



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

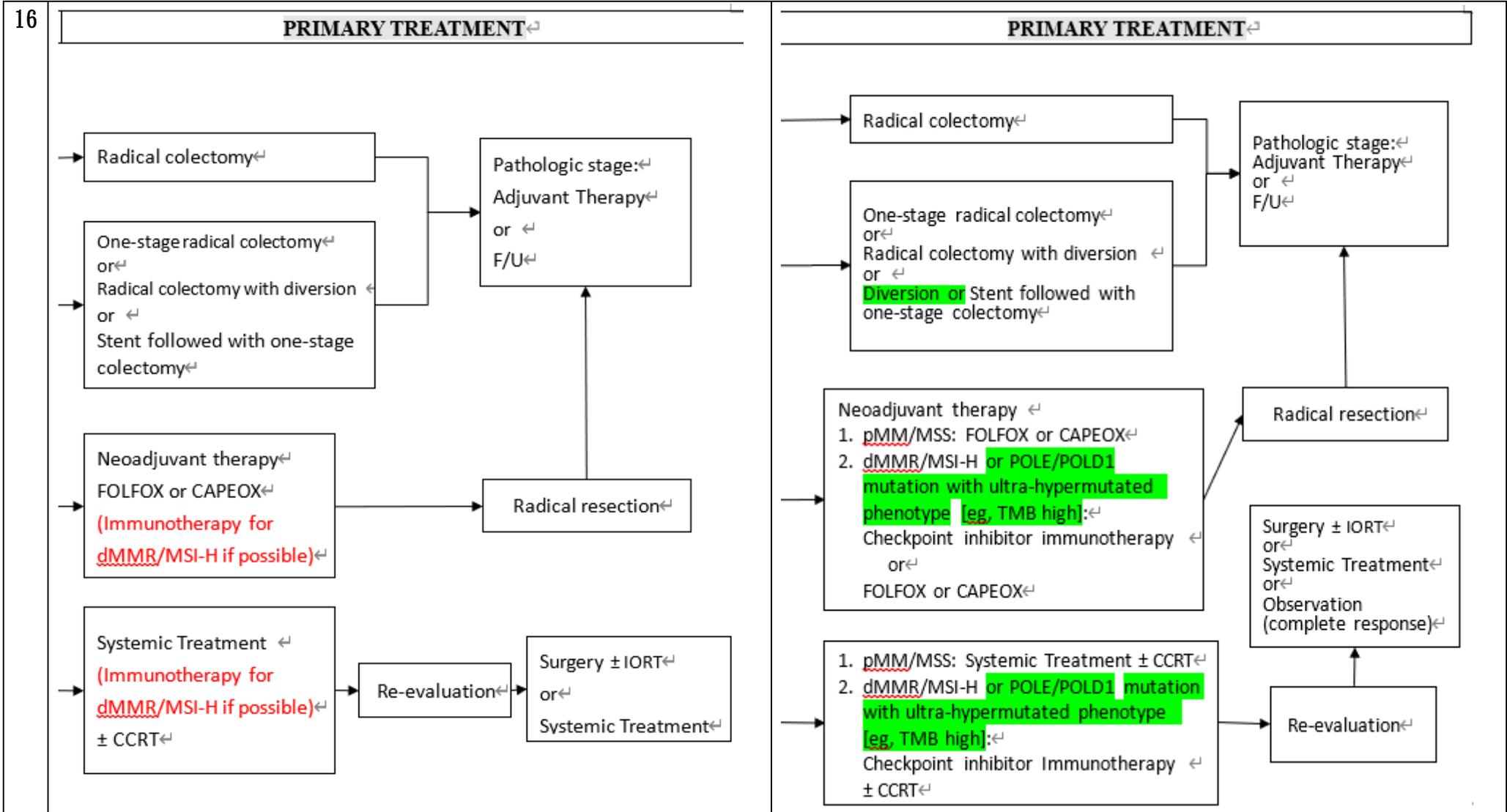
大腸直腸癌多專科團隊編修

2025/12/09 Version 19.0
2024/11/12 Version 18.0
2023/12/22 Version 17.0
2022/12/20 Version 16.0
2021/11/16 Version 15.0
2020/12/01 Version 14.0
2019/11/19 Version 13.0
2018/11/15 Version 12.0
2017/12/21 Version 11.0
2016/12/01 Version 10.0
2015/12/24 Version 9.0
2014/12/18 Version 8.0
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
詹光川	黃相忠	趙駿	呂錫濟	丁文謙

修訂內容

頁數	第18版	第19版
16	<p style="text-align: center;">WORKUP↵</p> <p>B1: 大腸癌(無遠端轉移)↵</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Colon Cancer Work Up↵</p> <p>↵</p> <p>Major Diagnosis ↵</p> <ul style="list-style-type: none"> ● Colonoscopy↵ ● Chest CT and abdominal CT ↵ ● Biopsy↵ ● Pathology review↵ ● Flexible Sigmoidoscopy + Double contrast Barium enema↵ <p>↵</p> <p>(Option)↵</p> <ul style="list-style-type: none"> ● KRAS/NRAS/BRAS testing↵ ● MMR/MSI test/HER-2↵ ● 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↵ </div>	<p style="text-align: center;">WORKUP↵</p> <p>B1: 大腸癌(無遠端轉移)↵</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Colon Cancer Work Up↵</p> <p>↵</p> <p>Major Diagnosis ↵</p> <ul style="list-style-type: none"> ● Colonoscopy↵ ● Tumor makers↵ ● Chest CT and abdominal CT ↵ ● Biopsy↵ ● Pathology review↵ ● Flexible Sigmoidoscopy + Double contrast Barium enema↵ <p>↵</p> <p>(Option)↵</p> <ul style="list-style-type: none"> ● 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↵ </div>



<p>17</p>	<p style="text-align: center;">WORKUP</p> <p>B2: 大腸癌 (有遠端轉移)</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>懷疑或證實有大腸腺癌轉移 (any T, any N, M1)</p> </div> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">Colon Cancer Work Up</p> <p>←</p> <p>Major Diagnosis ←</p> <ul style="list-style-type: none"> ● Colonoscopy ● Chest CT and abdominal CT ● Biopsy ● Pathology review ● Liver MRI ● Flexible Sigmoidoscopy + Double contrast Barium enema ● Kras/Nras/BRAF testing ● MMR/MSI test <p>←</p> <p>(Option) ←</p> <ul style="list-style-type: none"> ● HER2 testing ● NGS testing ● PET/CT scan before CCRT ● Multidisciplinary team evaluation ● Operative risk and anesthetic risk evaluation </div>	<p style="text-align: center;">WORKUP</p> <p>B2: 大腸癌 (有遠端轉移)</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>Suspected or proven metastases (any T, any N, M1)</p> </div> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">Colon Cancer Work Up</p> <p>←</p> <p>Major Diagnosis ←</p> <ul style="list-style-type: none"> ● Colonoscopy ● Tumor makers ● Chest CT and abdominal CT ● Biopsy ● Pathology review ● Flexible Sigmoidoscopy + Double contrast Barium enema ● RAS/BRAF testing ● MMR/MSI test <p>←</p> <p>(Option) ←</p> <ul style="list-style-type: none"> ● HER2 testing ● POLE/POLD1, RET and NTRK ● NGS testing ● Liver MRI (if liver metastases) ● PET scan before CCRT if potentially resectable ● Multidisciplinary team evaluation </div>
<p>18</p>	<p>B2a WORK UP Synchronous Liver/Lung Metastases dMMR/MMS-H</p>	<p>B2a WORK UP 新增 Synchronous Liver/Lung Metastases dMMR/MMS-H or POLE/POLD1 mutation with ultra-hypermutated phenotype [eg, TMB high]</p>

<p>18</p>		<p>B2a: 大腸癌 (有遠端轉移) 新增:</p> <p>PRIMARY TREATMENT</p> <p>Synchronous or staged colectomy with liver or lung resection or local therapy (ex RFA、SBRT) or Systemic therapy (for 2-3 mo) followed by synchronous or staged colectomy or local therapy (ex RFA、SBRT) or Colectomy, followed by chemotherapy (for 2-3 mo) followed by staged colectomy or local therapy (ex RFA、SBRT)</p> <p>Systemic therapy → Re-evaluation every 3 month →</p> <ul style="list-style-type: none"> Coverted to resectable Remains unresectable
<p>20 21</p>		<p>新增</p> <p>FOLLOW-UP</p> <ul style="list-style-type: none"> If PIK3CA mutation, add aspirin 100-162 mg PO daily for 3 years for stage II-III disease
<p>22</p>	<p>SYSTEMIC THERAPY and EVALUATION</p> <p>pMMR/MSS : FOLFIRI or FOLFOX or CAPEOX or FOLFIRINOX ± bevacizumab or FOLFIRI or FOLFOX or FOLFIRINOX ± panitumumab or cetuximab (KRAS/NRAS/BRAF WT and left-sided tumors only),</p> <p>Option : Encorafenib + (cetuximab or panitumumab) (BRAF V600E mutation positive) self-pay</p>	<p>SYSTEMIC THERAPY and EVALUATION in Metastatic Disease</p> <p>pMMR/MSS : Systemic Therapy</p> <p>FOLFIRI or FOLFOX or CAPEOX or FOLFIRINOX ± bevacizumab or KRAS/NRAS/BRAF WT and left-sided tumors FOLFIRI or FOLFOX or FOLFIRINOX ± panitumumab or cetuximab</p> <p>BRAF V600E mutation positive Encorafenib + (cetuximab or panitumumab) ± FOLFIRI or FOLFOX</p>

24						<p>Adjuvant chemotherapy : 新增 Capecitabine</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Capecitabine</td> <td>1250 mg/m²/day bid po</td> <td>po</td> <td>D1- D14</td> <td>Q3Ws x8 cycles</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Capecitabine	1250 mg/m ² /day bid po	po	D1- D14	Q3Ws x8 cycles																												
Regimen	Dosage	Route of administration	Times	Frequency/Duration																																								
Capecitabine	1250 mg/m ² /day bid po	po	D1- D14	Q3Ws x8 cycles																																								
24	<p>mFOLFOX6</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Oxaliplatin</td> <td>85 mg/m²</td> <td>IV</td> <td rowspan="2">D1</td> <td rowspan="4">Q2W x 12 cycles</td> </tr> <tr> <td>5FU</td> <td>200mg/m²</td> <td>IV Bolus</td> </tr> <tr> <td>5FU</td> <td>2400 mg/m²</td> <td>IV over 46-48 hrs</td> <td>D1-2</td> </tr> <tr> <td>Leucovorin</td> <td>400mg/m²</td> <td>IV</td> <td>D1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Oxaliplatin	85 mg/m ²	IV	D1	Q2W x 12 cycles	5FU	200mg/m ²	IV Bolus	5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2	Leucovorin	400mg/m ²	IV	D1	<p>Adjuvant chemotherapy : 修訂 mFOLFOX6</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Oxaliplatin</td> <td>85 mg/m²</td> <td>IV</td> <td rowspan="2">D1</td> <td rowspan="4">Q2W x 12 cycles</td> </tr> <tr> <td>5FU</td> <td>400 mg/m²</td> <td>IV Bolus</td> </tr> <tr> <td>5FU</td> <td>2400 mg/m²</td> <td>IV over 46-48 hrs</td> <td>D1-2</td> </tr> <tr> <td>Leucovorin</td> <td>400 mg/m²</td> <td>IV</td> <td>D1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Oxaliplatin	85 mg/m ²	IV	D1	Q2W x 12 cycles	5FU	400 mg/m ²	IV Bolus	5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2	Leucovorin	400 mg/m ²	IV	D1
Regimen	Dosage	Route of administration	Times	Frequency/Duration																																								
Oxaliplatin	85 mg/m ²	IV	D1	Q2W x 12 cycles																																								
5FU	200mg/m ²	IV Bolus																																										
5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2																																									
Leucovorin	400mg/m ²	IV	D1																																									
Regimen	Dosage	Route of administration	Times	Frequency/Duration																																								
Oxaliplatin	85 mg/m ²	IV	D1	Q2W x 12 cycles																																								
5FU	400 mg/m ²	IV Bolus																																										
5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2																																									
Leucovorin	400 mg/m ²	IV	D1																																									
25	<table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Capecitabine</td> <td>825mg/m²</td> <td>PO bid</td> <td>D1-14</td> <td rowspan="2">Q2W x 8 cycles</td> </tr> <tr> <td>Oxaliplatin</td> <td>50 mg/m²</td> <td>IV</td> <td>D1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Capecitabine	825mg/m ²	PO bid	D1-14	Q2W x 8 cycles	Oxaliplatin	50 mg/m ²	IV	D1	<p>Adjuvant chemotherapy : 修訂 CAPOEX</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Capecitabine</td> <td>1000 mg/m²</td> <td>PO bid</td> <td>D1-14</td> <td rowspan="2">Q3W x 8 cycles</td> </tr> <tr> <td>Oxaliplatin</td> <td>130 mg/m²</td> <td>IV</td> <td>D1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Capecitabine	1000 mg/m ²	PO bid	D1-14	Q3W x 8 cycles	Oxaliplatin	130 mg/m ²	IV	D1														
Regimen	Dosage	Route of administration	Times	Frequency/Duration																																								
Capecitabine	825mg/m ²	PO bid	D1-14	Q2W x 8 cycles																																								
Oxaliplatin	50 mg/m ²	IV	D1																																									
Regimen	Dosage	Route of administration	Times	Frequency/Duration																																								
Capecitabine	1000 mg/m ²	PO bid	D1-14	Q3W x 8 cycles																																								
Oxaliplatin	130 mg/m ²	IV	D1																																									

26		<p>Neoadjuvant Chemotherapy for Locally Advanced Disease : 新增 mFOLFOX6</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Oxaliplatin</td> <td>85 mg/m²</td> <td>IV</td> <td rowspan="3">D1</td> <td rowspan="5">Q2W x 6 cycles</td> </tr> <tr> <td>Leucovorin</td> <td>400mg/m²</td> <td>IV</td> </tr> <tr> <td>5FU</td> <td>400 mg/m²</td> <td>IV Bolus</td> </tr> <tr> <td>5FU</td> <td>2400 mg/m²</td> <td>IV over 46-48 hrs</td> <td>D1-2</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Oxaliplatin	85 mg/m ²	IV	D1	Q2W x 6 cycles	Leucovorin	400mg/m ²	IV	5FU	400 mg/m ²	IV Bolus	5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2
Regimen	Dosage	Route of administration	Times	Frequency/Duration																		
Oxaliplatin	85 mg/m ²	IV	D1	Q2W x 6 cycles																		
Leucovorin	400mg/m ²	IV																				
5FU	400 mg/m ²	IV Bolus																				
5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2																			
26		<p>Neoadjuvant Chemotherapy for Locally Advanced Disease : 新增 mFOLFOX6 (no bolus)³</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Oxaliplatin</td> <td>85mg/m²</td> <td>IV</td> <td rowspan="3">D1</td> <td rowspan="3">Q2W x 6 cycles</td> </tr> <tr> <td>Leucovorin</td> <td>400mg/m²</td> <td>IV</td> </tr> <tr> <td>5-FU</td> <td>2400-2600 mg/m² IV over 46 hrs</td> <td>IV over 46-48 hrs</td> </tr> </tbody> </table>	Regimen		Dosage	Route of administration	Times	Frequency/Duration	Oxaliplatin	85mg/m ²	IV	D1	Q2W x 6 cycles	Leucovorin	400mg/m ²	IV	5-FU	2400-2600 mg/m ² IV over 46 hrs	IV over 46-48 hrs			
Regimen	Dosage	Route of administration	Times	Frequency/Duration																		
Oxaliplatin	85mg/m ²	IV	D1	Q2W x 6 cycles																		
Leucovorin	400mg/m ²	IV																				
5-FU	2400-2600 mg/m ² IV over 46 hrs	IV over 46-48 hrs																				
26		<p>Neoadjuvant Chemotherapy for Locally Advanced Disease : 新增 CAPOEX</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Capecitabine</td> <td>1000 g/m²</td> <td>PO bid</td> <td>D1-14</td> <td rowspan="2">Q3W x4 cycles</td> </tr> <tr> <td>Oxaliplatin</td> <td>130mg/m²</td> <td>IV</td> <td>d1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Capecitabine	1000 g/m ²	PO bid	D1-14	Q3W x4 cycles	Oxaliplatin	130mg/m ²	IV	d1						
Regimen	Dosage	Route of administration	Times	Frequency/Duration																		
Capecitabine	1000 g/m ²	PO bid	D1-14	Q3W x4 cycles																		
Oxaliplatin	130mg/m ²	IV	d1																			

28		<p>Systemic Chemotherapy for Advanced or Metastatic Disease</p> <p>新增 CAPOEX</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Capecitabine</td> <td>1000mg/m2</td> <td>PO bid</td> <td>D1-14</td> <td rowspan="2">Q3W</td> </tr> <tr> <td>Oxaliplatin</td> <td>130 mg/m2</td> <td>IV</td> <td>D1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Capecitabine	1000mg/m2	PO bid	D1-14	Q3W	Oxaliplatin	130 mg/m2	IV	D1								
Regimen	Dosage	Route of administration	Times	Frequency/Duration																				
Capecitabine	1000mg/m2	PO bid	D1-14	Q3W																				
Oxaliplatin	130 mg/m2	IV	D1																					
29		<p>Systemic Chemotherapy for Advanced or Metastatic Disease</p> <p>新增 Modified FOLFIRINOX</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Oxaliplatin</td> <td>85mg/m2</td> <td>IV</td> <td>D1</td> <td rowspan="4">Q2W</td> </tr> <tr> <td>Irinotecan</td> <td>150mg/m2</td> <td>IV 30-90min</td> <td>D1</td> </tr> <tr> <td>5-FU</td> <td>2400mg/m2</td> <td>IV for 46-48 hrs</td> <td>D1-2</td> </tr> <tr> <td>Leucovorin</td> <td>400mg/m2</td> <td>IV</td> <td>D1</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Oxaliplatin	85mg/m2	IV	D1	Q2W	Irinotecan	150mg/m2	IV 30-90min	D1	5-FU	2400mg/m2	IV for 46-48 hrs	D1-2	Leucovorin	400mg/m2	IV	D1
Regimen	Dosage	Route of administration	Times	Frequency/Duration																				
Oxaliplatin	85mg/m2	IV	D1	Q2W																				
Irinotecan	150mg/m2	IV 30-90min	D1																					
5-FU	2400mg/m2	IV for 46-48 hrs	D1-2																					
Leucovorin	400mg/m2	IV	D1																					
30		<p>Systemic Chemotherapy for Advanced or Metastatic Disease</p> <p>新增 FOLFIRINOX + bevacizumab</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Bevacizumab</td> <td>5 mg/kg</td> <td>IV</td> <td rowspan="2">D1</td> <td rowspan="2">Q2W</td> </tr> <tr> <td colspan="3">FOLFIRINOX</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Bevacizumab	5 mg/kg	IV	D1	Q2W	FOLFIRINOX											
Regimen	Dosage	Route of administration	Times	Frequency/Duration																				
Bevacizumab	5 mg/kg	IV	D1	Q2W																				
FOLFIRINOX																								

32	<p>IROX</p> <table border="1"> <tr> <td>Oxaliplatin</td> <td>85 mg/m² IV</td> <td>d1</td> </tr> <tr> <td>irinotecan</td> <td>200 mg/m² over 30–90 minutes</td> <td>d1</td> </tr> <tr> <td colspan="3">q3w</td> </tr> </table>	Oxaliplatin	85 mg/m ² IV	d1	irinotecan	200 mg/m ² over 30–90 minutes	d1	q3w			刪除			
Oxaliplatin	85 mg/m ² IV	d1												
irinotecan	200 mg/m ² over 30–90 minutes	d1												
q3w														
32	<p>IROX + bevacizumab^d</p> <table border="1"> <tr> <td>Oxaliplatin</td> <td>85 mg/m² IV</td> <td>d1</td> </tr> <tr> <td>irinotecan</td> <td>200 mg/m² over 30–90 minutes</td> <td>d1</td> </tr> <tr> <td>Bevacizumab</td> <td>5 mg/kg IV</td> <td>d1</td> </tr> <tr> <td colspan="3">q3w</td> </tr> </table>	Oxaliplatin	85 mg/m ² IV	d1	irinotecan	200 mg/m ² over 30–90 minutes	d1	Bevacizumab	5 mg/kg IV	d1	q3w			刪除
Oxaliplatin	85 mg/m ² IV	d1												
irinotecan	200 mg/m ² over 30–90 minutes	d1												
Bevacizumab	5 mg/kg IV	d1												
q3w														
35		<p>Systemic Chemotherapy for Advanced or Metastatic Disease</p> <p>新增 Panitumumab (<i>KRAS/NRAS/BRAF WT only</i>)</p> <table border="1"> <thead> <tr> <th>Regimen</th> <th>Dosage</th> <th>Route of administration</th> <th>Times</th> <th>Frequency/Duration</th> </tr> </thead> <tbody> <tr> <td>Panitumumab</td> <td>6 mg/kg</td> <td>IV over 60min</td> <td>D1</td> <td>Q2W</td> </tr> </tbody> </table>	Regimen	Dosage	Route of administration	Times	Frequency/Duration	Panitumumab	6 mg/kg	IV over 60min	D1	Q2W		
Regimen	Dosage	Route of administration	Times	Frequency/Duration										
Panitumumab	6 mg/kg	IV over 60min	D1	Q2W										

37 Sotorasib + cetuximab (KRAS G12C mutation positive)

Sotorasib	960 mg PO	daily
Cetuximab	500mg/m ² IV	
q2W		

Sotorasib + panitumumab (KRAS G12C mutation positive)

Sotorasib	960 mg PO	daily
Panitumumab	6mg/kg IV	
q2W		

Systemic Chemotherapy for Advanced or Metastatic Disease

修訂 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/m ²	IV over 2 hrs	D1	Q2W
	Subsequent doses: 500 mg/m ²			
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	
+/- FOLFIRI ² or FOLFOX			D1	Q2W

40

七、病理檢查原則

1. 內鏡切除的惡性息肉
 惡性息肉被定義為癌細胞穿過黏膜肌層到達黏膜下層(pT1)，pT1S不認為是“惡性息肉”。
 病理特徵良好：1/2級，無血管/淋巴管侵犯和切緣陽性。
 在認定切緣陽性的定義是不一致的。陽性切緣被定義為：1) 腫瘤距切緣 < 1 mm, 2) 腫瘤距切緣 < 2 mm, 3) 腫瘤細胞穿過切緣。
 病理特徵不良：3/4級，或血管/淋巴管侵犯，或切緣陽性。
 結腸癌適合切除
 組織學證實的原發結腸惡性腫瘤
 病理學分期
 應報告以下項目：
 癌細胞分級
 浸潤深度(T)
 檢出淋巴結數目和陽性數目(N)
 遠端、近端、側面切緣狀況(radial)
 2. 淋巴結評估
 AJCC和病理學家學會建議至少應檢測12個淋巴結以準確確定II期結腸癌。準確確定II期結腸癌應檢測最少淋巴結數目的資料是不統一的。最少淋巴結數目被報導>7, >9, >13, >20, >30。能找到的淋巴結數目和年齡、性別、腫瘤的分期、腫瘤的位置有關。
 尖淋巴結(營養血管的起點)被定義為“在結紮的血管根部的最頂端1 cm以內的最近淋巴結”。尖淋巴結應核外科醫生標記。多因素分析提示尖淋巴結受侵與不良預後明顯相關。
 前哨淋巴結和用IHC檢測微轉移
 用嚴格的組織學和/或IHC檢測前哨淋巴結以發現微轉移是允許的。已有資料報導用大量的H&E切片和/或IHC來檢測細胞角蛋白陽性細胞。雖然研究資料被看到了希望，但是在檢測細胞的何種物質與轉移相關方面的意見是不統一的。NCCN專家組定義微轉移是微轉移(腫瘤在0.2 mm to 2 mm之間)或肉眼可見的轉移。僅被IHC發現的單個細胞的意義是有爭論的。一些研究認為是做轉移灶，然而大多數認為是ITC，而不是微轉移。一些研究發現在II (NO)期結腸癌(用H&E定義)，IHC檢測的細胞角蛋白陽性與預後差有關，但其他研究卻沒有發現。在這些研究中ITC被認為是做轉移。目前，使用前哨淋巴結和僅用IHC檢測的癌細胞的方法，在臨床使用中應謹慎。

刪除病理檢查原則

40	<p>Chung Shan Medical University Hospital</p> <p>大腸癌診療指引</p> <p>Clinical Guideline 2025 version18.0</p> <p>八、外科手術原則</p> <p>1. 大腸切除術</p> <p>淋巴結廓清術</p> <p>應通過病理學檢查明確位於供養血管起點的淋巴結。</p> <p>位於切除野外的可疑淋巴結應進行活檢或切除。</p> <p>陽性淋巴結殘留表明切除不徹底 (R2)。</p> <p>至少應檢測 12 顆淋巴結送檢，以明確結腸癌 II 期 (T3-4, N0) 分期。</p> <p>即使 III 期，淋巴結數目也與存活有關。</p> <p>經腹腔鏡進行結腸切除術的條件</p> <p>有經腹腔鏡進行大(直)腸手術經驗的外科醫生</p> <p>無直腸、橫結腸病變</p> <p>無局部晚期或轉移性疾病</p> <p>無急性腸阻塞或瘻性穿孔徵象</p> <p>需要徹底的腹部探查</p> <p>小病灶的術前標記</p> <p>遺傳性非息肉性大(直)腸癌的處理</p> <p>有明顯結腸癌家族史或年輕 (小於 50 歲) 發病的病人，考慮行更廣泛結腸切除術。</p> <p>需要完全切除以達到治癒的目的。</p> <p>2. 轉移部位-肝臟</p> <p>從肝臟解剖、病變範圍及肝功能維持方面綜合判斷完全切除病灶的可行性</p> <p>無不能切除的肝外病灶</p> <p>不能切除的病人給予新輔助治療後，重新評價能否切除</p> <p>肝臟切除是可切除肝轉移的結腸癌病人的一種治療手段</p> <p>對於不能單純切除的病人，可考慮聯合應用消融術與切除術</p> <p>肝臟轉移的孤立病灶較多發病灶預後好</p>	刪除外科手術原則
----	--	----------

目錄

一、前言.....	13
二、組織病理分類與分化.....	13
三、分期表.....	14
四、大腸癌診療指引.....	15-22
五、復發的評估.....	23
六、化學治療處方.....	24-39
七、早期緩和照護照護原則.....	40
八、安寧緩和照護原則.....	40
九、實症醫學.....	40
十、參考文獻.....	41-45
十一、大腸直腸癌完治率定義.....	46

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臟器或結構，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	腫瘤穿透腹膜臟層
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

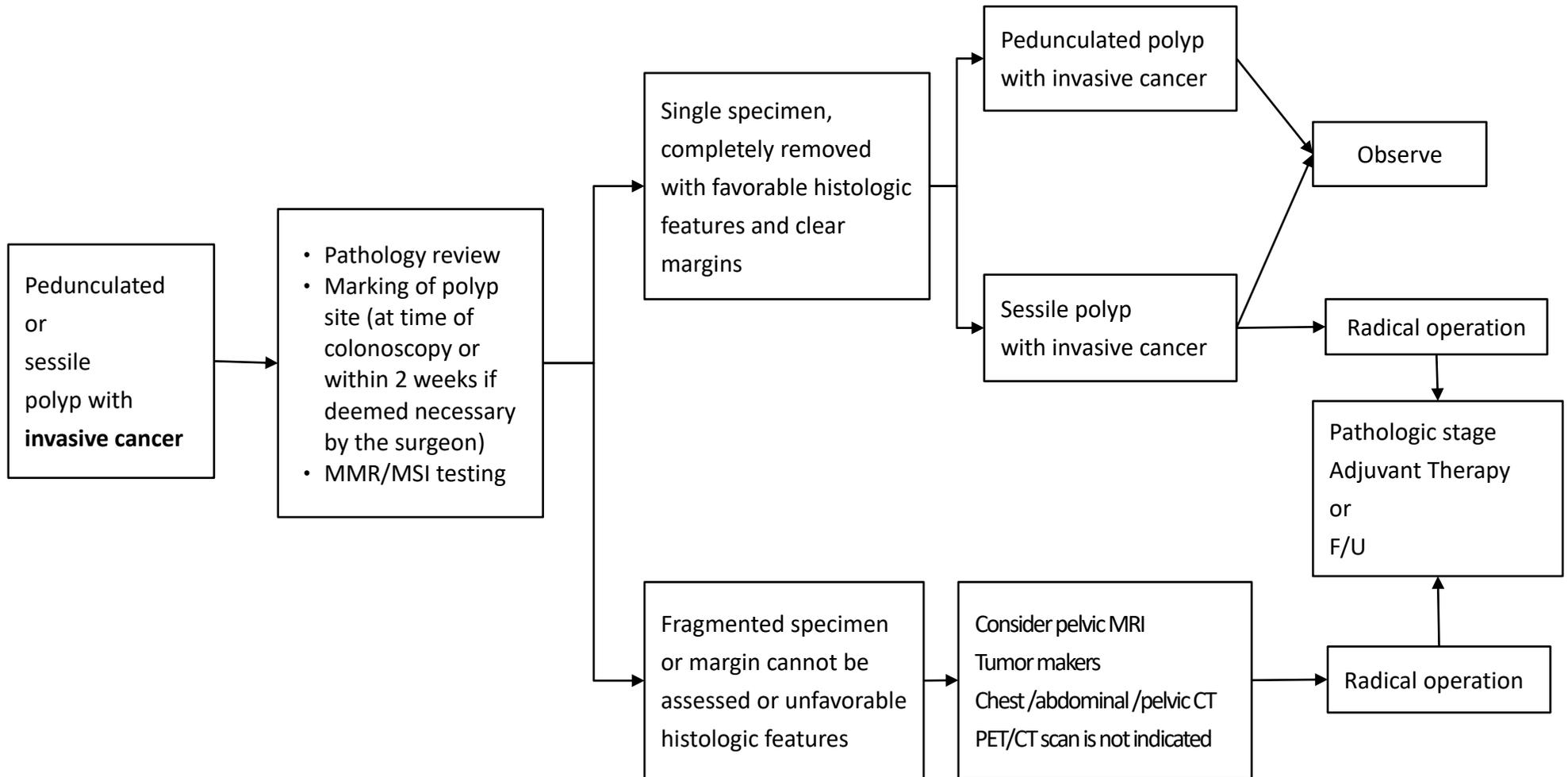
表 2. 分期組合 (Anatomic stage/prognostic groups)

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

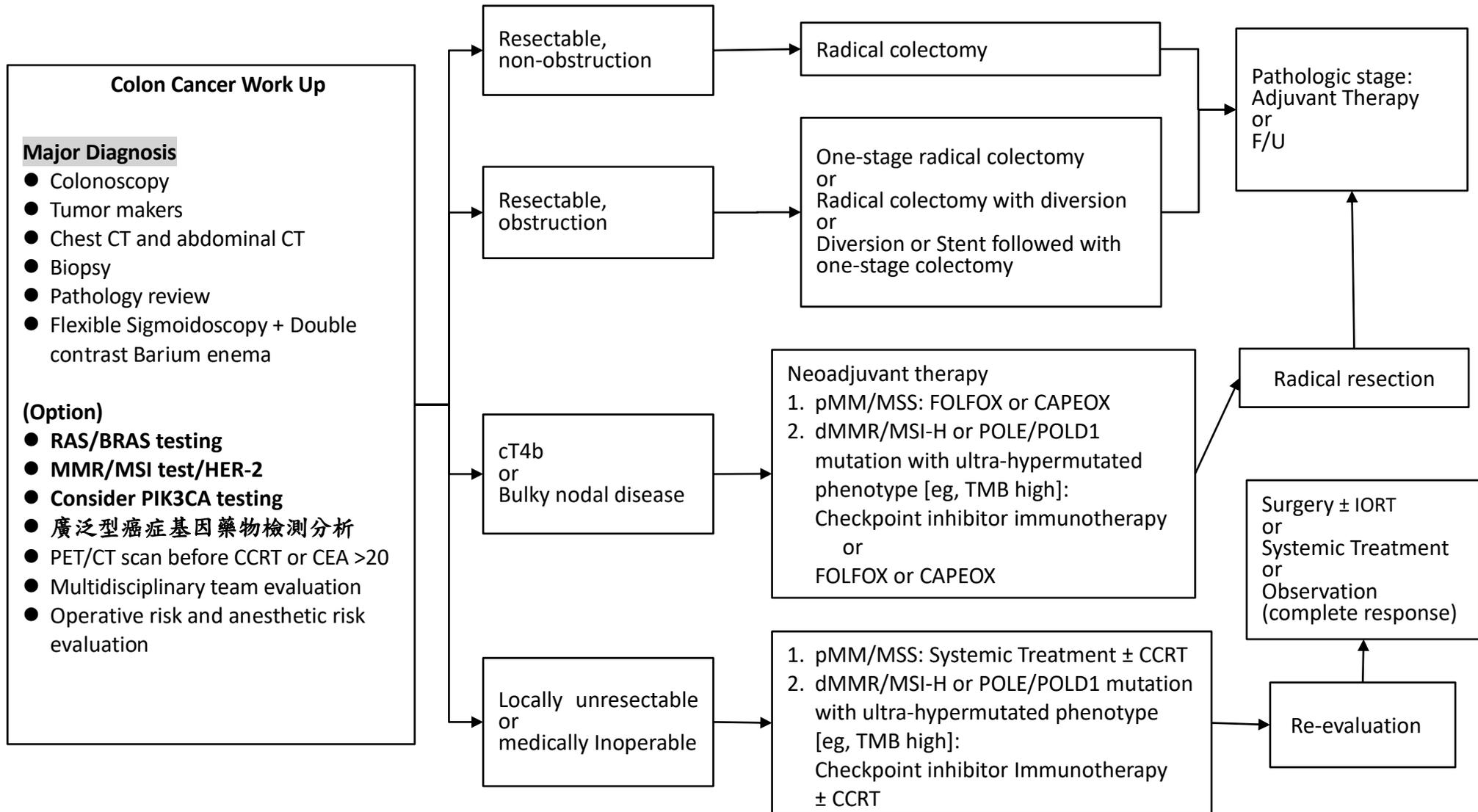
CLINICAL PRESENTATION	WORKUP	FINDINGS	PRIMARY TREATMENT
-----------------------	--------	----------	-------------------

A: Malignant polyp



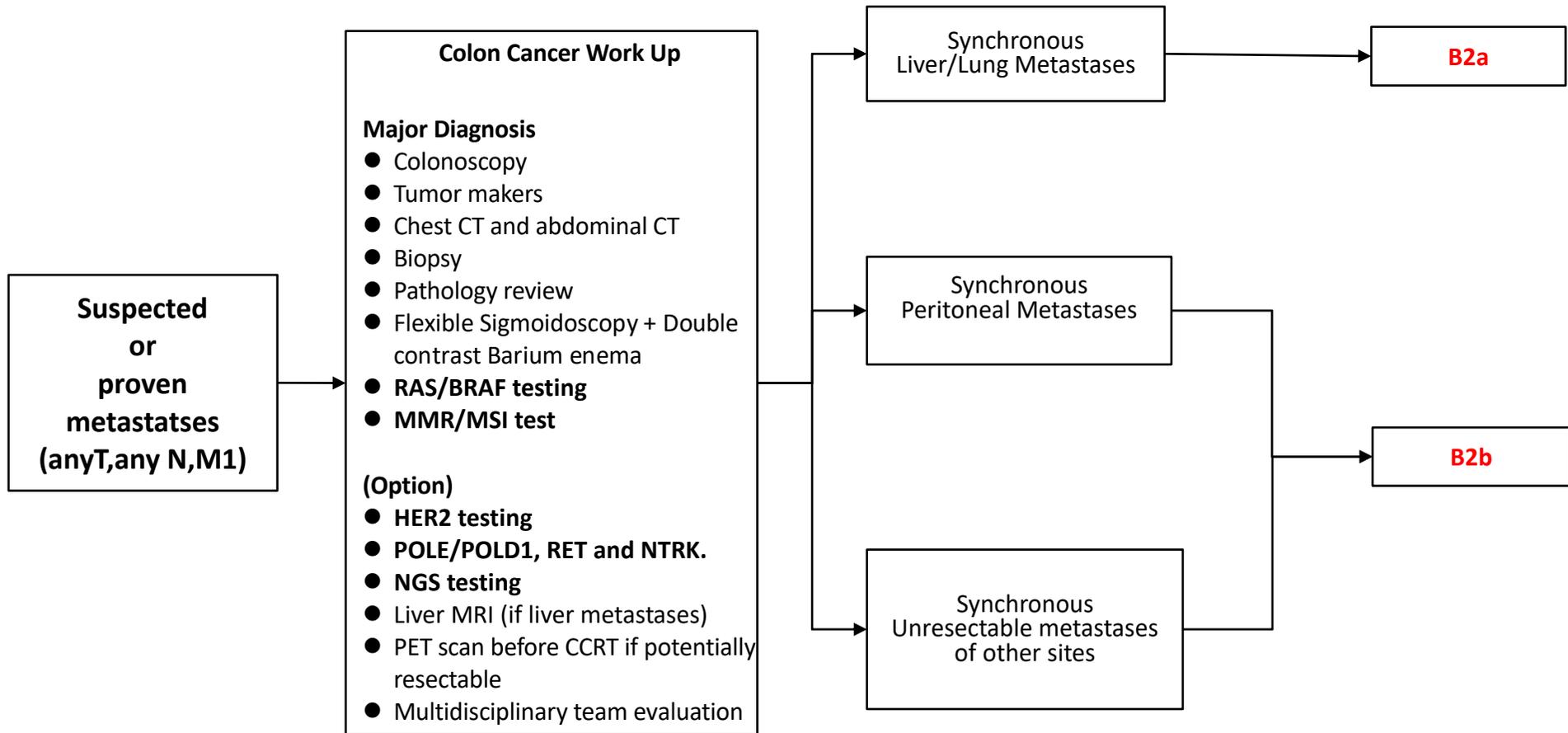
WORKUP	FINDINGS	PRIMARY TREATMENT
--------	----------	-------------------

B1: 大腸癌(無遠端轉移)



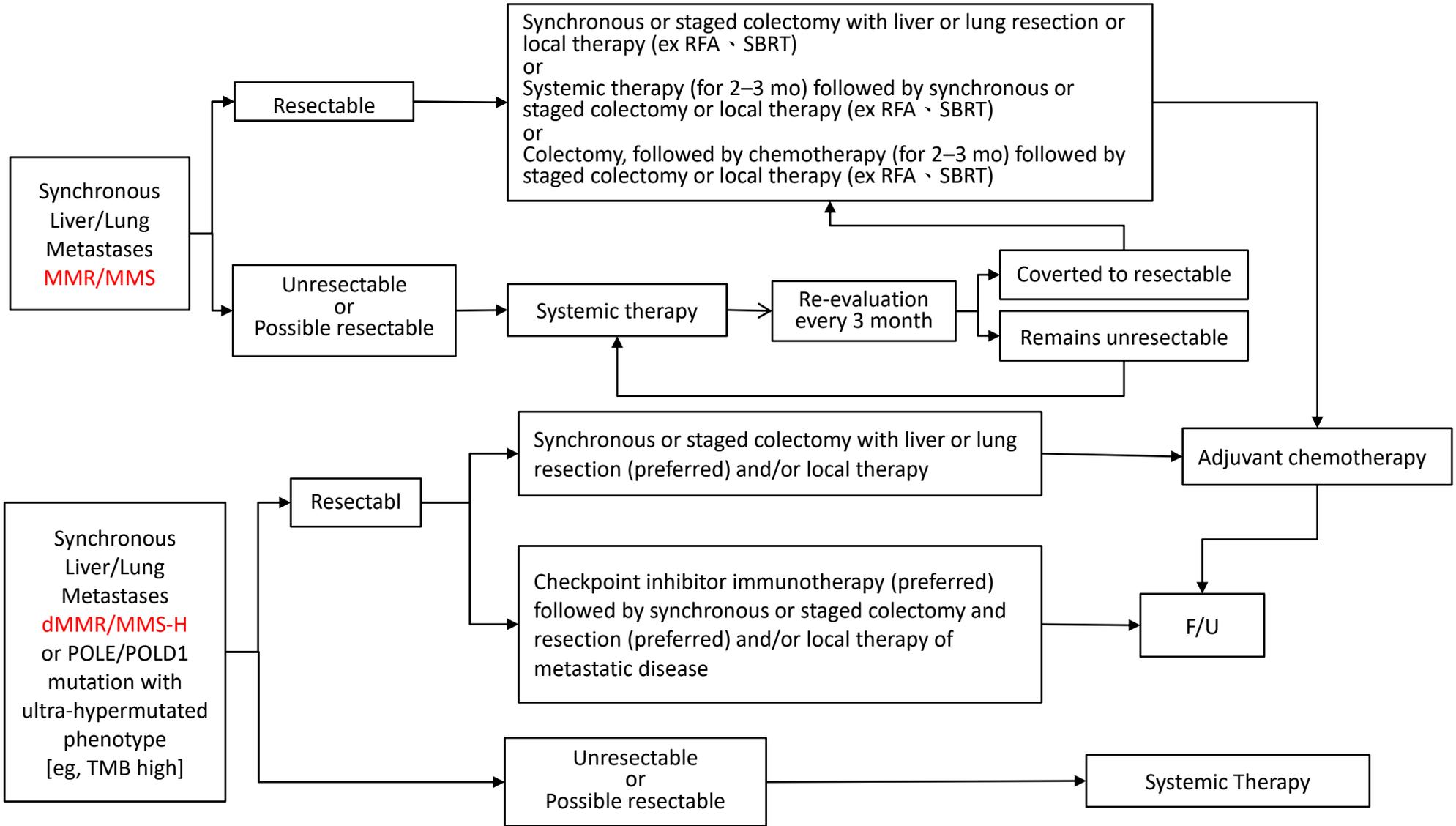
WORKUP	FINDINGS	PRIMARY TREATMENT
--------	----------	-------------------

B2: 大腸癌 (有遠端轉移)



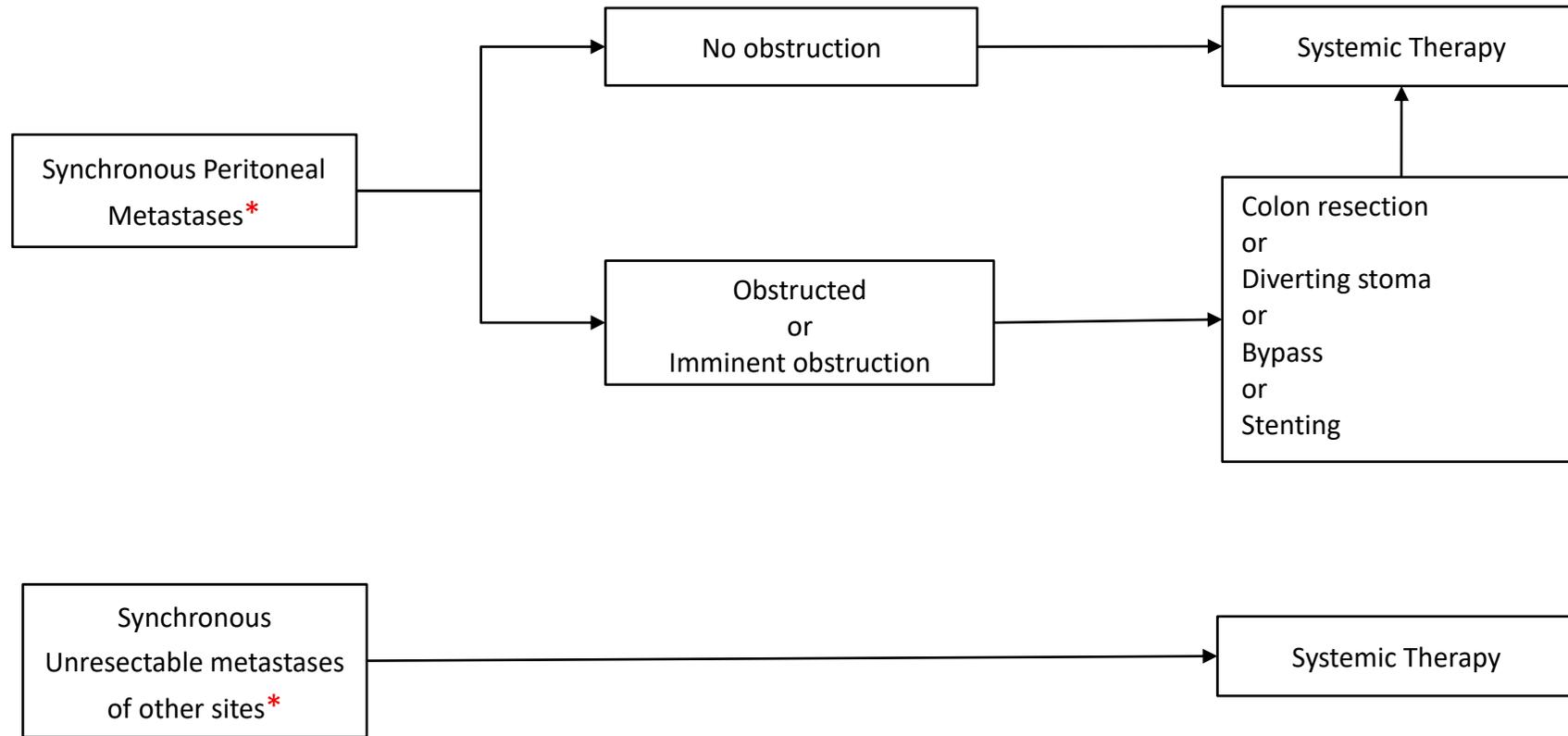
WORKUP	FINDINGS	PRIMARY TREATMENT
--------	----------	-------------------

B2a: 大腸癌 (有遠端轉移)



WORKUP	FINDINGS	PRIMARY TREATMENT
--------	----------	-------------------

B2b: 大腸癌 (有遠端轉移)



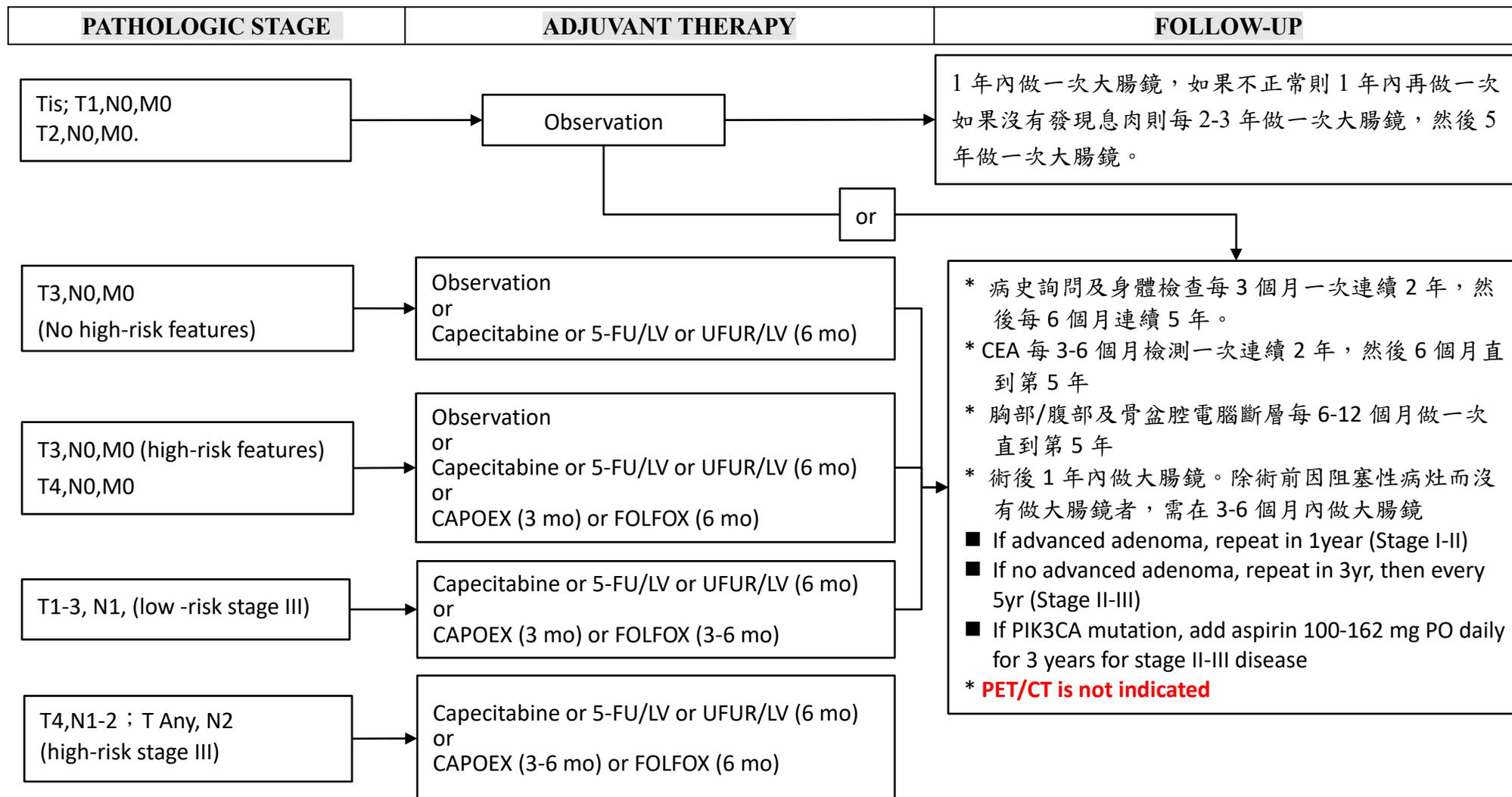
*

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

are managed in the same manner

Post OP

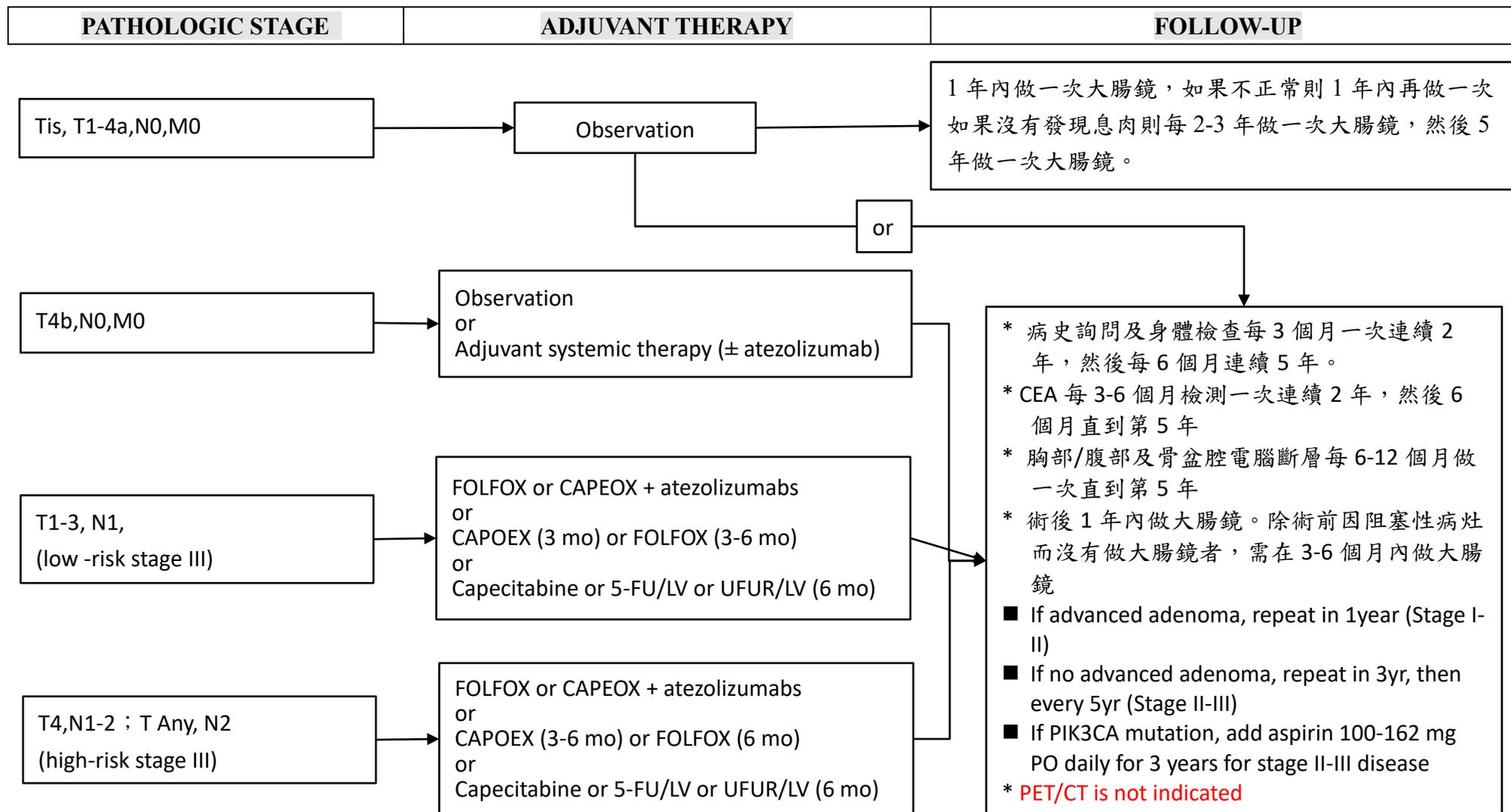
pMMR/MSS Colon Cancer



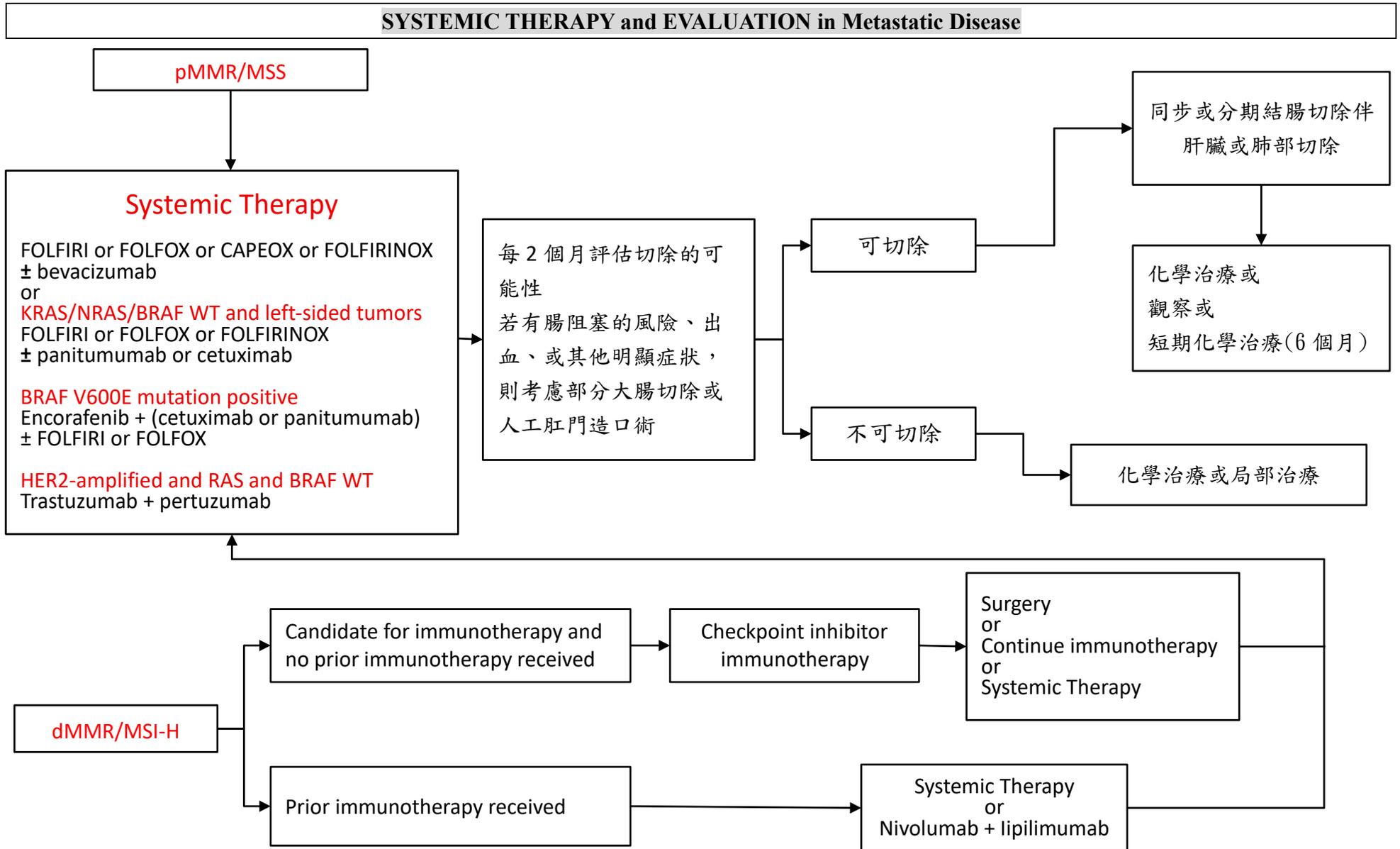
© 3 mo: 3 months ; 6 mo: 6 months

Post OP

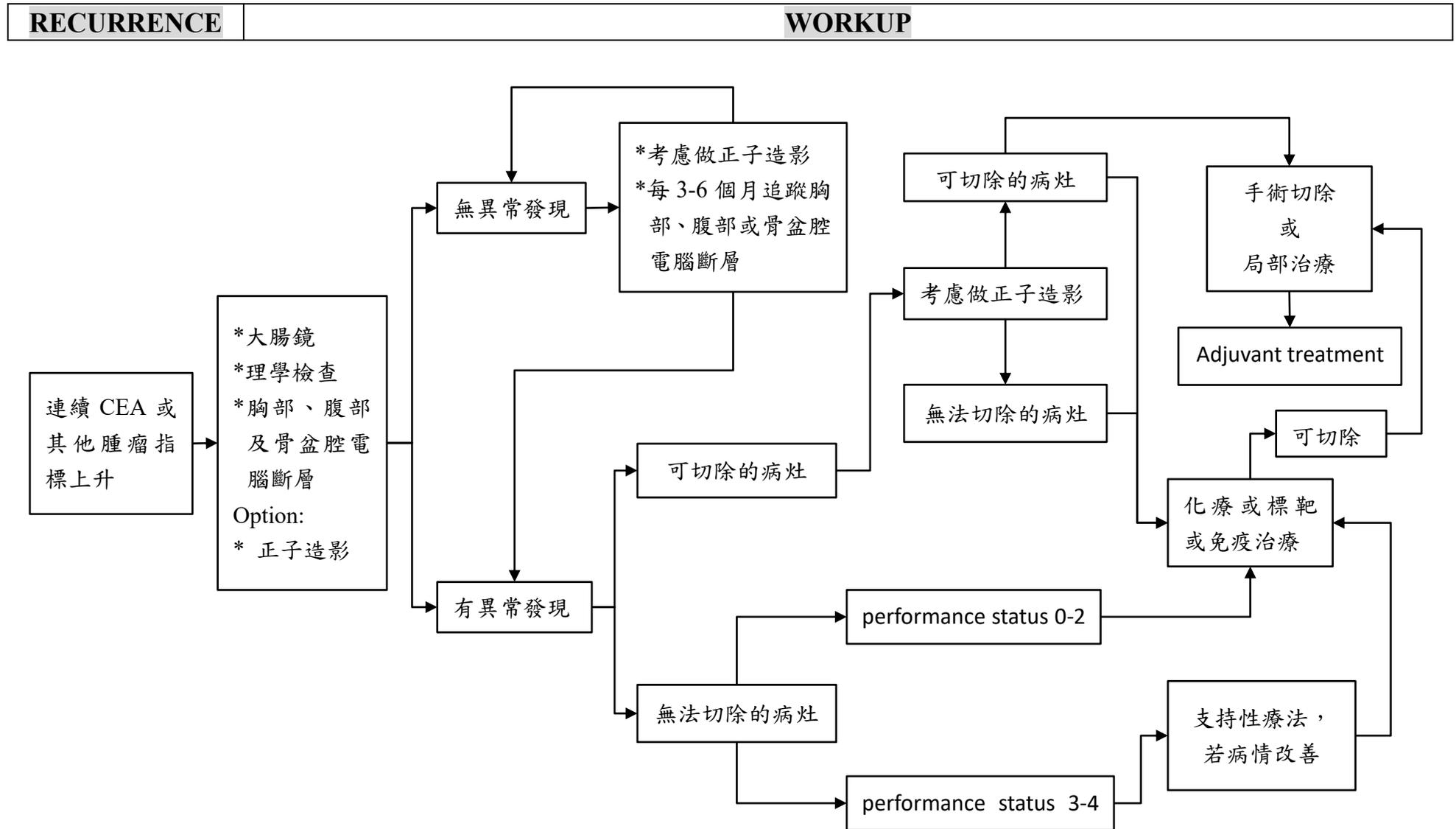
dMMR/MSI-H or POLE/POLD1 mutation with ultra-hypermuted phenotype [eg, TMB>50 mut/Mb] Colon Cancer



© 3 mo: 3 months ; 6 mo: 6 months



復發的評估



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/m ² *	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/m ² /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/m ²	IV	D1	Q2W x 12 cycles
5FU	400 mg/m ²	IV Bolus		
5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2	
Leucovorin	400 mg/m ²	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/m ²	IV	D1	Q2W x 12 cycles
5-FU	2400 -2600 mg/m ²	IV over 46-48 hrs		
Leucovorin	400 mg/m ²	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

CAPOEX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1000mg/m ²	PO bid	D1-14	Q3W x 8 cycles
Oxaliplatin	130 mg/m ²	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/m ²	IV	D1	Q2W x 6 cycles
Leucovorin	400 mg/m ²	IV		
5FU	400 mg/m ²	IV Bolus		
5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2	

mFOLFOX6 (no bolus)³

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m ² IV	IV	D1	Q2W x 6 cycles
Leucovorin	400 mg/m ²	IV		
5-FU	2400 -2600 mg/m ² 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

CAPOEX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1000 mg/m ²	PO bid	D1-14	Q3W x4 cycles
Oxaliplatin	130 mg/m ²	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/m ² IV	IV	D1	Q2W
Leucovorin	400 mg/m ²	IV		
5-FU	Bolus 400 mg/m ²	IV Bolus		
5-FU	2400 mg/m ² 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/m ² IV	IV	D1	Q2W
Leucovorin	400 mg/m ²	IV		
5-FU	2400-2600 mg/m ² 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/m ²	IV	D1	Q2W
Leucovorin	400 mg/m ²	IV		
5FU	400 mg/m ²	IV Bolus		
5FU	2400 mg/m ²	IV over 46-48 hrs	D1-2	

mFOLFOX6 (no bolus)³

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Oxaliplatin	85 mg/m ² IV	IV	D1	Q2W
Leucovorin	400 mg/m ² IV over	IV		
5-FU	2400 -2600 mg/m ² 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 Clin Oncol* 2000;18:2938-2947
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.
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

CAPOEX

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	1000 mg/m ²	PO bid	D1-14	Q3W
Oxaliplatin	130 mg/m ²	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/m ²	IV	D1	Q2W
Irinotecan	150 mg/m ²	IV 30-90min	D1	
5-FU	2400 mg/m ²	IV for 46-48 hrs	D1-2	
Leucovorin	400 mg/m ²	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 with metastatic 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
CAPOEX				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/m ² Subsequent doses: 500 mg/m ²	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/m ² Subsequent doses: 500 mg/m ²	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/m ² Subsequent doses: 500 mg/m ²	IV over 2hrs	D1	Q2W
CAPEOX				Q3W

- 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
- 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
CAPOEX				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.

2nd line

Capecitabine

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Capecitabine	850-1250 mg/m ²	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/m ²	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/m ²	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/m ²	IV over 30-90min	D1	Q2W
Bevacizumab	5 mg/kg	IV		

Yildiz R, et al. Bevacizumab plus irinotecan-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/m ² IV	IV	D1	Q2W
Cetuximab	First dose: 400 mg/m ² Subsequent doses: 500 mg/m ²	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/m ²	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/m ²	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/m ² Subsequent doses: 500 mg/m ²	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.

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/m ² Subsequent doses: 500 mg/m ²	IV over 2 hrs	D1	Q2W
or				
Panitumumab	6 mg/kg	IV over 60 min	D1	Q2W
+/- FOLFIRI ² or FOLFOX			D1	

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).

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

Regimen	Dosage	Route of administration	Times	Frequency/Duration
Trifluridine + tipiracil	35 mg/m ² -80mg/m ² 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/m ² *	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, Furuhashi 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/m ² or 1000-1500mg	PO bid	D1-28	Q4W

- 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
- 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
- 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.
- 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-hypermuted 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-hypermuted 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 + Ipilimumab (*dMMR/MSI-H or POLE/POLD1 mutation with ultra-hypermuted 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 recommendation is 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。

十、參考文獻 References

1. NCCN guideline 2025.v.5.0 版
2. 彭仁奎、邱泰源、陳慶餘（2006），老年緩和醫療簡介，*安寧療護雜誌* 11(3)，273-284
3. Sulkes A, et al. Uracil-ftorafur: an oral fluoropyrimidine active in colorectal cancer. *J Clin Oncol.* Oct 1998;16(10):3461-3475.
4. 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.
5. 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.
6. 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.
7. Twelves C, et al. Capecitabine as adjuvant treatment for stage III colon cancer. *N Engl J Med* 2005;352:2696-2704.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. Andre T, Boni C et al. Oxaliplatin, fluorouracil, and leucovorin as adjuvant treatment for colon cancer. *N Engl J Med* 2004;350:2343-2351.
16. 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
17. 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.
18. 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.
19. 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.
20. deGramont A, Figer A, Seymour M, et al. Leucovorin and Fluorouracil With or Without Oxaliplatin as First-Line Treatment in Advanced Colorectal Cancer. *J Clin Oncol* 2000;18:2938-2947
21. 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.
22. 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.
23. 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
24. 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.
25. 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.

26. Emmanouilides C, et al. Front-line bevacizumab in combination with oxaliplatin, leucovorin and 5-fluorouracil (FOLFOX) in patients with metastatic colorectal cancer: a multicenter phase II study. *BMC Cancer* 2007;7:91.
27. Cunningham D, et al. Cetuximab monotherapy and cetuximab plus irinotecan in irinotecan-refractory metastatic colorectal cancer. *N Engl J Med* 2004;351:337-345.
28. 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.
29. 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
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. Yildiz R, et al. Bevacizumab plus irinotecan-based therapy in metastatic colorectal cancer patients previously treated with oxaliplatin-based regimens. *Cancer Invest* 2010;28:33-37.
37. 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.
38. 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.

39. Taberbero 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.
40. 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.
41. 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.
42. 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)
43. 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.
44. 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.
45. Kopetz S, et al. Encorafenib, Binimetinib, and Cetuximab in BRAF V600E-Mutated Colorectal Cancer. *N Engl J Med.* 2019;381:1632-1643.
46. 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.
47. Taberbero, 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
48. Kopetz S, et al. Encorafenib, cetuximab and chemotherapy in BRAF-mutant colorectal cancer: a randomized phase 3 trial. *Nat Med* 2025.
49. 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.
50. 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).
51. Mayer RJ, et al. Randomized Trial of TAS-102 for Refractory Metastatic Colorectal Cancer (RECOURSE). *N Engl J Med* 2015;372:1909-19.
52. 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.

53. 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.
54. 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.
55. Koizumi W, Boku N, Yamaguchi K, Miyata Y, Sawaki A, Kato T, Toh Y, Hyodo I, Nishina T, Furuhashi 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
56. 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
57. 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
58. 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.
59. 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)
60. Le DT, et al. PD-1 blockade in tumors with mismatch-repair deficiency. *N Engl J Med* 2015;372:2509-2520.
61. 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.
62. 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.

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