療行為無絕對之法律性約束力！由於醫藥科技持續在進步，每位患者的病情亦不盡相同；醫師應就病人之病情做個別特殊性的考量，病人和家屬亦應與醫師溝通討論，以決定最適當之診治方式。

自民國七十一年起，癌症已躍居為國人十大死因第一位。我國於民國九十二年公布施行「癌症防治法」，並依據該法衍生「國家癌症防治五年計畫」。為達成上述計畫訂定之目標，提升民眾對癌症防治之認識，本院於 2004 年 11 月正式成立癌症委員會，配合國民健康局之癌症防治中心計畫，積極推動癌症防治相關工作，提供癌症診療與癌症篩檢服務，以確保民眾之健康。

二、組織病理分類與分化

腺癌 (Adenocarcinoma)佔所有病例的 90%以上，次多的黏液性腺癌(Mucinous adenocarcinoma)，及管性絨毛狀腺癌(Adenocarcinoma in tubulovillous adenoma)，其餘其他型態如戒指細胞癌 (Signet ring cell carcinoma)、鱗狀細胞癌 (Squamous cell carcinoma)、腺鱗狀癌 (Adenosquamous carcinoma)、未分化癌 (Undifferentiated carcinoma) Papillary adenocarcinoma、Carcinoid tumor 等。

大腸直腸癌的病理組織分化分為：

1. 分化良好 (grade 1)
2. 分化中度 (grade 2)
3. 分化不良或未分化 (grade 3)
4. 分化無法評估 (grade x)

cTNM 是臨床分期，
pTNM 是病理分期；
前綴 y 用於接受新輔助治療後的腫瘤分期（如 ypTNM），病理學完全緩解的患者分期為 ypT0N0cM0，可能類似於 0 期或 1 期。
前綴 r 用於經治療獲得一段無瘤間期後復發的患者（rTNM）。
Tis 包括腫瘤細胞局限於腺體基底膜(上皮內)或黏膜固有層(黏膜內)，未穿過黏膜肌層到達黏膜下層。
T4 的直接侵犯包括穿透漿膜侵犯其他腸段，並得到鏡下診斷的證實(如盲腸癌侵犯乙狀結腸)，或者，位於腹膜後或腹膜下腸管的腫瘤，穿破腸壁固有基層後直接侵犯其他的髒器或結構，例如降結腸後壁的腫瘤侵犯左腎或側腹壁，或者中下段直腸癌侵犯前列腺、精囊腺、宮頸或陰道。腫瘤肉眼上與其他器官或結構粘連則分期為 cT4b。但是，若顯微鏡下該粘連處未見腫瘤存在則分期為 pT3。
V 和 L 亞分期用於表明是否存在血管和淋巴管浸潤，而 PN 則用以表示神經浸潤（可以是部位特異性的）。

三、分期表 (依照 AJCC 第 8 版 TNM 分期)

表 1. T、N、M 的定義

原發腫瘤（T）	
Tx	原發腫瘤無法評估
T0	無原發腫瘤證據
Tis	原位癌：局限于上皮內或侵犯黏膜固有層
T1	腫瘤侵犯黏膜下層
T2	腫瘤侵犯固有肌層
T3	腫瘤穿透固有肌層到達漿膜下層，或侵犯無腹膜覆蓋的結直腸旁組織
T4a	腫瘤穿透腹膜髒層
T4b	腫瘤直接侵犯或粘連於其他器官或結構 c
區域淋巴結（N）	
Nx	區域淋巴結無法評估
N0	無區域淋巴結轉移
N1	有 1-3 枚區域淋巴結轉移
N1a	有 1 枚區域淋巴結轉移
N1b	有 2-3 枚區域淋巴結轉移
N1c	漿膜下、腸系膜、無腹膜覆蓋結腸/直腸周圍組織內有腫瘤種植 (TD tumor deposit），無區域淋巴結轉移
N2	有 4 枚以上區域淋巴結轉移
N2a	4-6 枚區域淋巴結轉移
N2b	7 顆及更多區域淋巴結轉移
遠處轉移（M）	
Mx	遠處轉移無法評估
M0	無遠處轉移
M1	有遠處轉移
M1a	遠處轉移局限於單個器官或部位（如肝、肺、卵巢、非區域淋巴結）
M1b	遠處轉移分佈於一個以上的器官/部位
M1c	腹膜表面轉移

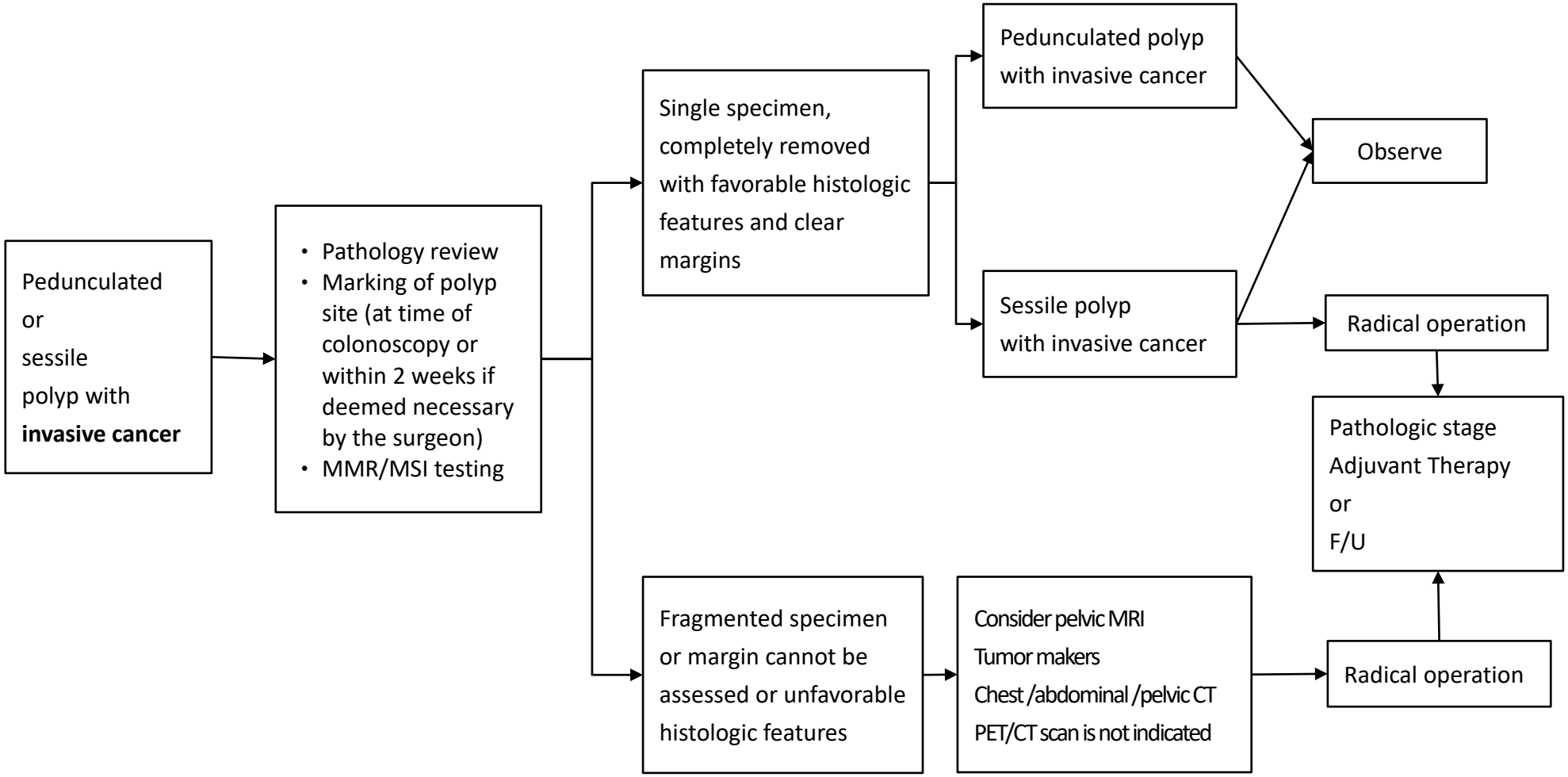
表 2. 分期組合(**Anatomic stage/prognostic groups)**

0	Tis	N0	M0
I	T1	N0	M0
	T2	N0	M0
IIA	T3	N0	M0
IIB	T4a	N0	M0
IIC	T4b	N0	M0
IIIA	T1-T2	N1/N1c	M0
	T1	N2a	M0
IIIB	T3-T4a	N1/N1c	M0
	T2-T3	N2a	M0
	T1-T2	N2b	M0
IIIC	T4a	N2a	M0
	T3-T4a	N2b	M0
	T4b	N1-N2	M0
IVA	Any T	Any N	M1a
IVB	Any T	Any N	M1b
IVC	Any T	Any T	M1c

四、大腸癌診療指引

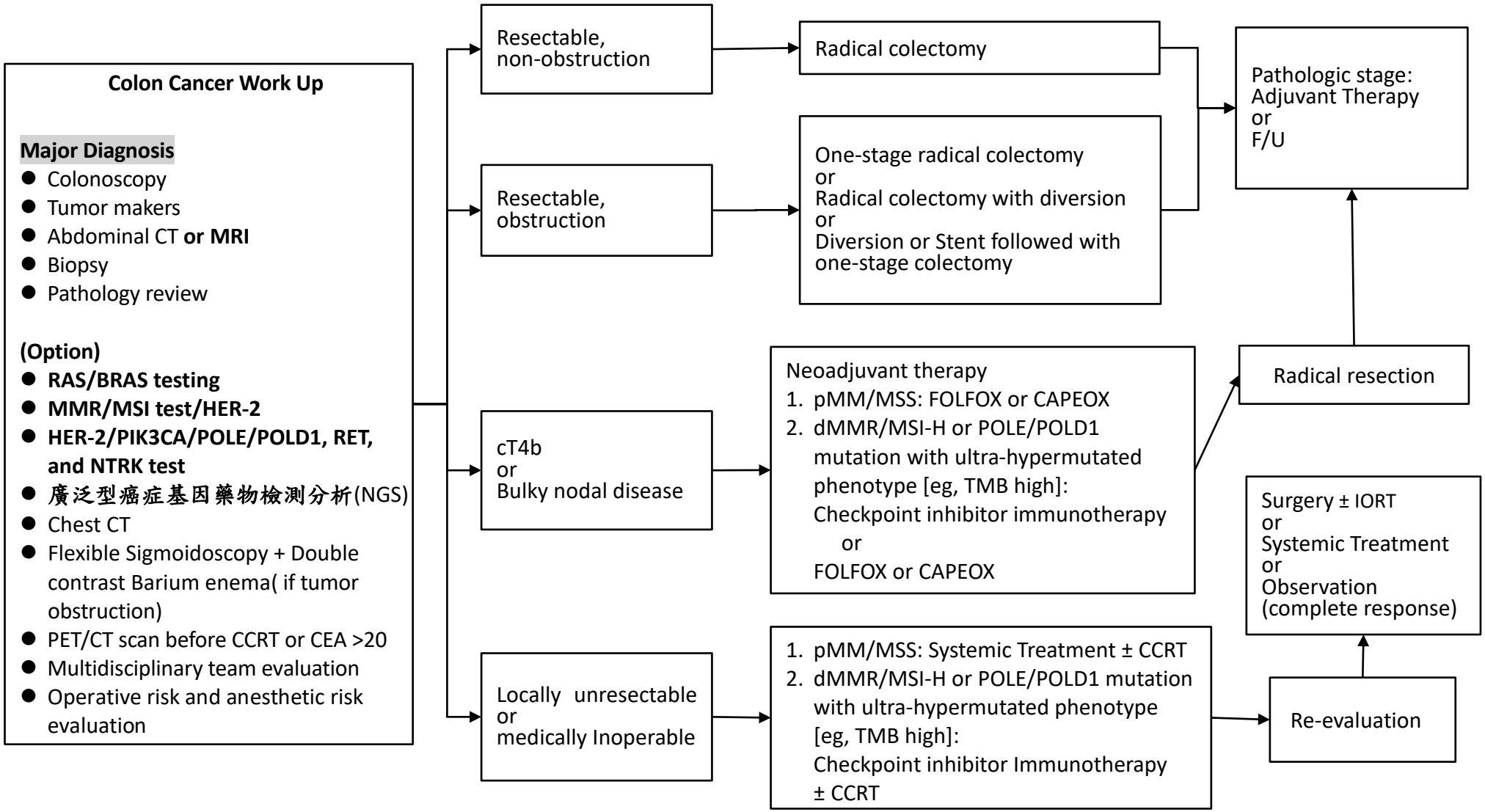
CLINICAL PRESENTATION	WORKUP	FINDINGS	PRIMARY TREATMENT

A: Malignant polyp



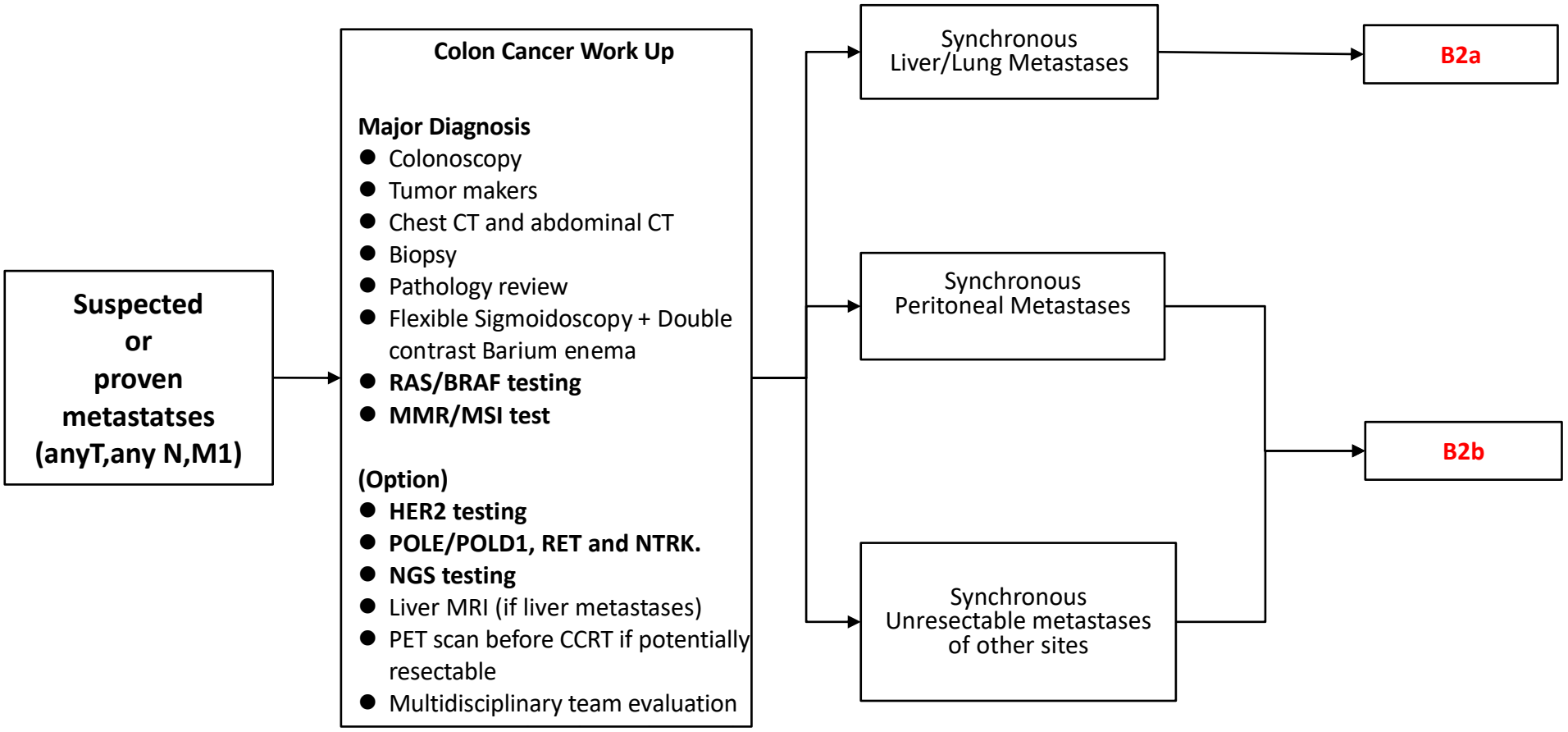
WORKUP	FINDINGS	PRIMARY TREATMENT

B1: 大腸癌(無遠端轉移)



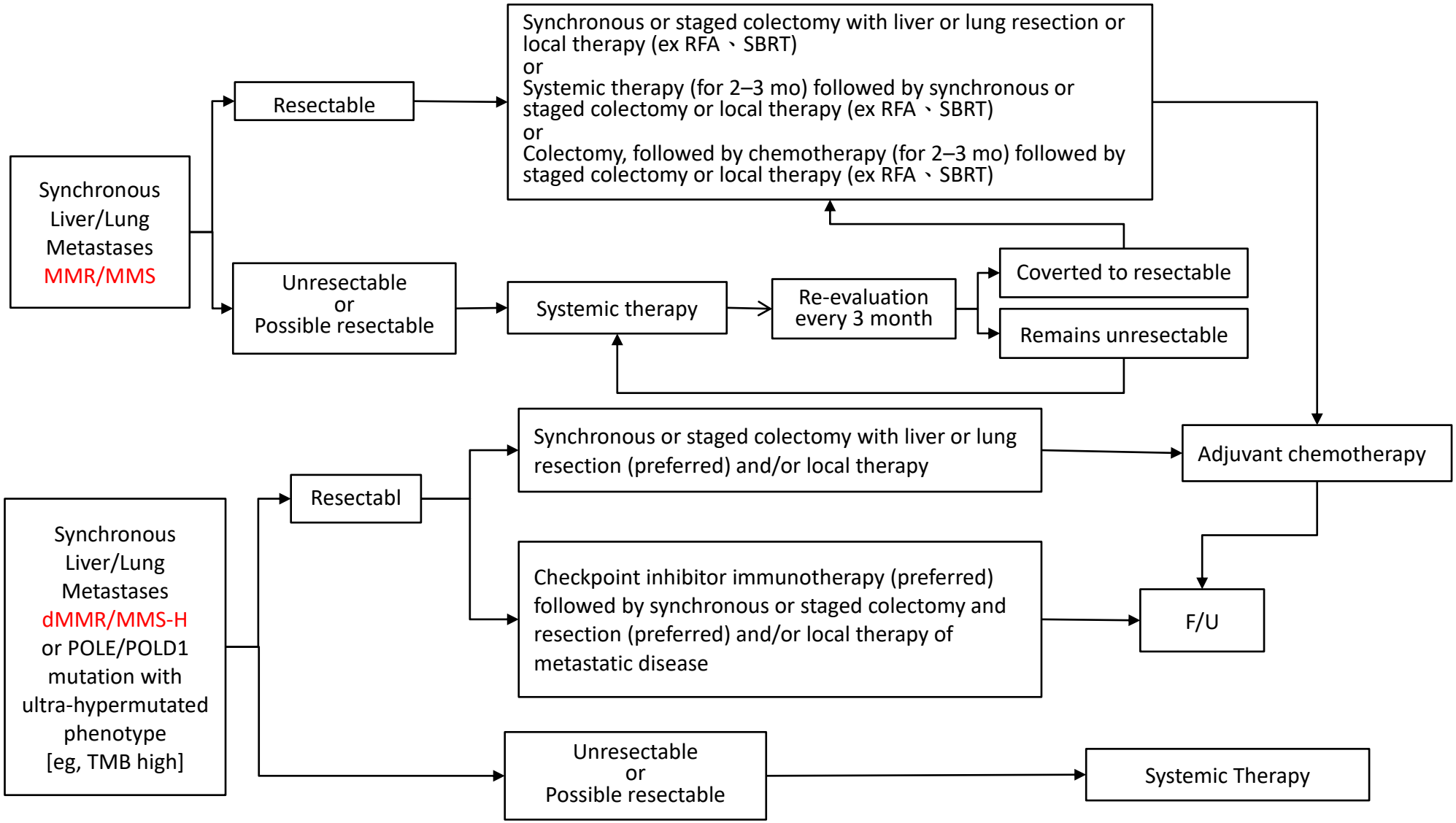
WORKUP	FINDINGS	PRIMARY TREATMENT

B2: 大腸癌 (有遠端轉移)



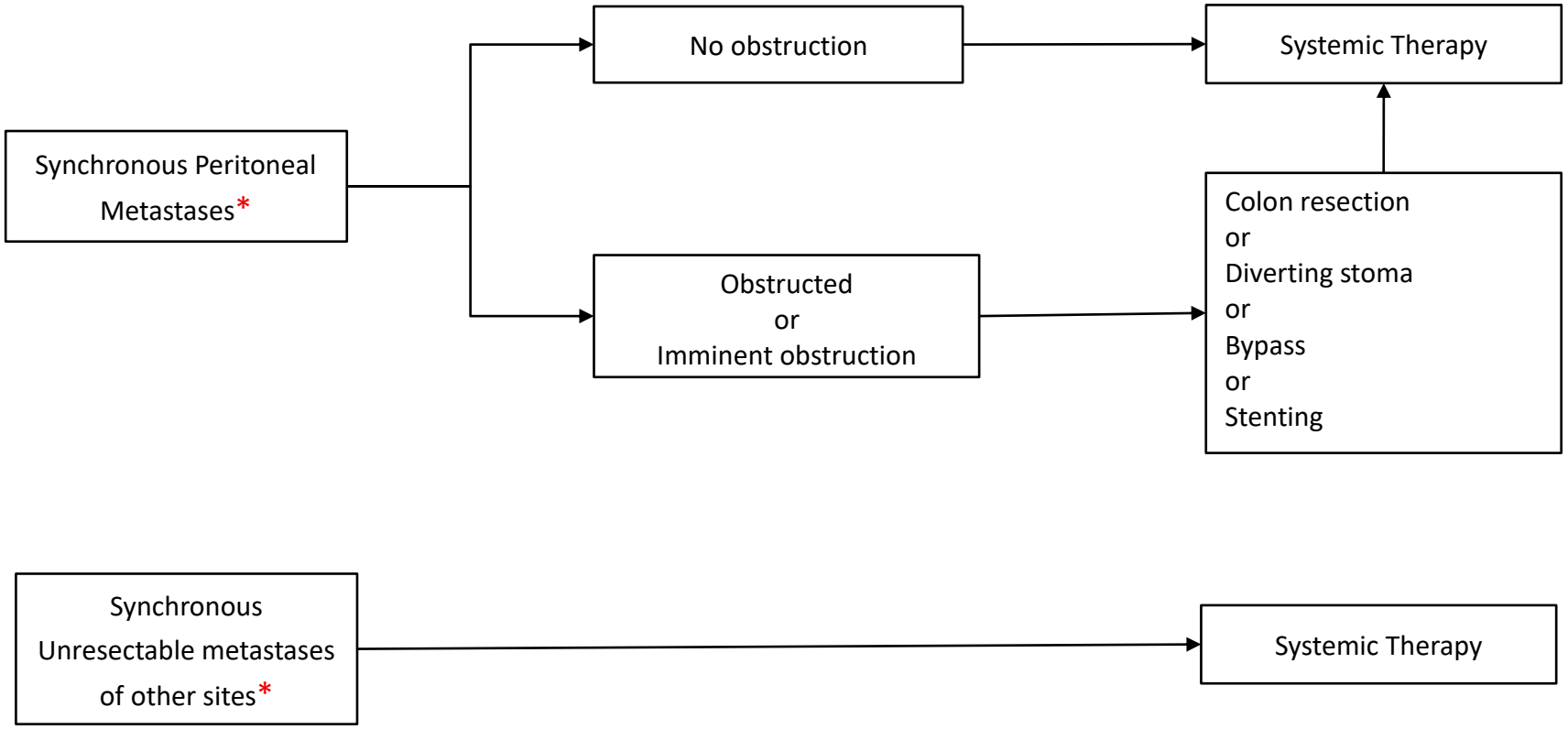
WORKUP	FINDINGS	PRIMARY TREATMENT

B2a: 大腸癌 (有遠端轉移)



WORKUP	FINDINGS	PRIMARY TREATMENT

B2b: 大腸癌（有遠端轉移）



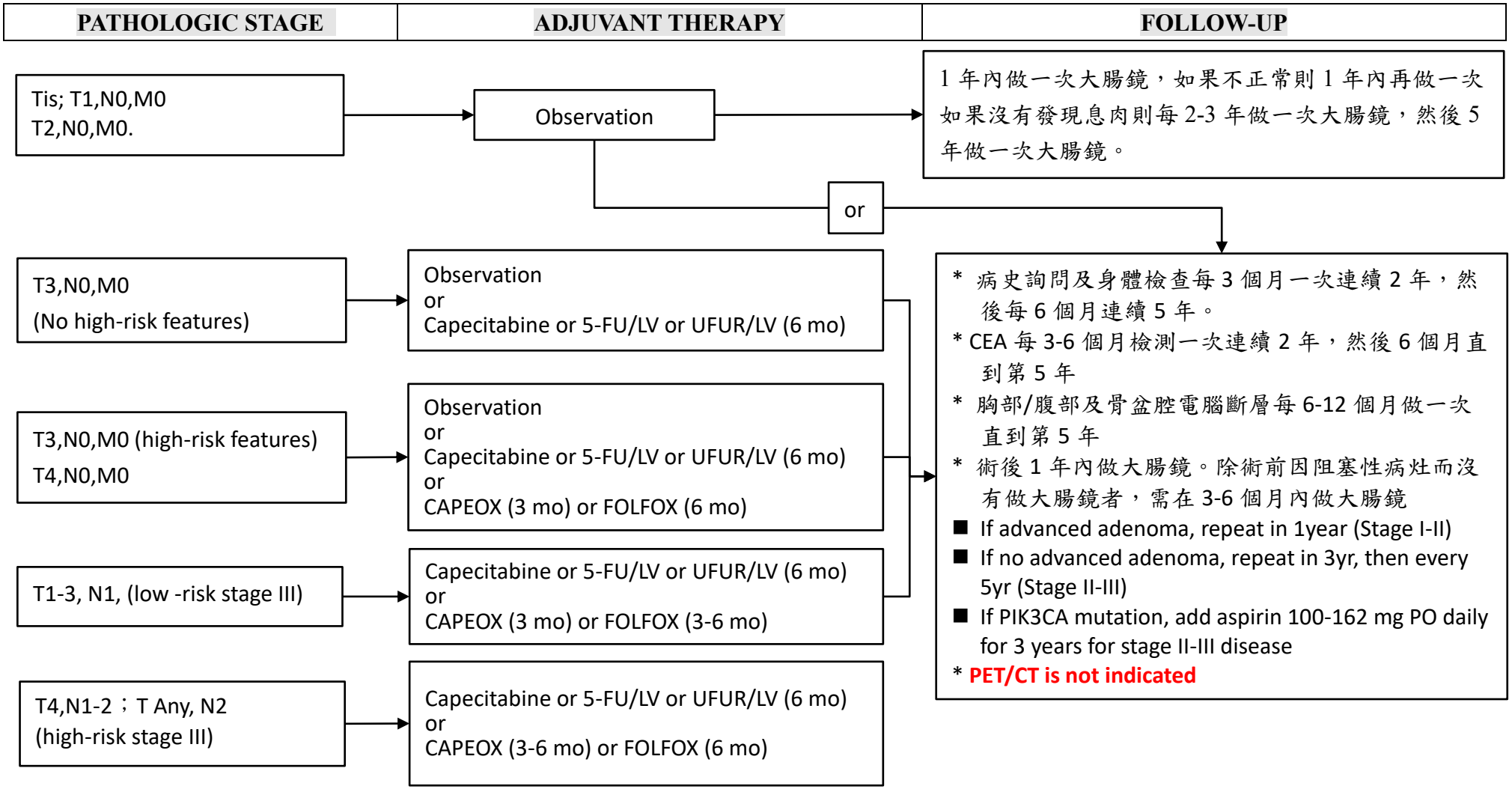
*

pMMR/MSS
dMMR/MSI-H
POLE/POLD1 mutation with ultra-hypermutated phenotype [eg, TMB high]

are managed in the same manner

Post OP

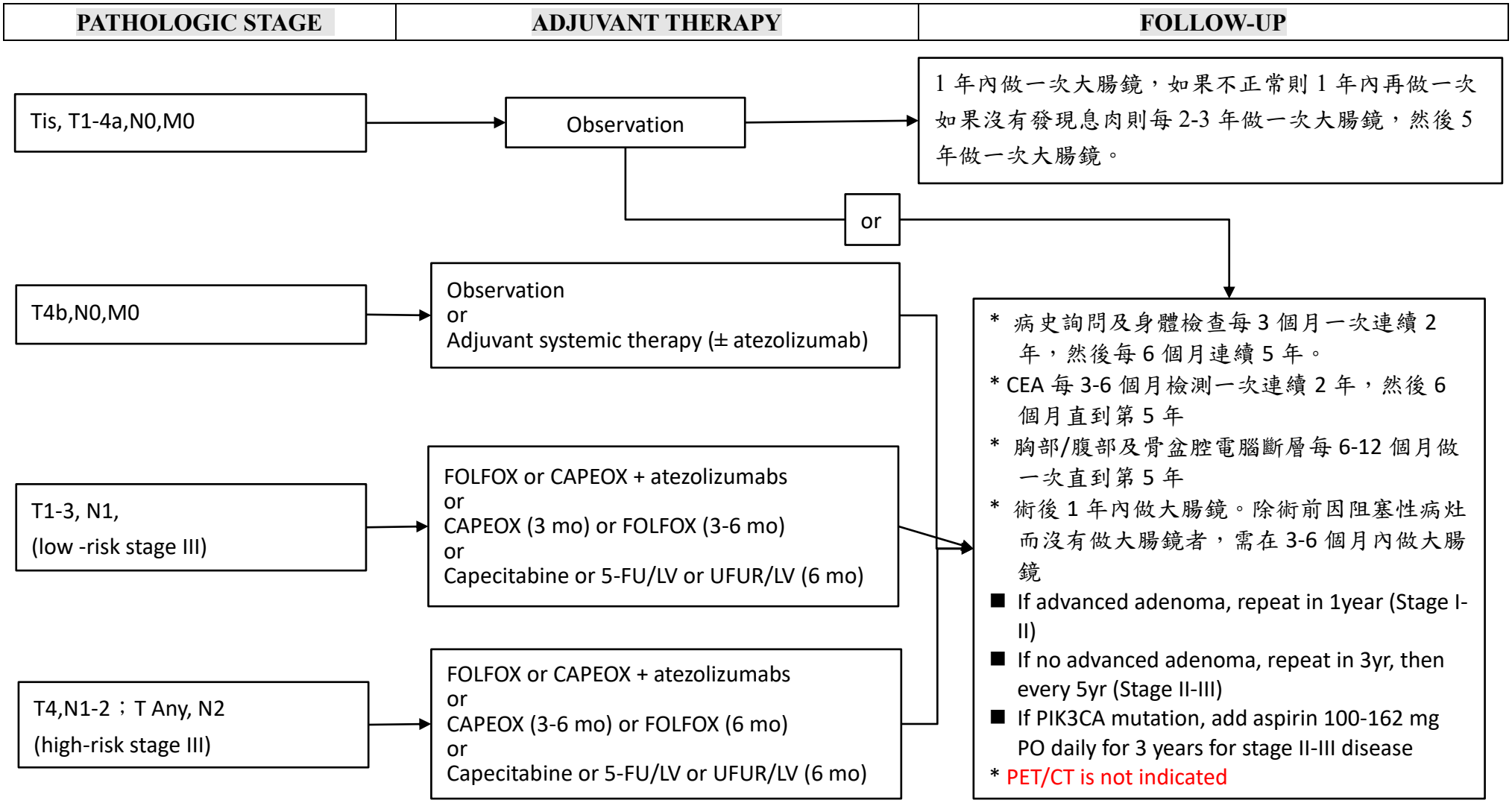
pMMR/MSS Colon Cancer



◎ **3 mo: 3 months； 6 mo: 6 months**

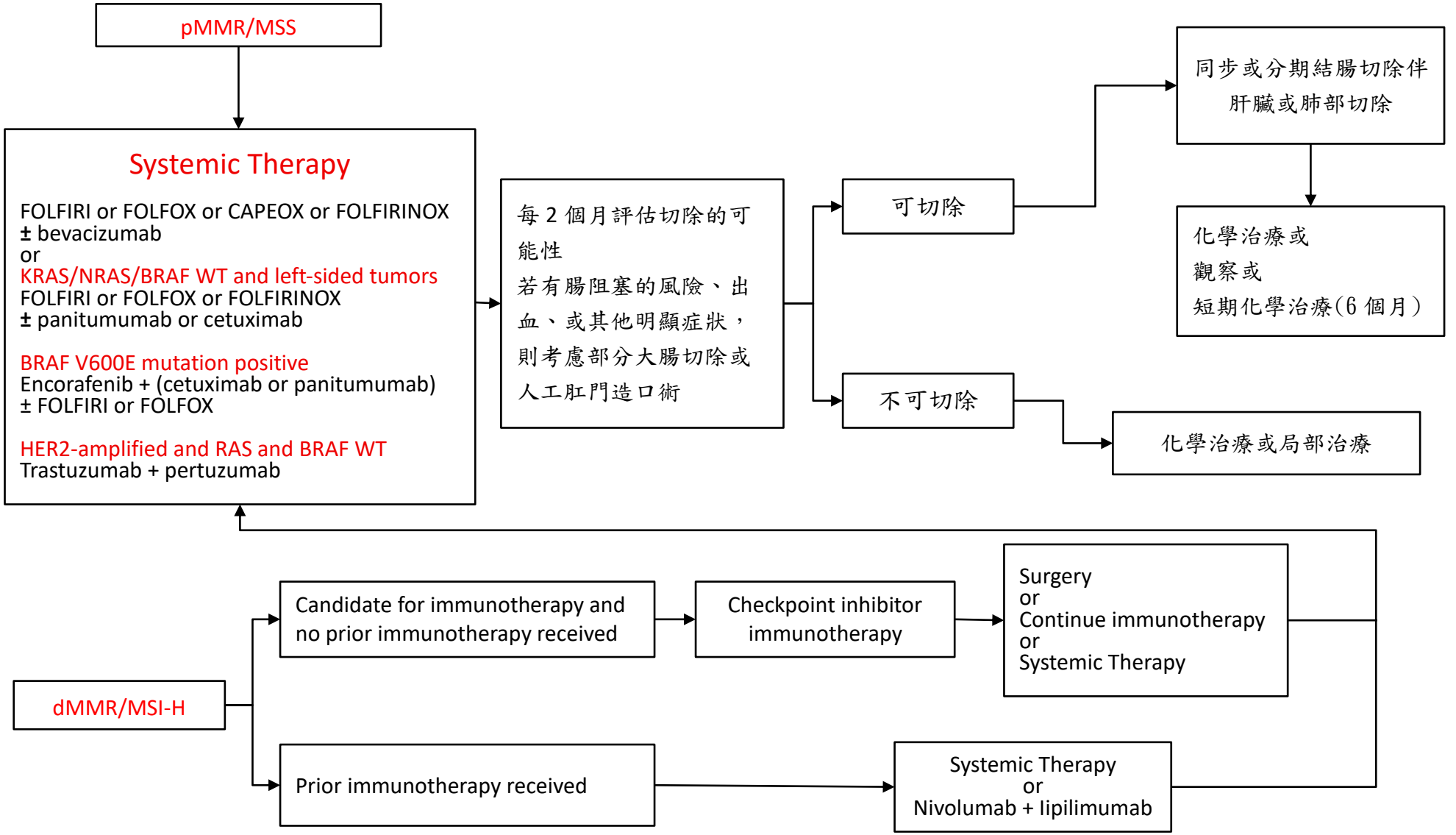
Post OP

dMMR/MSI-H or POLE/POLD1 mutation with ultra-hypermutated phenotype [eg, TMB>50 mut/Mb] Colon Cancer



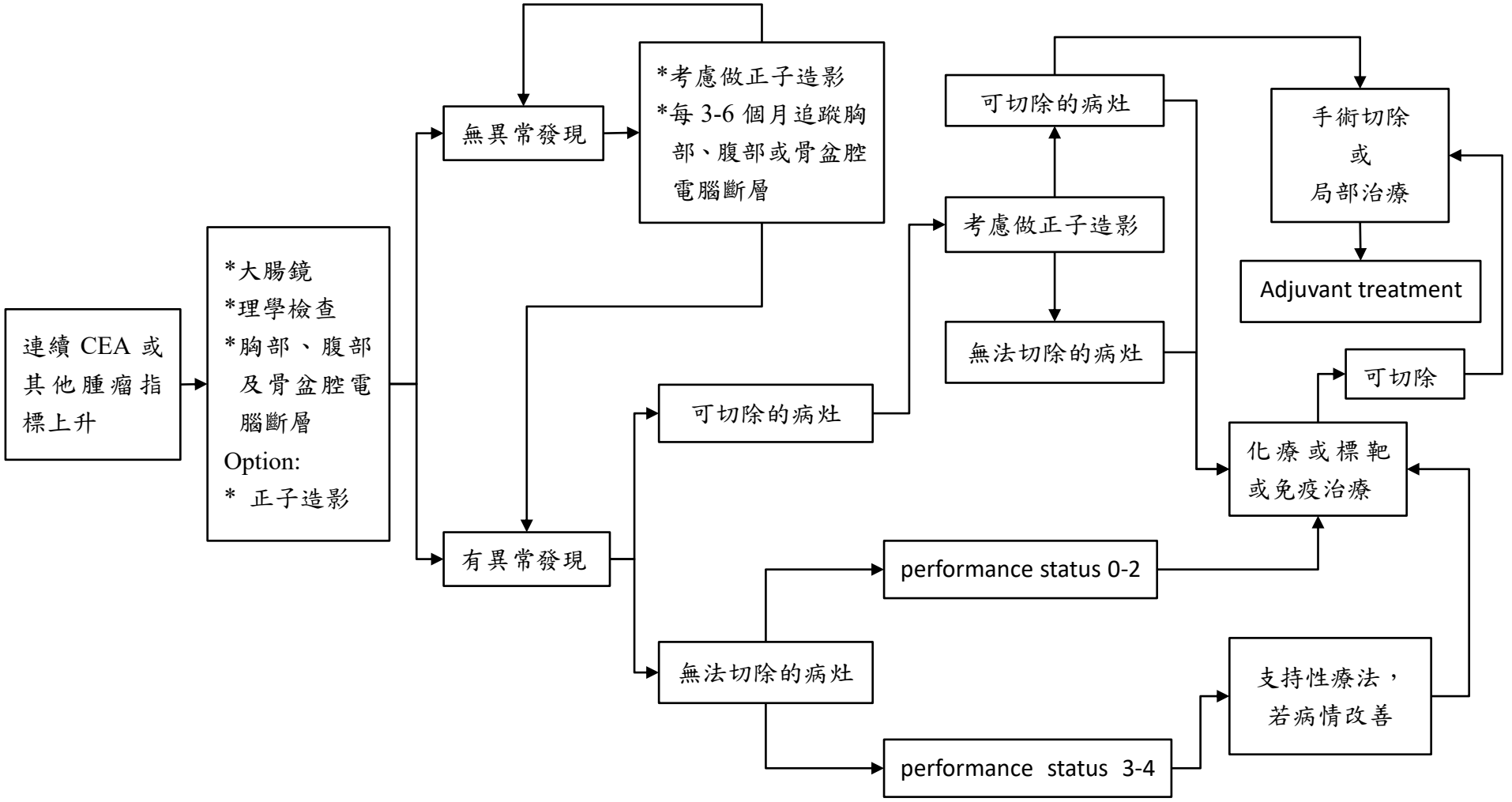
◎ **3 mo: 3 months； 6 mo: 6 months**

SYSTEMIC THERAPY and EVALUATION in Metastatic Disease



復發的評估

RECURRENCE	WORKUP



六、化學治療處方

Adjuvant chemotherapy

Uracil-Tegafur (UFUR)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Uracil-Tegafur	300-600 mg/m2*	PO in 2-3 divided doses	D1-28	Q4W x 12-24 cycles（依健保局給付規定）

1. Sulkes A, et al. Uracil-ftorafur: an oral fluoropyrimidine active in colorectal cancer. J Clin Oncol. Oct 1998;16(10):3461-3475.
2. Hochster HS et al. Phase II study of uracil-tegafur with leucovorin in elderly (> 75 years old) patients with colorectal cancer: ECOG 1299. J Clin Oncol 2007; 25:5397.
3. Hsu TC, et al. Uracil-Tegafur and Leucovorin is an Effective Alternative Adjuvant Chemotherapy for the Patients with Colorectal Cancer—Extend Period of Treatment Might Prolong Patient's Survival. J Gastro Hepato. 2024; V10(7): 1-6
4. Sadahiro, S. et al. Randomized phase III trial of treatment duration for oral uracil and tegafur plus leucovorin as adjuvant chemotherapy for patients with stage IIB/III colon cancer: final results of JFMC33-0502. Annals of Oncology, Volume 26, Issue 11, 2274 – 2280, 2015

Capecitabine

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1250 mg/m2/day bid po	po	D1-D14	Q3Ws x8 cycles

1. Twelves C, et al. Capecitabine as adjuvant treatment for stage III colon cancer. N Engl J Med 2005;352:2696-2704

mFOLFOX6

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2	IV	D1	Q2W x 12 cycles
5FU	400 mg/m²	IV Bolus		
5FU	2400 mg/m2	IV over 46-48 hrs	D1-2	
Leucovorin	400 mg/m2	IV	D1	

1. de Gramont A, et al. Oxaliplatin/5FU/LV in adjuvant colon cancer: updated efficacy results of the MOSAIC trial, including survival, with a medium follow-up of six years. 2007 ASCO annual meeting. Abstract 4007
2. Tournigand, C et al. FOLFIRI followed by FOLFOX6 or the reverse sequence in advanced colorectal cancer: A randomized GERCOR study. J Clin Oncol 2004; 22:229

mFOLFOX6 (no bolus)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2	IV	D1	Q2W x 12 cycles
5-FU	2400 -2600 mg/m2	IV over 46-48 hrs		
Leucovorin	400 mg/m2	IV		

1. Areepium N, et al. The Impact of Omitting 5-FU Bolus From mFOLFOX6 Chemotherapy Regimen on Hematological Adverse Events Among Patients With Metastatic Colorectal Cancer, World J Oncol. 2023;14(5):392-400
2. Peng C, et al. Omission of 5-Fluorouracil Bolus From Multidrug Regimens for Advanced Gastrointestinal Cancers: A Multicenter Cohort Study, Journal of the National Comprehensive Cancer Network (JNCCN), Vol. 22, Issue 8, Oct 2024

CAPEOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1000 mg/m2(NCCN), 825mg/m2(FDA)	PO bid	D1-14	Q3W x 8 cycles
Oxaliplatin	130 mg/m2	IV	D1	

Schmoll HJ et al. Phase III trial of capecitabine plus oxaliplatin as adjuvant therapy for stage III colon cancer: a planned safety analysis in 1,864 patients. J Clin Oncol. 2007 Jan 1;25(1):102-9

Neoadjuvant Chemotherapy for Locally Advanced Disease

mFOLFOX6

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2	IV	D1	Q2W x 6 cycles
Leucovorin	400 mg/m2	IV		
5FU	400 mg/m²	IV Bolus		
5FU	2400 mg/m2	IV over 46-48 hrs	D1-2	

mFOLFOX6 (no bolus)[3]

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2 IV	IV	D1	Q2W x 6 cycles
Leucovorin	400 mg/m2	IV		
5-FU	2400 -2600 mg/m2 IV over 46 hrs	IV over 46-48 hrs		

1. Morton D,et al. FOxTROT Collaborative Group. Preoperative Chemotherapy for Operable Colon Cancer: Mature Results of an International Randomized Controlled Trial. J Clin Oncol. 2023 Mar 10;41(8):1541-1552.
2. van den Berg K, et al. Neoadjuvant chemotherapy in locally advanced colon cancer: A systematic review with proportional meta-analysis. Eur J Surg Oncol. 2025 Mar;51(3):109560.
3. Peng C, et al. Omission of 5-Fluorouracil Bolus From Multidrug Regimens for Advanced Gastrointestinal Cancers: A Multicenter Cohort Study, Journal of the National Comprehensive Cancer Network (JNCCN), Vol. 22, Issue 8, Oct 2024

CAPEOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1000 mg/m2(NCCN), 825mg/m2(FDA)	PO bid	D1-14	Q3W x4 cycles
Oxaliplatin	130 mg/m2	IV	d1	

1. Andre T, Boni C et al. Oxaliplatin, fluorouracil, and leucovorin as adjuvant treatment for colon cancer. N Engl J Med 2004;350:2343-2351.
2. Cheeseman SL et al. A 'modified de Gramont' regimen of fluorouracil, alone and with oxaliplatin, for advanced colorectal cancer. Br J Cancer 2002;87:393-399
3. Liu F et al. CapeOX perioperative chemotherapy versus postoperative chemotherapy for locally advanced resectable colon cancer: protocol for a two-period randomised controlled phase III trial BMJ Open 2019;9:e017637

Systemic Chemotherapy for Advanced or Metastatic Disease

1st line

FOLFIRI[1,2]

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Irinotecan	180 mg/m2 IV	IV	D1	Q2W
Leucovorin	400 mg/m2	IV		
5-FU	Bolus 400 mg/m²	IV Bolus		
5-FU	2400 mg/m2 IV over 46-48 hrs	IV over 46-48 hrs	D1-2	

FOLFIRI (no bolus)[3]

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Irinotecan	180 mg/m2 IV	IV	D1	Q2W
Leucovorin	400 mg/m2	IV		
5-FU	2400-2600 mg/m2 IV over 46-48 hrs	IV over 46-48 hrs	D1-2	

1. Andre T, et al. CPT-11 (irinotecan) addition to bimonthly, high-dose leucovorin and bolus and continuous-infusion 5-fluorouracil (FOLFIRI) for pretreated metastatic colorectal cancer. Eur J Cancer 1999;35:1343-1347.
2. Fuchs CS, et al. Randomized, controlled trial of irinotecan plus infusional, bolus, or oral fluoropyrimidines in first-line treatment of metastatic colorectal cancer: results from the BICC-C Study. J Clin Oncol 2007;25:4779-4786.
3. Peng C, et al. Omission of 5-Fluorouracil Bolus From Multidrug Regimens for Advanced Gastrointestinal Cancers: A Multicenter Cohort Study, Journal of the National Comprehensive Cancer Network (JNCCN), Vol. 22, Issue 8, Oct 2024

mFOLFOX6[1,2]

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2	IV	D1	Q2W
Leucovorin	400 mg/m2	IV		
5FU	400 mg/m²	IV Bolus		
5FU	2400 mg/m2	IV over 46-48 hrs	D1-2	

mFOLFOX6 (no bolus)[3]

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2 IV	IV	D1	Q2W
Leucovorin	400 mg/m2 IV over	IV		
5-FU	2400 -2600 mg/m2 IV over 46 hrs	IV over 46-48 hrs		

1. deGramont A, Figer A, Seymour M, et al. Leucovorin and Fluorouracil With or Without Oxaliplatin as First-Line Treatment in Advanced Colorectal Cancer. J Clon Oncol 2000;18:2938-2947
2. Fuchs CS et al. Randomized, controlled trial of irinotecan plus infusional, bolus, or oral fluoropymidines in first-line treatment of metastatic colorectal cancer: results from the BICC-C study. J Clin Oncol 2007; 25:4779.
3. Peng C, et al. Omission of 5-Fluorouracil Bolus From Multidrug Regimens for Advanced Gastrointestinal Cancers: A Multicenter Cohort Study, Journal of the National Comprehensive Cancer Network (JNCCN), Vol. 22, Issue 8, Oct 2024

CAPEOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1000 mg/m2(NCCN), 825mg/m2(FDA)	PO bid	D1-14	Q3W
Oxaliplatin	130 mg/m2	IV	D1	

Saltz LB, et al. Bevacizumab in combination with oxaliplatin- based chemotherapy as first-line therapy in metastatic colorectal cancer: a randomized phase III study. J Clin Oncol 2008;26:2013-2019.

Modified FOLFIRINOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m2	IV	D1	Q2W
Irinotecan	150 mg/m2	IV 30-90min	D1	
5-FU	2400 mg/m2	IV for 46-48 hrs	D1-2	
Leucovorin	400 mg/m2	IV	D1	

1. Cremolini C, et al. FOLFOXIRI plus bevacizumab versus FOLFIRI plus bevacizumab as first-line treatment of patients with metastatic colorectal cancer: updated overall survival and molecular subgroup analyses of the open-label, phase 3 TRIBE study. Lancet Oncol. 2015 Oct;16(13):1306-15.
2. Conroy T, et al. Neoadjuvant chemotherapy with FOLFIRINOX and preoperative chemoradiotherapy for patients with locally advanced rectal cancer (UNICANCER-PRODIGE 23): a multicentre, randomised, open-label, phase 3 trial. Lancet Oncol 2021;22:702-715
3. Bennouna J, et al. Rationale and design of the IROCAS study: multicenter, international, randomized phase 3 trial comparing adjuvant modified (m) FOLFIRINOX to mFOLFOX6 in patients with high-risk stage III (pT4 and/or N2) colon cancer-A UNICANCER GI-PRODIGE Trial. Clin Colorectal Cancer 2019;18:e69-e73.

FOLFIRI + bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Bevacizumab	5 mg/kg	IV	D1	Q2W
FOLFIRI				

Heinemann V, et al. FOLFIRI plus bevacizumab as first-line treatment for patients with metastatic colorectal cancer (FIRE-3): a randomized, open-label, phase 3 trial. Lancet Oncol 2014;15:1065-1075.

FOLFOX + bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Bevacizumab	5 mg/kg	IV	D1	Q2W
FOLFOX				

Emmanouilides C, et al. Front-line bevacizumab in combination with oxaliplatin, leucovorin and 5-fluorouracil (FOLFOX) in patients withmetastatic colorectal cancer: a multicenter phase II study. BMC Cancer 2007;7:91.

CAPEOX + bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Bevacizumab	7.5 mg/kg	IV	D1	Q3W
CAPEOX				Q3W

Saltz LB, et al. Bevacizumab in combination with oxaliplatin- based chemotherapy as first-line therapy in metastatic colorectal cancer: a randomized phase III study. J Clin Oncol 2008;26:2013-2019.

FOLFIRINOX + bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Bevacizumab	5 mg/kg	IV	D1	Q2W
FOLFIRINOX				

Cremolini C, et al. FOLFOXIRI plus bevacizumab versus FOLFIRI plus bevacizumab as first-line treatment of patients with metastatic colorectal cancer: updated overall survival and molecular subgroup analyses of the open-label, phase 3 TRIBE study. Lancet Oncol 2015;16:1306- 1315.

FOLFIRI + cetuximab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2hrs	D1	Q2W
FOLFIRI				

Cunningham D, et al. Cetuximab monotherapy and cetuximab plus irinotecan in irinotecan-refractory metastatic colorectal cancer. N Engl J Med 2004;351:337-345.

FOLFOX + cetuximab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2hrs	D1	Q2W
FOLFOX				

Venook AP, et al. Effect of first-line chemotherapy combined with cetuximab or bevacizumab on overall survival in patients with KRAS wild- type advanced or metastatic colorectal cancer: A randomized clinical trial. JAMA 2017;317:2392-2401.

CAPEOX + cetuximab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2hrs	D1	Q2W
CAPEOX				Q3W

1. Iwamoto S, et al. Efficacy of CapeOX plus cetuximab treatment as a first-line therapy for patients with extended RAS/BRAF/PIK3CA wild-type advanced or metastatic colorectal cancer. J Cancer 2018;9:4092-4098
2. Bridgewater JA, et al. Systemic chemotherapy with or without cetuximab in patients with resectable colorectal liver metastasis (New EPOC): long-term results of a multicentre, randomised, controlled, phase 3 trial. Lancet Oncol 2020;21:398-411.

FOLFIRI + panitumumab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Panitumumab	6 mg/kg	IV over 60 min	D1	Q2W
FOLFIRI				

Peeters M, et al. Randomized phase III study of panitumumab with fluorouracil, leucovorin, and irinotecan (FOLFIRI) compared with FOLFIRI alone as second-line treatment in patients with metastatic colorectal cancer. J Clin Oncol 2010;28:4706-4713.

FOLFOX + panitumumab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Panitumumab	6 mg/kg	IV over 60 min	D1	Q2W
FOLFOX				

Douillard JY, et al. Randomized, phase III trial of panitumumab with infusional fluorouracil, leucovorin, and oxaliplatin (FOLFOX4) versus FOLFOX4 alone as first-line treatment in patients with previously untreated metastatic colorectal cancer: the PRIME study. J Clin Oncol 2010;28:4697-4705.

CAPEOX + panitumumab (*KRAS/NRAS/BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Panitumumab	6 mg/kg	IV over 60 min	D1	Q2W
CAPEOX				Q3W

1. Iwamoto S, et al. Efficacy of CapeOX plus cetuximab treatment as a first-line therapy for patients with extended RAS/BRAF/PIK3CA wild-type advanced or metastatic colorectal cancer. J Cancer 2018;9:4092-4098
2. Bridgewater JA, et al. Systemic chemotherapy with or without cetuximab in patients with resectable colorectal liver metastasis (New EPOC): long-term results of a multicentre, randomised, controlled, phase 3 trial. Lancet Oncol 2020;21:398-411.

Encorafenib + cetuximab or panitumumab ± FOLFIRI or FOLFOX (*BRAF V600E mutation positive*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Encorafenib	300mg	PO	D1	Q2W
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2 hrs	D1	Q2W
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	
FOLFIRI or FOLFOX[2,3]			D1	Q2W

1. Van Cutsem E, et al. Binimetinib, encorafenib, and cetuximab triplet therapy for patients with BRAF V600E-mutant metastatic colorectal cancer: Safety lead-in results from the phase III BEACON Colorectal Cancer Study. J Clin Oncol 2019;37:1460- 1469.
2. Kopetz S, et al. Encorafenib, Binimetinib, and Cetuximab in BRAF V600E-Mutated Colorectal Cancer. N Engl J Med. 2019;381:1632-1643.
3. Kopetz S, et al. Quality of life with encorafenib plus cetuximab with or without binimetinib treatment in patients with BRAF V600E-mutant metastatic colorectal cancer: patient-reported outcomes from BEACON CRC. ESMO Open 2022;7:100477.
4. Tabernero, J. et al. Encorafenib + cetuximab (EC) + FOLFIRI for BRAF V600E-mutant metastatic colorectal cancer (mCRC): Updated results from the BREAKWATER safety lead-in (SLI). Annals of Oncology, Volume 35, S435 - S436
5. Kopetz S, et al. Encorafenib, cetuximab and chemotherapy in BRAF-mutant colorectal cancer: a randomized phase 3 trial. Nat Med 2025.

2nd line

Capecitabine

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1250 mg/m2	PO bid	D1-14	Q3W

Van Cutsem, E et al. Oral capecitabine compared with intravenous fluorouracil plus leucovorin in patients with metastatic colorectal cancer: Results of a large phase III study. J Clin Oncol 2001; 19:4097.

Capecitabine + bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1250 mg/m2	PO bid	D1-14	Q3W
Bevacizumab	7.5 mg/kg	IV	D1	

Cunningham D, et al. Bevacizumab plus capecitabine versus capecitabine alone in elderly patients with previously untreated metastatic colorectal cancer (AVEX): an open-label, randomised phase 3 trial. Lancet Oncol 2013;14:1077-1085.

Irinotecan

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Irinotecan	180 mg/m2	IV over 30-90min	D1	Q2W

Cunningham D, et al. Randomised trial of irinotecan plus supportive care versus supportive care alone after fluorouracil failure for patients with metastatic colorectal cancer. The Lancet 1998;352:1413-1418.

Irinotecan+ bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Irinotecan	180 mg/m2	IV over 30-90min	D1	Q2W
Bevacizumab	5 mg/kg	IV		

Yildiz R, et al. Bevacizumab plusirinotecan-based therapy in metastatic colorectal cancer patients previously treated with oxaliplatin-based regimens. Cancer Invest 2010;28:33-37.

Irinotecan+ cetuximab or panitumumab (*KRAS/NRAS/BRAF WT only*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Irinotecan	180 mg/m2 IV	IV	D1	Q2W
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2 hrs	D1	Q2W
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	

1. Martín-Martorell P, et al. Biweekly cetuximab and irinotecan in advanced colorectal cancer patients progressing after at least one previous line of chemotherapy: results of a phase II single institution trial. Br J Cancer 2008;99:455-458.
2. Peeters M, et al. Randomized phase III study of panitumumab with fluorouracil, leucovorin, and irinotecan (FOLFIRI) compared with FOLFIRI alone as second-line treatment in patients with metastatic colorectal cancer. J Clin Oncol 2010;28:4706-4713.
3. Andre T, et al. Panitumumab combined with irinotecan for patients with KRAS wild-type metastatic colorectal cancer refractory to standard chemotherapy: a GERCOR efficacy, tolerance, and translational molecular study. Ann Oncol 2013;24:412-419.

FOLFIRI+ ramucirumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Ramucirumab	8 mg/kg	IV over 60 min	D1	Q2W
FOLFIRI				

Tabernero J, et al. Ramucirumab versus placebo in combination with second-line FOLFIRI in patients with metastatic colorectal carcinoma that progressed during or after first-line therapy with bevacizumab, oxaliplatin, and a fluoropyrimidine (RAISE): a randomized, double-blind, multicentre, phase 3 study. Lancet Oncol 2015;16:499-508.

Irinotecan+ ramucirumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Irinotecan	180 mg/m2	IV	D1	Q2W
Ramucirumab	8 mg/kg	IV over 60 min		

Tabernero J, et al. Ramucirumab versus placebo in combination with second-line FOLFIRI in patients with metastatic colorectal carcinoma that progressed during or after first-line therapy with bevacizumab, oxaliplatin, and a fluoropyrimidine (RAISE): a randomized, double-blind, multicentre, phase 3 study. Lancet Oncol 2015;16:499-508.

Cetuximab (*KRAS/NRAS/BRAF WT only*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Cetuximab	500mg/m2	IV over 2 hrs	D1	Q2W

Martín-Martorell P, et al. Biweekly cetuximab and irinotecan in advanced colorectal cancer patients progressing after at least one previous line of chemotherapy: results of a phase II single institution trial. Br J Cancer 2008;99:455-458.

Panitumumab (*KRAS/NRAS/BRAF WT only*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Panitumumab	6 mg/kg	IV over 60min	D1	Q2W

Van Cutsem E, et al. Open-label phase III trial of panitumumab plus best supportive care compared with best supportive care alone in patients with chemotherapy-refractory metastatic colorectal cancer. J Clin Oncol 2007;25:1658-1664.

Regorafenib ± FOLFIRI or FOLFOX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Regorafenib[1]	160 mg	PO daily	D1-21	Q4W
FOLFIRI or FOLFOX[2,3]				Q2W

1. Grothey A, et al. Regorafenib monotherapy for previously treated metastatic colorectal cancer (CORRECT): an international, multicentre, randomised, placebo-controlled, phase 3 trial. Lancet 2013;381:303- 312.
2. Schultheis B, et al. Regorafenib in combination with FOLFOX or FOLFIRI as first- or second-line treatment of colorectal cancer: results of a multicenter, phase Ib study. Ann Oncol. 2013 Jun;24(6)
3. Sanoff HK, et al. Multicenter, randomized, double-blind phase 2 trial of FOLFIRI with regorafenib or placebo as second-line therapy for metastatic colorectal cancer. Cancer. 2018 Aug 1;124(15):3118-3126.

Encorafenib + cetuximab or panitumumab ± FOLFIRI or FOLFOX (*BRAF V600E mutation positive*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Encorafenib	300mg	PO	D1	Q2W
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2 hrs	D1	Q2W
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	
FOLFIRI or FOLFOX[2,3]			D1	Q2W

6. Van Cutsem E, et al. Binimetinib, encorafenib, and cetuximab triplet therapy for patients with BRAF V600E-mutant metastatic colorectal cancer: Safety lead-in results from the phase III BEACON Colorectal Cancer Study. J Clin Oncol 2019;37:1460- 1469.
7. Kopetz S, et al. Encorafenib, Binimetinib, and Cetuximab in BRAF V600E-Mutated Colorectal Cancer. N Engl J Med. 2019;381:1632-1643.
8. Kopetz S, et al. Quality of life with encorafenib plus cetuximab with or without binimetinib treatment in patients with BRAF V600E-mutant metastatic colorectal cancer: patient-reported outcomes from BEACON CRC. ESMO Open 2022;7:100477.
9. Tabernero, J. et al. Encorafenib + cetuximab (EC) + FOLFIRI for BRAF V600E-mutant metastatic colorectal cancer (mCRC): Updated results from the BREAKWATER safety lead-in (SLI). Annals of Oncology, Volume 35, S435 - S436
10. Kopetz S, et al. Encorafenib, cetuximab and chemotherapy in BRAF-mutant colorectal cancer: a randomized phase 3 trial. Nat Med 2025.

Sotorasib + cetuximab or panitumumab ± FOLFIRI or FOLFOX (*KRAS G12C mutation positive*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Sotorasib	960 mg PO	PO	D1	Q2W
Cetuximab	First dose: 400 mg/m2 Subsequent doses: 500 mg/m2	IV over 2 hrs	D1	Q2W
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	
+/- FOLFIRI[2] or FOLFOX			D1	Q2W

1. Kuboki Y, et al. Sotorasib in combination with panitumumab in refractory KRAS G12C-mutated colorectal cancer: Safety and efficacy for phase Ib full expansion cohort. Ann Oncol 2022;33:S136-S196.
2. David S. Hong et al. Sotorasib (Soto) plus panitumumab (Pmab) and FOLFIRI for previously treated KRAS G12C-mutated metastatic colorectal cancer (mCRC): CodeBreaK 101 phase 1b safety and efficacy.. J Clin Oncol 41, 3513-3513(2023).

Fruquintinib

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Fruquintinib	5 mg	PO	D1~21	Q4W

1. Dasari A , et al. Fruquintinib versus placebo in patients with refractory metastatic colorectal cancer (FRESCO-2): an international, multicentre, randomised, double-blind, phase 3 study. Lancet 2023;402:41-53.
2. Li J, Qin S, et al. Effect of Fruquintinib vs Placebo on Overall Survival in Patients With Previously Treated Metastatic Colorectal Cancer: The FRESCO Randomized Clinical Trial. JAMA 2018;319:2486-2496.

Trifluridine + tipiracil (Lonsurf, TAS-102) ± bevacizumab

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Trifluridine + tipiracil	35 mg/m2 -80mg/m2 po twice daily	PO bid	D1-5 D8-12	Q4W
Bevacizumab	5 mg/kg	IV	D1	Q2W

1. Mayer RJ, et al. Randomized Trial of TAS-102 for Refractory Metastatic Colorectal Cancer (RECOURSE). N Engl J Med 2015;372:1909-19.
2. Rais T, et al. Innovations in colorectal cancer treatment: trifluridine and tipiracil with bevacizumab for improved outcomes - a review. Front Oncol. 2024 Jul 12;14:1296765

Trastuzumab + pertuzumab (*HER2-amplified and RAS and BRAF WT*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Trastuzumab	First dose: 8 mg/kg Subsequent doses: 6 mg/kg	IV	D1	Q3W
Pertuzumab	First dose: 840 mg Subsequent doses: 420 mg			

Meric-Bernstam F, et al. Pertuzumab plus trastuzumab for HER2-amplified metastatic colorectal cancer (MyPathway): an updated report from a multicentre, open-label, phase 2a, multiple basket study. Lancet Oncol 2019;20:518-530.

Trastuzumab+ lapatinib (*HER2-amplified and RAS* WT)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Trastuzumab	First dose: 8 mg/kg Subsequent doses: 6 mg/kg	IV	D1	Q3W
Lapatinib	1000mg	PO	Daily	

Sartore-Bianchi A, et al. Dual-targeted therapy with trastuzumab and lapatinib in treatment-refractory, KRAS codon 12/13 wild-type, HER2-positive metastatic colorectal cancer (HERACLES): a proof-of-concept, multicentre, open-label, phase 2 trial. Lancet Oncol 2016;17:738-746.

Maintenance Chemotherapy

Uracil-Tegafur (UFUR)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Uracil-Tegafur	300-600 mg/m2*	PO in 2-3 divided doses	D1-28	Q4W

*依照 UFUR 仿單用法

Koizumi W, Boku N, Yamaguchi K, Miyata Y, Sawaki A, Kato T, Toh Y, Hyodo I, Nishina T, Furuhata T, Miyashita K, Okada Y. Phase II study of S-1 plus leucovorin in patients with metastatic colorectal cancer. Ann Oncol. 2010 Apr;21(4):766-771

Capecitabine

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	500-625 mg/m2 or 1000-1500mg	PO bid	D1-28	Q4W

1. Romiti A, Onesti CE, Roberto M, Barucca V, Tomao S, D'Antonio C, Durante V, Milano A, Falcone R, Di Rocco R, Righini R, Marchetti P. Continuous, low-dose capecitabine for patients with recurrent colorectal cancer. Med Oncol. 2015 Mar;32(3):54
2. He Y, Liu P, Zhang Y, Deng X, Meng W, Wei M, Yang T, Wang Z, Qiu M. Low-dose capecitabine adjuvant chemotherapy in elderly stage II/III colorectal cancer patients (LC-ACEC): study protocol for a randomized controlled trial. Trials. 2015 May 29;16:238
3. Shi M, Ma T, Xi W, Jiang J, Wu J, Zhou C, Yang C, Zhu Z, Zhang J. A study of capecitabine metronomic chemotherapy is non-inferior to conventional chemotherapy as maintenance strategy in responders after induction therapy in metastatic colorectal cancer. Trials. 2020 Mar 6;21(1):249.
4. Wu J, Dong Y, Zhu W, Meng J, Zhang H, Fang C, Lin L. Capecitabine metronomic chemotherapy for metastatic colorectal cancer patients reaching NED: A protocol for a prospective, randomized, controlled trial. PLoS One. 2025 Apr 21;20(4)

Immunotherapy

Pembrolizumab (*dMMR/MSI-H or POLE/POLD1 mutation with ultra-hypermutated phenotype [eg, TMB>50 mut/Mb]*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Pembrolizumab	2 mg/kg	IV	D1	Q3W
	200 mg			Q3W
	400 mg			Q6W

Le DT, et al. PD-1 blockade in tumors with mismatch-repair deficiency. N Engl J Med 2015;372:2509-2520.

Nivolumab (*dMMR/MSI-H or POLE/POLD1 mutation with ultra-hypermutated phenotype [eg, TMB>50 mut/Mb]*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Nivolumab	3 mg/kg IV	IV	D1	Q2W
	240 mg			Q2W
	480 mg			Q4W

Overman MJ, et al. Nivolumab in patients with metastatic DNA mismatch repair deficient/microsatellite instability-high colorectal cancer (CheckMate 142): results of an open-label, multicentre, phase 2 study. Lancet Oncol 2017;18:1182-1191.

Nivolumab + Iipilimumab (*dMMR/MSI-H or POLE/POLD1 mutation with ultra-hypermutated phenotype [eg, TMB>50 mut/Mb]*)

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Nivolumab	3 mg/kg	IV	D1	Q3W x4
Ipilimumab	1 mg/kg			
Followed by				
Nivolumab	3 mg/kg IV	IV	D1	Q2W
	240 mg			Q2W
	480 mg			Q4W

Overman MJ, et al. Durable clinical benefit with nivolumab plus ipilimumab in DNA mismatch repair–deficient/microsatellite instability–high metastatic colorectal cancer. J Clin Oncol 2018;36:773-779.

七、早期緩和照護原則

若病人疾病分期為第四期，醫療團隊預估病人生命存活期約大於 6 個月，若病人拒絕治療、第二線化療及標靶藥物治療無效或經主治醫師及醫療團隊評估當病人身體狀況不適用常規治療方式，上述三項條件則一符合時，緩和醫療與安寧療護轉介機制便會啟動（鄭等，2018）。

八、安寧緩和照護原則

若預期疾病難以治癒時，病人存活期小於 6 個月便適合安寧療護(Pomeranz & Brustman, 2005；Waldrop & Rinfrette, 2009）。若藉由症狀、檢驗數據、及確切的腫瘤診斷，證實臨床上該惡性腫瘤已經廣泛侵犯、或進展快速；功能分數（Palliative Performance Scale）低於 70%；拒絕進一步腫瘤治癒性治療，或者在治療之下仍持續惡化者，即可轉介緩和醫療團隊（彭等，2006）

九、實症醫學

Categories of Evidence and Consensus :

Category 1: There is uniform NCCN consensus, based on high-level evidence, that the recommendation is appropriate.

Category 2A: There is uniform NCCN consensus, based on lower- level evidence including clinical experience, that the recommendationis appropriate.

Category 2B: There is nonuniform NCCN consensus (but no major disagreement), based on lower-level evidence including clinical experience, that the recommendation is appropriate.

Category 3: There is major NCCN disagreement that the recommendation is appropriate.

All recommendations are category 2A unless otherwise noted.

NCCN 對證據和共識的分類

1 類：基於高水準證據（如隨機對照試驗）提出的建議，專家組一致同意。

2A 類：基於低水準證據提出的建議，專家組一致同意。

2B 類：基於低水準證據提出的建議，專家組基本同意，無明顯分歧。

3 類：基於任何水準證據提出的建議，專家組意見存在明顯的分歧。除非特別指出， NCCN 對所有建議均達成 2A 類共識。

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十一、大腸直腸癌完治率定義

癌 別	期 別	定 義	備 註
大腸直腸癌	0 期、I 期	手術後就算完治	手術包含: 根治性手術、EMR 或息肉切除術 完治日=手術日
	II 期 (low risk)	手術後就算完治	手術包含: 根治性手術、EMR 或息肉切除術 完治日=手術日
	II 期 (High risk)	手術後開始進入化學治療算完治	High risk: MMR loss 、tumor >4cm、PN/LV(+)
	III 期	針劑化療治療滿 12 次算完治 口服化療服用滿 6 個月算完治*	*條件: 病患為 old age (>80 歲)或化療副作用大(經過團隊討論)改口服化療使用者。
	臨床期別 I-III 期，因各項因素(年紀、共病…)經團隊討論後，無接受手術僅口服化療(palliative treatment)，口服滿 3 個月或未滿 3 個月轉安寧算完治。		*114/3/25 團隊會議決議，須於病歷記載。
	IV 期	1. 確診為第 IV 期未接受腸癌治療直接轉安寧者 2. 針劑化療+標靶化療打完 3 個月算完治 3. 針劑化療+標靶化療未打完 3 個月轉安寧者	*條件:醫師評估後不建議積極治療(如手術或化療)者適用並有經過團隊討論