中山醫學大學附設醫院

院內通用抗癌藥物處方集

抗癌藥物安全小組簽章	癌委會公告日期
吳[illegible]	114.02.06

中山醫學大學附設醫院 癌症委員會 台中市建國北路一段110號

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胃癌

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各癌團隊修訂最新版次及團隊會議修訂日期

多專科團隊	癌症別	編修或改版日期	最新版次	團隊會議修訂日期
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頭頸癌

口腔癌

Neoadjuvant chemotherapy

Modified TPF

Docetaxel	20 mg/m2 iv	d1, 8
Cisplatin	50 mg/m2 iv	d1
5-FU	400 mg/m2/d civi	d1
5-FU	1200 mg/m2/d	46-48 hrs
Q2w x 3 cycles		

Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007 Oct 25; 357(17):1695-704.

Modified TPF at CSMUH

Docetaxel	33 mg/m2 iv	d1, 8
Cisplatin	75 mg/m2 iv	d1
5-FU	750 mg/m2/d civi	d1-4
Q3w x 3-4 cycles		

Vermorken JB et al. Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Eng J Med 2007; 357:1695.

Modified TP+Ufur

Docetaxel	30 mg/m2 iv	d1, 8
Cisplatin	50 mg/m2 iv	d1
UFUR	400 mg/m2/d civi	d1-4
Qw x 6 cycles		

Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007 Oct 2 5;357(17):1695-704.

EPT

Cetuximab	250 mg/m2 iv	d1
Cisplatin	30 mg/m2 iv	d1
Paclitaxel	60-80 mg/m2 iv	d1
Qw		

Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007 Oct 25;357(17):1695-704.

Concurrent chemoradiation

Cisplatin

Cisplatin	30 mg/m2 iv	Qw
total > 200 mg/m2		

Beckmann GK et al. Hyperfractionated accelerated radiotherapy in combination with weekly cisplatin for locally advanced head and neck cancer. Head Neck 2005;27:36.

Cisplatin

Cisplatin	100 mg/m2 iv	Q3w
total > 200 mg/m2		

Beckmann GK et al. Hyperfractionated accelerated radiotherapy in combination with weekly cisplatin for locally advanced head and neck cancer. Head Neck 2005;27:36.

Cetuximab

Cetuximab loading dose 400 mg/m2 iv, then 250 mg/m2 iv qw
Cetuximab loading dose 400 mg/m2 iv, then 500 mg/m2 iv q2w

Bonner JA et al. Radiotherapy plus cetuximab for squamous cell carcinoma of the head and neck. N Engl J Med 2006; 354:567.

Adjuvant chemotherapy

Cisplatin

Cisplatin	30 mg/m2 iv
Qw, total > 200 mg/m2	

Beckmann GK et al. Hyperfractionated accelerated radiotherapy in combination with weekly cisplatin for locally advanced head and neck cancer. Head Neck 2005;27:36.

Cisplatin

Cisplatin	100 mg/m2 iv
Q3w, total > 200 mg/m2	

Beckmann GK et al. Hyperfractionated accelerated radiotherapy in combination with weekly cisplatin fo r locally advanced head and neck cancer. Head Neck 2005;27:36.

UFT

Uracil-tegafur	400 mg/day po	1year
7 days/week		

Yuzuru Nibe et al. Effectiveness of Concurrent Radiation Therapy with UFT or TS-1 for T2N0 Glottic Cancer in Japan. Anticancer Res 2007;27:3497.

Maintenance chemotherapy

UFT

Uracil-tegafur	400 mg/day po	1year
7 days/week		

Yuzuru Nibe et al. Effectiveness of Concurrent Radiation Therapy with UFT or TS-1 for T2N0 Glottic Cancer in Japan. Anticancer Res 2007;27:3497.

TS-1

TS-1	80mg/m2 po	1year
7 days/week 4 wks on/2wk off or 2wks/1wk off		

Yuzuru Nibe et al. Effectiveness of Concurrent Radiation Therapy with UFT or TS-1 for T2N0 Glottic Cancer in Japan. Anticancer Res 2007;27:3497.

Recurrent /matastasis chemotherapy

PF

Cisplatin	50 mg/m2 iv	d1
5-FU	400 mg/m2/d	d1
5-FU	1200 mg/m2/d	46-48hr
Leucovorin	200 mg/m2	d1
Q2w		

Forastiere AA et al. Randomized comparison of cisplatin plus fluorouracil and carboplatin plus fluorouracil versus methotrexate in advanced squamous-cell carcinoma of the head and neck. J Clin Oncol 1992; 10:1245.

EPF

Cetuximab	250 mg/m2 iv	d1
Cisplatin	30 mg/m2 iv	d1
5-FU		
Q4w		

Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007 Oct 25;357(17):1695-704.

Pembro+PF

Keytruda	200mg fix or 100mg (self pay) N/S250ml IVD 1hour	d1
Cisplatin	50 mg/m2 iv	d1
5-FU	400 mg/m2/d civi	d1
5-FU	1200 mg/m2/d civi	d1
Leucovorin	200 mg/m2	d1
Q2w		

Burtness B, Harrington KJ, Greil R, et al: Pembrolizumab alone or with chemotherapy versus cetuximab with chemotherapy for recurrent or metastatic squamous cell carcinoma of the head and neck (KEYNOTE-048): A randomised, open-label, phase 3 study. Lancet 394:1915-1928, 2019.

Pembro alone

Keytruda	200mg fix or 100mg (self pay) N/S250ml IVD 1hour
Q3W	

Burtness B, Harrington KJ, Greil R, et al: Pembrolizumab alone or with chemotherapy versus cetuximab with chemotherapy for recurrent or metastatic squamous cell carcinoma of the head and neck (KEYNOTE-048): A randomised, open-label, phase 3 study. Lancet 394:1915-1928, 2019.

Nivolumab

Nivolumab	200mg fix or 100mg (self pay) N/S250ml IVD 1hour
Q2W	

Ferris RL, Blumenschein GJr, Fayette J, et al. Nivolumab for Recurrent Squamous-Cell Carcinoma of the Head and Neck. N Engl J Med 2016;375:1856-67.

MEMOCLUB

Methotrexate	30 mg/m2	d1
Epirubicin	30 mg/m2	d1
Mitomycin-C	4 mg/m2	d8
Vincristin	1 mg/m2	d8
Cisplatin	25 mg/m2	d8
Leucovorin	120 mg/m2	d8
5-fluorouracil	1000 mg/m2	d8
Bleomycin	10 mg/m2	d8
Q2w		

Jin-Ching Lin et al. Experience of cetuximab in the salvage treatment for recurrent/metastatic ora l squamous cell carcinoma. 2012 ASCO Annual Meeting. Abstract e16006

Methotrexate

Methotrexate	30 mg/m2	d1
Qw		

Forastiere AA et al. Randomized comparison of cisplatin plus fluorouracil and carboplatin plus fluorouracil versus methotrexate in advanced squamous-cell carcinoma of the head and neck. J Clin Oncol 1992; 10:1245

EPT

Cetuximab	250 mg/m2 iv	d1
Cisplatin	30 mg/m2 iv	d1
Paclitaxel	60-80 mg/m2 iv	d1
Qw		

Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007 Oct 25;357(17):1695-704.

PT

Cisplatin	30 mg/m2 iv	d1
Paclitaxel	60-80 mg/m2 iv	d1
Qw		

Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007 Oct 25;357(17):1695-704.

鼻咽癌

Concurrent chemoradiation therapy

Cisplatin

Cisplatin	30-35 mg/m2 iv	d1
Qw, total > 200 mg/m2		

Beckmann GK et al. Hyperfractionated accelerated radiotherapy in combination with weekly cisplatin for locally advanced head and neck cancer. Head Neck 2005;27:36.

UFT

Uracil-tegafur	250 – 300 mg/m2 po	QD
7 days/week		

Yuzuru Nibe et al. Effectiveness of Concurrent Radiation Therapy with UFT or TS-1 for T2N0 Glottic Cancer in Japan. Anticancer Res 2007;27:3497.

Concurrent targeted-radiation therapy

Cetuximab

Cetuximab loading dose 400 mg/m2 iv, then 250 mg/m2 iv qw Cetuximab loading dose 400 mg/m2 iv, then 500 mg/m2 iv q2w

Bonner JA et al. Radiotherapy plus cetuximab for squamous cell carcinoma of the head and neck. N Engl J Med 2006; 354:567.

Neoadjuvant chemotherapy

Modified TPF at CSMUH

Docetaxel (Optional)	33 mg/m2 iv	d1, 8
Cisplatin	75 mg/m2 iv	d1
5-FU	750 mg/m2/d civi	d1-4
Q3w x 3-4 cycles		

Vermorken JB et al. Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Eng J Med 2007; 357:1695.

PF

Cisplatin	70 - 80 mg/m2 iv	d1
5-FU	800 - 1000 mg/m2/d civi	d1-4
Q3w x 3-4 cycles		

Al-Sarraf et al. Chemoradiotherapy versus radiotherapy in patients with advanced nasopharyngeal cancer: Phase III randomized intergroup study 0099. J Clin Oncol 1998; 16:1310.

Gemcitabine+Cisplatin

Gemcitabine	1000 mg/m2 iv	d1,8,15
Cisplatin	50-75 mg/m2/d civi	d1
Q4w x 3-4 cycles		

Zhang L et al. Phase II clinical study of gemcitabine in the treatment of patients with advanced nasopharyngeal carcinoma after the failure of platinum-based chemotherapy. Cancer Chemother Pharmacol 2008;61:33.

Gemcitabine

Gemcitabine	1000 mg/m2 iv	d1,8,15
Q4w x 3-4 cycles		

Zhang L et al. Phase II clinical study of gemcitabine in the treatment of patients with advanced nasopharyngeal carcinoma after the failure of platinum-based chemotherapy. Cancer Chemother Pharmacol 2008;61:33.

Adjuvant chemotherapy

UFT

Uracil-tegafur	400 mg	till PD
5 days/week		

Yuzuru Nibe et al. Effectiveness of Concurrent Radiation Therapy with UFT or TS-1for T2N0 Glottic Cancer in Japan. Anticancer Res 2007;27:3497.

Recurrent /matastasis chemotherapy

PF

Cisplatin	70 - 100 mg/m2 iv	d1
5-FU	800 - 1000 mg/m2/d civi	d1-4
Q3w		

Al-Sarraf et al. Chemoradiotherapy versus radiotherapy in patients with advanced nasopharyngeal cancer: Phase III randomized intergroup study 0099. J Clin Oncol 1998; 16:1310.

Modified PFL at CSMUH

Cisplatin	50 mg/m2 iv	d1
5-FU	2400 - 3000 mg/m2/d civi	d1
Leucovorin	200 mg/m2	d1
Q2w		

Forastiere AA et al. Randomized comparison of cisplatin plus fluorouracil and carboplatin plus fluorouracil versus methotrexate in advanced squamous-cell carcinoma of the head and neck. J Clin Oncol 1992; 10:1245.

P-HDFL

Cisplatin	30 mg/m2 iv	d1, 8, 15
5-FU	2000 - 2600 mg/m2/d civi	d1, 8, 15
Leucovorin	200 mg/m2/d	d1, 8, 15
Q4w		

Chi KH et al. Elimination of dose limiting toxicities of cisplatin, 5-fluorouracil, and leucovorin using a weekly 24-hour infusion schedule for the treatment of patients with nasopharyngeal carcinoma. Cancer 1995;76:2186.

Paclitaxel

Paclitaxel	80 mg/m2	d1, 8, 15
Q4w		

Grau JJ et al. Weekly paclitaxel for platin-resistant stage IV head and neck cancer patients. Acta Otolaryngol 2009;129:1294.

Modified Paclitaxel + PF at CSMUH

Paclitaxel	80 mg/m2 iv	d1, 8
Cisplatin	70 – 80 mg/m2 iv	d1
5-FU	750 mg/m2/d civi	d1-4
Q3w		

Hitt R et al. Phase III study comparing cisplatin plus fluorouracil to paclitaxel, cisplatin, and fluorouracil induction chemotherapy followed by chemoradiotherapy in locally advanced head and neck cancer. J Clin Oncol 2005;23:8636.

Docetaxel

Docetaxel	30-40 mg/m2	d1, 8, 15
Q4w		

Guardiola E et al. Results of a randomised phase II study comparing docetaxel with methotrexate in patients with recurrent head and neck cancer. Eur J Cancer 2004;40:2071.

Modified TPF at CSMUH

Docetaxel	33 mg/m2 iv	d1, 8
Cisplatin	75 mg/m2 iv	d1
5-FU	750 mg/m2/d civi	d1-4
Q3w		

Vermorken JB et al. Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Eng J Med 2007; 357:1695.

Methotrexate +/- Cyclophosphamide

Methotrexate	30 - 40 mg/m2	d1
Cyclophosphamide	200 mg/m2	d1
Qw		

Forastiere AA et al. Randomized comparison of cisplatin plus fluorouracil and carboplatinplus fluorouracil versus methotrexate in advanced squamous-cell carcinoma of the head and neck. J Clin Oncol 1992; 10:1245.

Gemcitabine

Gemcitabine	1000 mg/m2	d1, 8, 15
Q4w		

Zhang L et al. Phase II clinical study of gemcitabine in the treatment of patients with advanced nasopharyngeal carcinoma after the failure of platinum-based chemotherapy. Cancer Chemother Pharmacol 2008;61:33.

MEMOCLUB

Methotrexate	30 mg/m2	d1
Epirubicin	30 mg/m2	d1
Mitomycin-C	4 mg/m2	d8
Vincristin	1 mg/m2	d8
Cisplatin	25 mg/m2	d8
Leucovorin	120 mg/m2	d8

Jin-Ching Lin et al. Experience of cetuximab in the salvage treatment for recurrent/metastatic oral squamous cell carcinoma. 2012 ASCO Annual Meeting. Abstract e16006

Cetuximab +/- Chemotherapy

Cetuximab loading dose 400 mg/m2 iv, then 250 mg/m2 iv qw
Cetuximab loading dose 400 mg/m2 iv, then 500 mg/m2 iv q2w

Hitt R et al. Phase II study of combination cetuximab and weekly paclitaxel in patients with metastatic/ recurrent squamous cell carcinoma of head and neck (SCCHN): Spanish Head and Neck Cancer Group (TTCC). 2007 ASCO annual meeting. Abstract 6012

Maintenance chemotherapy

UFT

Uracil-tegafur	400 mg/day po	1year
7 days/week		

Yuzuru Nibe et al. Effectiveness of Concurrent Radiation Therapy with UFT or TS-1for T2N0 Glottic Cancer in Japan. Anticancer Res 2007;27:3497.

Recurrent, Unresectable, Oligometastatic, or Metastatic Disease (with no surgery or RT option)

Preferred Regimens

First-Line
• Cisplatin/gemcitabine (category 1)
• Cisplatin/gemcitabine + PD-1 inhibitor (eg, pembrolizumab or nivolumab)

Other Recommended Regimens

First-Line
• Combination Therapy
Cisplatin/5-FU
Cisplatin or carboplatin/docetaxel or paclitaxel
Carboplatin/cetuximab
Gemcitabine/carboplatin

Subsequent-Line

• Immunotherapy
Nivolumab if previously treated, recurrent or metastatic non-keratinizing disease (category 2B)
Pembrolizumab if previously treated, PD-L1–positive,recurrent or metastatic disease (category 2B)

Single Agents

Cisplatin
Carboplatin
Paclitaxel
Docetaxel
5-FU
Methotrexate
Gemcitabine
Capecitabine

Useful in Certain Circumstances

Subsequent-Line
• Pembrolizumab (for tumor mutational burden-high [TMB-H] tumors [≥10 mut/Mb])

食道癌

Neoadjuvant chemoradiation
(followed by surgery for resectable cancer)

Paclitaxel + Carboplatin

Paclitaxel	50 mg/m^2	IV	D1
Carboplatin	AUC 2	IV	D1
Weekly for 5 weeks			

van Hagen P, Hulshof MC, van Lanschot JJ, et al. Preoperative chemoradiotherapy for esophageal or junctional cancer. N Engl J Med 2012;366:2074-2084.

Fluorouracil (5-FU) + Oxaliplatin (For ECJ adenocarcinoma)

Oxaliplatin	65 mg/m^2	IV	D1
(Leucovorin 400 mg/m^2 on Day1; Fluorouracil 400 mg/m^2 IV Push on Day 1)			
Fluorouracil (5-FU)	600 mg/m^2	IV	D1,29
IV continuous infusion over 24 hours daily on Days 1–2 Cycled every 14 days for 3 cycles with radiation.			

1. van Hagen P, Hulshof MC, van Lanschot JJ, et al. Preoperative chemoradiotherapy for esophageal or junctional cancer. N Engl J Med 2012;366:2074-2084.
2. Conroy T, Galais MP, Raoul JL, et al. Definitive chemoradiotherapy with FOLFOX versus fluorouracil and cisplatin in patients with oesophageal cancer (PRODIGE5/ ACCORD17): final results of a randomised, phase 2/3 trial. Lancet Oncol 2014;15:305-314.

PF

Cisplatin	60 - 80 mg/m^2	IV	D1
Fluorouracil (5-FU)	600 - 800 mg/m^2	civi	D1-4
Q4w x 2 cycles			

Tepper J, Krasna MJ, Niedzwiecki D, et al. Phase III trial of trimodality therapy with cisplatin, fluorouracil, radiotherapy, and surgery compared with surgery alone for esophageal cancer: CALGB 9781. J Clin Oncol 2008;26:1086-1092.

Bi-weekly PF

Cisplatin	30 - 40 mg/m^2	IV		D1
Fluorouracil (5-FU)	1200 -1600 mg/m^2/day	civi	46-48 hours	D1
Q2w x 3 cycles				

Cisplatin +/- Capecitabine (UFUR)

Cisplatin	25 - 30 mg/m^2	IV		D1
Capecitabine	800 mg/m^2	PO	BID	D1-5
UFUR	200-250 mg/m^2/day	PO	BID	D1-5
Qw x 12 cycles				

Lee SS, Kim SB, Park SI, et al. Capecitabine and cisplatin chemotherapy (XP) alone or sequentially combined chemoradiotherapy containing XP regimen in patients with three different settings of stage IV esophageal cancer. Jpn J Clin Oncol 2007;37:829-835.

Capecitabine + Oxaliplatin

Oxaliplatin	65 mg/m^2	IV		D1, 15, and 29 for 3 doses
Capecitabine	625 mg	PO	BID	D1–5 weekly for 5 weeks

Javle MM, Yang G, Nwogu CE, et al. Capecitabine, oxaliplatin and radiotherapy: a phase IB neoadjuvant study for esophageal cancer with gene expression analysis. Cancer Invest 2009;27:193-200.

Capecitabine + Cisplatin

Cisplatin	30 mg/m^2	IV		D1
Capecitabine	625 mg	PO	BID	D1–5 weekly for 5 weeks

Lee SS, Kim SB, Park SI, et al. Capecitabine and cisplatin chemotherapy (XP) alone or sequentially combined chemoradiotherapy containing XP regimen in patients with three different settings of stage IV esophageal cancer. Jpn J Clin Oncol 2007;37:829-835.

PERIOPERATIVE CHEMOTHERAPY
(Only for adenocarcinoma of the thoracic esophagus or EGJ)

FOLFOX

Oxaliplatin	85 mg/m^2	IV	D1
Leucovorin	200 mg/m^2	Civi 46-48 hours	D1,2
Fluorouracil (5-FU)	2600 mg/m^2	civi 46-48 hours	D1,2
Q2w(4 cycles preoperative and 4 cycles postoperative)			

Al-Batran S-E, Hartmann JT, Probst S, et al. Phase III trial in metastatic gastroesophageal adenocarcinoma with fluorouracil, leucovorin plus either oxaliplatin or cisplatin: a study of the Arbeitsgemeinschaft Internistische Onkologie. J Clin Oncol 2008;26:1435-1442.

FLOT

Fluorouracil (5-FU)	2600 mg/m^2	civi	46-48 hours	D1,2
Leucovorin	200 mg/m^2	civi	46-48 hours	D1
Oxaliplatin	85 mg/m^2	IV		D1
Docetaxel	30 mg/m^2	IV		D1
Q2w (4 cycles preoperative and 4 cycles postoperative)				

Al-Batran S-E, Homann N, Pauligk C, et al. Perioperative chemotherapy with fluorouracil plus leucovorin, oxaliplatin, and docetaxel versus fluorouracil or capecitabine plus cisplatin and epirubicin for locally advanced, resectable gastric or gastrooesophageal junction adenocarcinoma (FLOG4): a randomised, phase 2/3 trial. Lancet 2019;393:1948-1957.

Cisplatin + Fluorouracil (5-FU)

Cisplatin	80 mg/m^2	IV	D1
Fluorouracil (5-FU)	800 - 1000 mg/m^2 /cl	civi	D1-4
Q4w total 6 cycles (2-3 cycles before operation)			

Preoperative chemotherapy definitive chemoradiation (for locally advanced cancer)

Paclitaxel + Carboplatin

Paclitaxel	50 mg/m^2	IV	D1
Carboplatin	AUC 2	IV	D1
Weekly for 5 weeks			

van Hagen P, Hulshof MC, van Lanschot JJ, et al. Preoperative chemoradiotherapy for esophageal or junctiona l cancer. N Engl J Med 2012;366:2074-2084.

PF

Cisplatin	60 - 80 mg/m^2	IV	D1
Fluorouracil (5-FU)	800 mg/m^2 /d	civi	D1-4
Q4w x 2 cycles with radiation followed by 2 cycles without radiation			

Minsky BD, Pajak TF, Ginsberg RJ, et al. INT 0123 (Radiation Therapy Oncology Group 94-05) phase III trial of combinedmodality therapy for esophageal cancer: high-dose versus standard-dose radiation therapy. J Clin Oncol 2002;20:1167-1174.

Bi-weekly PF

Cisplatin	40 - 50 mg/m^2	IV		D1
Fluorouracil (5-FU)	1200 - 1600 mg/m^2	civi	46-48 hours	D1, 2
Q2W-3-4 cycles				

Bi-weekly PFL

Cisplatin	40 - 50 mg/m^2	IV		D1
Leucovorin	200mg/m^2	civi	46-48 hours	D1
Fluorouracil (5-FU)	1200 - 1600 mg/m^2	civi	46-48 hours	D1
Q2W 3-4 cycles				

Cisplatin +/- Capecitabine (UFUR)

Cisplatin	25 - 30 mg/m^2	IV		D1
Capecitabine	800 mg/m^2	PO	BID	D1-5
UFUR	200 - 250mg/m^2/day	PO	BID	D1-5
Qw x 12 cycles				

Lee SS, Kim SB, Park SI, et al. Capecitabine and cisplatin chemotherapy (XP) alone or sequentially combined chemoradiotherapy containing XP regimen in patients with three different settings of stage IV esophageal cancer.
Jpn J Clin Oncol 2007;37:829-835.

Chemotherapy for stage IV cancer

Cisplatin + Fluorouracil (5-FU)

Cisplatin	80 mg/m^2	IV	D1
Fluorouracil (5-FU)	800 - 1000 mg/m^2 /d	civi	D1-4
Q4w total 3-6 cycles			

Lorenzen S, Schuster T, Porschen R, et al. Cetuximab plus cisplatin-5-fluorouracil versus cisplatin -5-fluorouracil alone in first-line metastatic squamous cell carcinoma of the esophagus: a randomized phase II study of the Arbeitsgemeinschaft Internistische Onkologie. Ann Oncol 2009;20:1667-1673.

PFL

Cisplatin	40 - 50 mg/m^2	IV		D1
Leucovorin	200 mg/m^2	civi	46-48 hours	D1,2
Fluorouracil (5-FU)	1600-2000 mg/m^2	civi	46-48 hours	D1,2
Q2W x 12 cycles				

Hung TC et al. Weekly 24-hour infusional 5-fluorouracil as initial treatment for advanced gastric cancer with acute disseminated intravascular coagulation. Anticancer Res 2008;28:1293.

Docetaxel

Docetaxel	30 - 35 mg/m^2	IV	D1, 8	Q3w
OR				
Docetaxel	22 - 25 mg/m^2	IV	D1, 8, 15	Q4w

Albertsson M et al. Phase II studies on docetaxel alone every third week, or weekly in combination with gemcitabine in patients with primary locally advanced, metastatic, or recurrent esophageal cancer. Med Oncol 2007;24:407.

Paclitaxel

Paclitaxel	60 - 80 mg/m^2	IV	D1, 8, 15
Q4w total 3-6 cycles			

Ilson DH et al. Paclitaxel given by a weekly 1-h infusion in advanced esophageal cancer. Ann Oncol 2007;18:898.

Paclitaxel + Cisplatin

Paclitaxel	60 - 80 mg/m^2	IV	D1, 8, 15
Cisplatin	70 - 80 mg/m^2	IV	D1
Q4w x 3 -6 cycles			

1. Kornek, GV et al. Effective combination chemotherapy with paclitaxel and cisplatin with or without human granulocyte colony-stimulating factor and/or erythropoietin in patients with advanced gastric cancer . Br J Cancer 2002; 86:1858.
2. Ilson DH et al. Paclitaxel given by a weekly 1-h infusion in advanced esophageal cancer. Ann Oncol 2007;18:898.

S-1 (TS-1)

Tegafur/potassium oxonate/gimeracil	BSA < 1.25	40 mg	BID
	BSA 1.25 - 1.5	50 mg	BID
	BSA ≧1.5	60 mg	BID
4 weeks on, 2 weeks off (or 2 weeks on, 1 weeks off), 1 year			

Sakuramoto S, et al. Adjuvant chemotherapy for gastric cancer with S-1, an oral fluoropyrimidine. N Engl JMed. 2007;357:1810. S-1 Monotherapy as Second- or Third-Line Chemotherapy for Unresectable and Recurrent Esophageal Squamous Cell Carcinoma Akutsu Y. · Kono T. · Uesato M. · Hoshino I. · Narushima K. · Hanaoka T. · Tochigi T. · Semba Y. Qin W. ·Matsubara H. Departmen t of Frontier Surgery, Graduate School of Medicine, Chiba University, Chiba, Japan

Pembrolizumab

(for second-line therapy for esophageal squamous cell carcinoma, esophageal adenocarcinoma, and EGJ adenocarcinoma with PD-L1 expression levels by CPS of ≥10 or for third-line or subsequent therapy for esophageal and EGJ adenocarcinoma with PD-L1 expression levels by CPS of ≥1)

Pembrolizumab	200 mg	IV	D1
Cycled every 21 days			

1. Kojima T, Muro K, Francois E, et al. Pembrolizumab versus chemotherapy as second-line therapy for advanced esophageal cancer: phase III KEYNOTE-181 study. J Clin Oncol 2019;37:2.
2. Fuchs CS, Doi T, Jang RW, et al. Safety and efficacy of pembrolizumab monotherapy in patients with previously treated advanced gastric and gastroesophageal junction cancer: phase 2 clinica l KEYNOTE-059 trial. JAMA Oncol 2018;4:e180013.

Nivolumab+ipilimumab (for squamous cell carcinoma)[e,i]

Nivolumab	3 mg/kg	IV	every 2 weeks
Ipilimumab	1 mg/kg	IV	every 6 weeks
per study, maximum of 2 years			

Doki Y, Ajani JA, Kato K, et al. Nivolumab Combination Therapy in Advanced Esophageal Squamous -Cell Carcinoma.N Engl J Med 2022;386:449-462.

Postoperative adjuvant therapy

Nivolumab

Nivolumab	240 mg	IV	every 14 days for 16 weeks
followed by Nivolumab 480 mg every 28 days Maximum treatment duration of 1 year			
自費 3mg/kg IV			

Kelly R, Ajani J, Kuzdzal J, et al. Adjuvant nivolumab in resected esophageal or gastroesophageal junction cancer following neoadjuvant chemoradiation therapy: first results of the CheckMate 577 study. [abstract]. Presented at the Oral Presentation presented at the ESMO 2020 Annual Meeting; September 19-21, 2020; Virtual Meeting.

• or complete preoperative chemotherapy course

胃癌

Adjuvant chemotherapy

Cisplatin + Capecitabine

Cisplatin	60 – 70 mg/m2 iv	d1
Capecitabine	1000 mg/m2 po bid	14 days
Q3w x 6 cycles		

Lee J et al. Phase III trial comparing capecitabine plus cisplatin versus capecitabine plus cisplatin with concurrent capecitabine radiotherapy in completely resected gastric cancer with D2 lymph node dissection: the ARTIST trial. J Clin Oncol. 2012;30:268.(stageII-III)

XELOX

Oxaliplatin	130 mg/m2 iv	d1
Capecitabine	1000 mg/m2 po bid	14 days
Q3w x 8 cycles		

or

Oxaliplatin	65 mg/m2 iv	d1, 8
Capecitabine	1000 mg/m2 po bid	14 days
Q3w x 8 cycles		

Bang YJ, et al. Adjuvant capecitabine and oxaliplatin for gastric cancer after D2 gastrectomy (CLASSIC): a phase 3 open-label, randomised controlled trial. Lancet 2012;379:315. (stage II-IIIB)

TS-1

Tegafur/potassium oxonate/gimeracil	BSA < 1.25	40mg bid
	BSA 1.25 - 1.5	50mg bid
	BSA ≧1.5	60mg bid
4 weeks on/2 weeks off (or 2 weeks on/1 weeks off), 1 year		

Sakuramoto S, et al. Adjuvant chemotherapy for gastric cancer with S-1, an oral fluoropyrimidine. N Engl J Med. 2007;357:1810.Tegafur/gimeracil/oteracil 複方製劑(如 TS-1）(105/12/1)：
(1)胃癌術後輔助性化療，用於罹患 TNM StageII (排除 T1) 、IIIA 或IIIB 胃癌且接受過胃癌根除性手術的成年患者，限用 1 年。(2)需經事前審查核准後使用。

TS-1+Docetaxel

TS-1 80mg/㎡ on Day1-14 cycle 1 (3weeks)
Docetaxe 40mg/㎡ on Day 1 and TS-1 Day1-14 cycle 2-7(every 3weeks)
TS-1 80mg/㎡ on Day1-28 cycle≧8 (3weeks)
3 weeks on/ 1 weeks off

Yoshida, K., Kodera, Y., Kochi, M., Ichikawa, W., Kakeji, Y., Sano, T., ... & Kaji, M. (2019). Addition of Docetaxel to Oral Fluoropyrimidine Improves Efficacy in Patients With Stage III Gastric Cancer: Interim Analysis of JACCRO GC-07, a Randomized Controlled Trial. Journal of Clinical Oncology,37(15), 1296-1304.註:適用晚期胃腺癌患者，包括胃食道接合處之腺癌

Fluorouracil, leucovorin, oxaliplatin, and docetaxel (FLOT)

Fluorouracil 2600 mg/m2 IV continuous infusion over 24 hours on Day 1 Leucovorin 200 mg/m2 IV on Day 1 Oxaliplatin 85 mg/m2 IV on Day 1 Docetaxel 50 mg/m2 IV on Day 1 Cycled every 14 days1
4 cycles preoperative and 4 cycles postoperative

5-FU + LV

5-FU	425 mg/m2/d iv	d1-5
Leucovorin	20 mg/m2/d iv	d1-5
One month later		
5-FU	400 mg/m2/d	d1-4 and last 3 days of RT
Leucovorin	20 mg/m2/d iv	d1-4 and last 3 days of RT
One month after completion of RT		
5-FU	425 mg/m2/d iv	d1-5 q4w x 2 cycles
Leucovorin	20 mg/m2/d iv	d1-5 q4w x 2 cycles

Macdonald, JS et al. Chemoradiotherapy after surgery compared with surgery alone for adenocarcinoma of the stomach or gastroesophageal junction. N Engl J Med 2001; 345:725.

Chemotherapy for locally advanced unresectable and metastatic cancer

Modified FOLFOX at CSMUH

Oxaliplatin	85 mg/m2 iv	d1
Leucovorin	150 - 200 mg/m2 civi 46-48 hours	d1
5-FU	2400 - 3000 mg/m2 civi 46-48 hours	d1
Q2w x 6 – 12 cycles		

P. C. Enzinger, et al. CALGB 80403/ECOG 1206: A randomized phase II study of three standard chemotherapy regimens (ECF, IC, FOLFOX) plus cetuximab in metastatic esophageal and GE junction cancer. J Clin Oncol 2010;28:15s.

XELOX

Oxaliplatin	130 mg/m2 iv	d1
Capecitabine	1000 mg/m2 po bid	14 days
Q3w x 4 -6 cycles		

or

Oxaliplatin	65 mg/m2 iv	d1, 8
Capecitabine	1000 mg/m2 po bid	14 days
Q3w x 4 -6 cycles		

Kim GM, et al. A randomized phase II trial of S-1-oxaliplatin versus capecitabine-oxaliplatin in advanced gastric cancer. Eur J Cancer 2012;48:518.

or

Oxaliplatin	85 mg/m2 iv	d1,
Capecitabine	1000 mg/m2 po bid	14 days
Q2w x 4 -6 cycles		

Yung-Chia Kou, et al.Modified Biweekly Oxaliplatin and Capecitabine for Advanced Gastric Cancer: A Retrospective Analysis from A Medical Center2014;37:141-146. (stage II-IV)

Cisplatin + 5-FU

Cisplatin	75 - 100 mg/m2 iv	d1
5-FU	750 - 1000 mg/m2/d civi	d1-4
Q4w x 3 -6 cycles		

Lorenzen S, et al. Cetuximab plus cisplatin-5-fluorouracil versus cisplatin-5-fluorouracil alone in first-line metastatic squamous cell carcinoma of the esophagus: a randomized phase II study of the Arbeitsgemeinschaft Internistische Onkologie. Ann Oncol. 2009;20:1667.

PFL

Cisplatin	50 mg/m2 iv		d1
5-FU	2400 - 3000 mg/m2/d civi 4	6hr	d1
Leucovorin	200 mg/m2/d civi	46hr	d1
Q2w x 6-12 cycles			

Al-Batran SE et al. Phase III trial of metastatic gastroesophageal adenocarcinoma with fluorouracil, leucovorin plus either oxaliplatin or cisplatin: a study of the Arbeitsgemeinschaft Internistische Onkologie. J Clin Oncol 2008; 26:1435

P-PFL

Cisplatin	25-30 mg/m2 iv		d1, 8, 15
5-FU	2000 - 2600 mg/m2/d civi	24hr	d1, 8, 15
Leucovorin	200 mg/m2/d civi	24hr	d1, 8, 15
Q4w x 3-6 cycles			

Hung TC et al. Weekly 24-hour infusional 5-fluorouracil as initial treatment for advanced gastric cancer with acute disseminated intravascular coagulation. Anticancer Res 2008;28:1293.

Docetaxel +/- Cisplatin

Cisplatin	75 mg/m2 iv	d1
Docetaxel	66-75 mg/m2 iv	d1
Q3w		

Roth AD et al. Docetaxel, cisplatin; and fluorouracil; docetaxel and cisplatin; and epirubicin, cisplatin, and fluorouracil as systemic treatment for advanced gastric carcinoma: a randomized phase II trial of the Swiss Group for Clinical Cancer Research. J Clin Oncol 2007; 25:3217.

Add TS1 +/- Cisplatin in stage IV irinotecan in patients with previously untreated metastatic gastric cancer: a Federation Francophone de Cancerologie Digestive Group Study--FFCD 9803. J Clin Oncol 2004; 22:4319

Gemcitabine+Oxaliplatin+5FU+LV

Gemcitabine	1000mg/m2 iv		d1
Oxaliplatin	85mg/m2 iv	4-6hrs	d2
5FU	400mg/m2 iv	22hrs	d1 d2
LV	100 mg/m2		d1 d2
Q2W			

Fulfaro Fet al.Gemcitabine (GEM) plus oxaliplatin, folinic acid, and 5-fluorouracil (FOLFOX-4) in patients with advanced gastric cancer.Cancer Chemother Pharmacol. 2005 Dec;56(6):563-8. Epub 2005 Jul 23.

Target therapy for locally advanced unresectable and metastatic cancer

Trastuzumab + Chemotherapy(in Her-2 positive)

Trastuzumab 8 mg/kg iv over 90 min first wk followed by 6 mg/kg iv over 30 min q3w
Trastuzumab 6 mg/kg iv over 90 min first wk followed by 4 mg/kg iv over 30 min q2w

Bang YJ et al. Trastuzumab in combination with chemotherapy versus chemotherapy alone for treatment of HER2-positive advanced gastric or gastro-oesophageal junction cancer (ToGA): a phase 3, open-label, randomised controlled trial. Lancet 2010;376:687.

Gastric cancer stage IV dependent on prior therapy and patient performance status

Irinotecan

Irinotecan	150-180 mg/m2 iv	d1
Q2w		

Hironaka S et al. Randomized, open label, phase III study comparing irinotecan with paclitaxel in patients with advanced gastric cancer without severe peritoneal metastasis after failure of prior combination chemotherapy using fluoropyrimidine plus platinum: WJOG 4007 truak, J Clin Oncol 2013;31: 4438-4444.

Paclitaxel

Paclitaxel	60-80 mg/m2 iv	d1, 8, 15
Q4w		

Ilson DH et al. Paclitaxel given by a weekly 1 h infusion in advanced esophageal cancer. Ann Oncol 2007 :18:898.

Ramucirumab +/- Paclitaxel

Ramucirumab	8 mg/kg iv	d1, 15
Paclitaxel	60-80 mg/m2 iv	d1, 8, 15
Q4w		

Whike H et al. Ramucirumab plus paclitaxel versus placebo plus paclitaxel in patients with previously treated advanced gastric or gastro-eosophageal junction adenocarcinoma: a double-blind, randomized phase 3 trial. Lancet Oncol 2014; 15:1224-1235.

Docetaxel

Docetaxel	66- 75 mg/m2 iv	d1
Q3w		

Irinotecan + Cisplatin

Irinotecan	65 mg/m2 iv	d1, 8
Cisplatin	25-30 mg/m2	d1, 8
Q3w		

Modified FOLFIRI at CSMUH

Irinotecan	150-180 mg/m2 iv	d1
Leucovorin	150 - 200 mg/m2 civi 46-48 hours	d1
5-FU	2400 - 3000 mg/m2 civi 46-48 hours	d1
Q2w		

HIPEC(Hyperthermic Intraperitoneal Chemotherapy)

Cisplatin 120 mg+Mitomycin 30mg each in 6000 ml of normal saline at 40-43℃ for 60-90 min.
Peritoneal carcinomatosis from gastric cancer

Olivier Glehen et al. Peritoneal Carcinomatosis from Gastric Cancer:A Multi-Institutional Study of 159 Patients Treated by Cytoreductive Surgery Combined with Perioperative Intraperitoneal Chemotherapy (2010) 17:2370–2377Xiao-Jun Yang et al. Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy Improves Survival of Patients with PeritonealCarcinomatosis from Gastric Cancer: Final Results of a Phase III Randomized Clinical Trial (2011) 18:1575–1581

第三線化療藥物

藥名	給藥途徑	建議劑量	適用條件
Lonsurf (TAS-102)	口服	最大劑量不可超過 82mg/day	用於治療先前曾接受兩種 (含)以上治療（包括含 fluoropyrimidine–、platinum–、taxane–或 irinotecan 為基礎的化學療法，以及 HER2/neu 標靶治療[如果適合]）的轉移性胃腺癌或胃食道接合處腺癌病人。

備註:每天給藥兩次，在第 1~5 天與第 8~12 天，每 28 天為一個療程。

標靶藥物治療

藥名	給藥途徑	建議劑量	適用條件
Trastuzumab (Herceptin)	靜脈注射	4mg/Kg	轉移性胃癌(限 IV 劑型) trastuzumab 合併 capecitabine (或 5-fluorouracil)及 cisplatin 適用於未曾接受過化學治療之 HER2 過度表現(IHC3+或 FISH+)轉移性胃腺癌(或胃食道接合處腺癌)的治療。

免疫藥物治療

藥名	給藥途徑	建議劑量	適用條件
Pembrolizumab (Keytruda)	靜脈注射	200 mg/次/day 3週打一次	胃癌治療患有復發性局部晚期或轉移性胃腺癌或胃食道接合部腺癌，經確效性試驗檢測出腫瘤有 PD-L1 表現(綜合陽性分數 CPS≥1)，且先前曾在使用兩種(含)以上之療法(包括含有 fluoropyrimidine 及含鉑化學療法，以及 HER2/neu 標靶療法)治療時或治療後出現疾病惡化現象的病人。
Nivolumab	靜脈注射	3 mg/kg 2 週打一次	無法切除的晚期或復發性胃癌:用於治療先前經兩種或兩種以上化學治療的晚期或復發性胃癌或胃食道癌-TFDA

大腸癌

Adjuvant chemotherapy

Uracil-Tegafur

Uracil-Tegafur	250-300 mg/m2/day po
7 days/week x 24 weeks	

Lembersky BC et al. Oral uracil and tegafur plus leucovorin compared with intravenous fluorouracil and leucovorin in stage II and III carcinoma of the colon: results from national surgical adjuvant breast and bowel project protocol C-06. J Clin Oncol 2006; 24:2059

mFOLFOX

Leucovorin	200 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
Q2w x 12 cycles		

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
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

CAPOEX

Capecitabine	825mg/m2 po bid	d1-14
Oxaliplatin	50 mg/m2 iv	d1
Q2w		

Rodel C et al. Multicenter phase II trial of chemoradiation with oxaliplatin for rectal cancer. J Clin Onco l 2007; 25:110.

Chemotherapy for Advanced or Metastatic Disease

Modified FOLFOX (mFOLFOX)

Leucovorin	150 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
q2w		

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

FOLFOX + bevacizumab[5,d,cc]

Leucovorin	150 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
Bevacizumab	5 mg/kg IV	d1
q2w		

Emmanouilides C, Sfakiotaki G, Androulakis N, 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.

FOLFOX + panitumumab[6] (KRAS/NRAS/BRAF WT only)

Leucovorin	150 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
Panitumumab	6 mg/kg IV over 60 minutes	d1
q2w		

Douillard JY, Siena S, Cassidy J, 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.

FOLFOX + cetuximab[7] (*KRAS/NRAS/BRAF* WT only)

Leucovorin	150 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
Cetuximab	400 mg/m2 IV over 2 hours first infusion then 250 mg/m2 IV over 60 minutes weekly	
Cetuximab	500 mg/m2 IV over 2 hours	d1
q2w		

Venook AP, Niedzwiecki D, Lenz HJ, 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 + bevacizumab[8,d,cc]

Capecitabine	1000mg/m2 po bid	d1-14
Oxaliplatin	85 mg/m2 iv	d1
Bevacizumab	5 mg/kg IV	d1
By weekly		

Saltz LB, Clarke S, Diaz-Rubio E, 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.

FOLFIRI + bevacizumab[11,d,cc]

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Bevacizumab	5 mg/kg IV	d1
q2w		

Heinemann V, von Weikersthal LF, Decker T, et al. FOLFIRI plus cetuximab versus 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.

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

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Cetuximab	400 mg/m2 IV over 2 hours first infusion then 250 mg/m2 IV over 60 minutes weekly	
Cetuximab	500 mg/m2 IV over 2 hours	d1
q2w		

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

FOLFIRI + panitumumab[14] (KRAS/NRAS/BRAF WT only)

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Panitumumab	6 mg/kg IV over 60 minutesCetuximab	d1
q2w		

Peeters M, Price TJ, Cervantes A, 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.

FOLFIRI+ ziv-aflibercept[15]

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Ziv-aflibercept	4 mg/kg IV over 60 minutes	d1
q2w		

Van Cutsem E, Tabernero J, Lakomy R, et al. Addition of aflibercept to fluorouracil, leucovorin, and irinotecan improves survival in a phase III randomized trial in patients with metastatic colorectal cancer previously treated with an oxaliplatin- based regimen. J Clin Oncol 2012;30:3499-3506.

FOLFIRI+ ramucirumab[16]

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Ramucirumab	8 mg/kg IV over 60 minutes	d1
q2w		

Tabernero J, Yoshino T, Cohn AL, et al. Ramucirumab versus placebo in combination with second-lin e 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.

Modified FOLFIRI

Leucovorin	150 mg/m2 iv over 46 hrs	d1
5-FU	2400 - 3000 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
q2w		

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.Van Cutsem E et al. Randomized phase III study of irinotecan and 5-FU/FA with or without etuximab inthe first-line treatment of patients with metastatic colorectal cancer (mCRC): The CRYSTAL trial. 2007 ASCO annual meeting. Abstract 4000.

Capecitabine

Capecitabine	850-1250 mg/m2 po bid	14 days
q3w till disease progression		

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[23,d,cc]

Capecitabine	850-1250 mg/m2 po bid	14 days
Bevacizumab	7.5 mg/kg IV	d1
q3w till disease progression		

Cunningham D, Lang I, Marcuello E, 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

Irinotecan	180 mg/m2 IV over 30–90 minutes	d1
q2w		

Cunningham D, Pyrhonen S, James R, 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.

Cetuximab[13]

Cetuximab	500 mg/m^2 IV over 2 hours	d1
q2w		

Martín-Martorell P, Roselló S, Rodríguez-Braun E, 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.

Irinotecan+ panitumumab[14,27] (KRAS/NRAS/BRAF WT only)

Irinotecan	180 mg/m2 IV over 30–90 minutes	d1
Panitumumab	6 mg/kg IV over 60 minutes	d1
q2w		

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

Andre T, Blons H, Mabro M, 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.

Irinotecan+ bevacizumab[28,d,cc]

Irinotecan	180 mg/m2 IV over 30–90 minutes	d1
Bevacizumab	5 mg/kg IV	d1
q2w		

Yildiz R, Buyukberber S, Uner A, 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+ ramucirumab[16]

Irinotecan	180 mg/m2 IV over 30–90 minutes	d1
Ramucirumab	8 mg/kg IV over 60 minutes	d1
q2w		

Tabernero J, Yoshino T, Cohn AL, 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+ ziv-aflibercept

Irinotecan	180 mg/m2 IV over 30–90 minutes	d1
Ziv-aflibercept	4 mg/kg IV	d1
q2w		

Regorafenib

Regorafenib	160 mg PO daily
days 1–21	

Grothey A, Van Cutsem E, Sobrero 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.

Trifluridine + tipiracil[32]

Trifluridine + tipiracil	35 mg/m2 -80mg/m2 po twice daily days 1–5 and 8–12
every 28 days	

Mayer RJ, Van Cutsem E, Falcone A, et al. Randomized Trial of TAS-102 for Refractory Metastatic Colorectal Cancer (RECOURSE). N Engl J Med 2015;372:1909-19.

Trastuzumabdd + pertuzumab[36](HER2-amplified and RAS and BRAF WT)

Trastuzumab 8 mg/kg IV loading dose on day 1 of cycle 1, then 6 mg/kg IV every 21 days Pertuzumab 840 mg IV loading dose on day 1 of cycle 1, then 420 mg IV every 21 days
every 28 days

Meric-Bernstam F, Hurwitz H, Raghav KPS, 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.

Modified Uracil-Tegafur

Uracil-Tegafur	250 - 300 mg/m2/day
7 days/week	

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.

FOLFIRINOX

Irenotecan	160→mg/m2 60 min	d1
Oxaliplatin	65→ mg/m2 iv	d1
Leucovorin	400 mg/m2 iv over 46 hrs	d1
5-FU	2400→mg/m2 iv over 48hrs	d1
Q2w		

FOLFOXIRI plus bevacizumab versus FOLFIRI plis bevacizumab as first –line treatment of patients with metastatic colorectal cancer:updated overall survival and molecular subgroup analyses of the open-label, phase3 TRIBE study Chiara Cremolini et al Vol 16.october 2015;1308
註:依病人狀況調整劑量

FOLFIRINOX + bevacizumab[18,d,cc]

Irenotecan	160→mg/m2 60 min	d1
Oxaliplatin	65→ mg/m2 iv	d1
Leucovorin	400 mg/m2 iv over 46 hrs	d1
5-FU	2400→mg/m2 iv over 48hrs	d1
Bevacizumab	5 mg/kg IV	d1
Q2w		

Cremolini C, Loupakis F, Antoniotti 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.

FOLFIRINOX+ cetuximab (KRAS/NRAS/BRAF WT only)

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Cetuximab	400 mg/m2 IV over 2 hours first infusion then 250 mg/m2 IV over 60 minutes weekly	
Cetuximab	500 mg/m2 IV over 2 hours	d1
q2w		

Cremolini C, Antoniotti C, Lonardi S, et al. Activity and safety of cetuximab plus modified FOLFOXIRI followed by maintenance with cetuximab or bevacizumab for RAS and BRAF wild-type metastatic colorectal cancer: A randomized phase 2 clinical trial. JAMA Oncol 2018;4:529-536.

FOLFIRINOX + panitumumab[19] (KRAS/NRAS/BRAF WT only)

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then 2400 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
Panitumumab	6 mg/kg IV over 60 minutesCetuximab	d1
q2w		

Cremolini C, Antoniotti C, Lonardi S, et al. Activity and safety of cetuximab plus modified FOLFOXIRI followed by maintenance with cetuximab or bevacizumab for RAS and BRAF wild-type metastatic colorectal cancer: A randomized phase 2 clinical trial. JAMA Oncol 2018;4:529-536.

IROX

Oxaliplatin	85 mg/m2 IV	d1
irinotecan	200 mg/m2 over 30–90 minutes	d1
q3w		

Haller DG, Rothenberg ML, Wong AO, et al. Oxaliplatin plus irinotecan compared with irinotecan alone as second-line treatment after single agent fluoropyrimidine therapy for metastatic colorectal carcinoma . J Clin Oncol 2008;26:4544-4550.

IROX + bevacizumab[d]

Oxaliplatin	85 mg/m2 IV	d1
irinotecan	200 mg/m2 over 30–90 minutes	d1
Bevacizumab	5 mg/kg IV	d1
q3w		

Haller DG, Rothenberg ML, Wong AO, et al. Oxaliplatin plus irinotecan compared with irinotecan alone as second-line treatment after single agent fluoropyrimidine therapy for metastatic colorectal carcinoma. J Clin Oncol 2008;26:4544-4550.

Target therapy for Advanced or Metastatic Disease

Bevacizumab + chemotherapy

Bevacizumab	5 mg/kg iv	d1
q2w		

Phase II, randomized trial comparing bevacizumab plus fluorouracil (FU)/leucovorin (LV) with FU/LV alone in patients with metastatic colorectal cancer. J Clin Oncol 2003; 21:60

Saltz LB et al. Bevacizumab (Bev) in combination with XELOX or FOLFOX4: efficacy results from XELOX-1/No 16966, a randomized phase III trial in the first-line treatment of metastatic colorectal cancer (MCRC). 2007 Gastrointestinal Cancers Symposium. Abstract 238.

Giantonio, BJ et al. Bevacizumab in combination with oxaliplatin, fluorouracil, and leucovorin (FOLFOX4) for previously treated metastatic colorectal cancer: Results from the Eastern Cooperative Oncology Group Study E3200. J Clin Oncol 2007; 25:1539.

Hurwitz, H et al. Bevacizumab plus irinotecan, fluorouracil, and leucovorin for metastatic colorectal cancer. N Engl J Med 2004; 350:2335.

Cetuximab +/- chemotherapy (for patients with wild-type KRAS)

Cetuximab	400 mg/m2 iv d1, and then 500 mg/m2 iv over 1 hour
q2w	

Bokemeyer C et al. KRAS status and efficacy of first-line treatment of patients with metastatic colorecta l cancer (mCRC) with FOLFOX with or without cetuximab: the OPUS experience. 2008 ASCO annual meeting. Abstract 4000.
Van Cutsem E et al. KRAS status and efficacy in the first-line treatment of patients with metastatic colorectal cancer (mCRC) treated with or without cetuximab: the CRYSTAL experience. 2008 ASCO annual meeting. Abstract 2.
Jonker DJ et al. Cetuximab for the treatment of colorectal cancer. N Engl J Med 2007; 357-2040.
Sobrero AF et al. EPIC: phase III trial of cetuximab plus irinotecan after fluoropyrimidine and oxaliplatin failure in patients with metastatic colorectal cancer. J Clin Oncol 2008; 26:2311.

Target therapy(Optional)	STIVARGA (regorafenib) 400 mg/㎡ x4 po QD
	21 days/cycle

STIVARGA (regorafenib) tablets, oral. Wayne, N.J.:Bayer HealthCare Pharmaceuticals; 2018.

Encorafenib + cetuximab(BRAF V600E mutation positive)

Encorafenib	300mg/kg	daily
Cetuximab	400 mg/m2 IV followed by 250 mg/m2 IV	weekly
Cetuximab	500 mg/m2 IV	every 2 weeks

Van Cutsem E, Huijberts S, Grothey A, 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.Kopetz S, Grothey A, Yaeger R, et al. Encorafenib, Binimetinib, and Cetuximab in BRAF V600E-Mutated Colorectal Cancer. N Engl J Med. 2019;381:1632-1643.Kopetz S, Grothey A, Van Cutsem E, 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.

Encorafenib + panitumumab (BRAF V600E mutation positive)

Encorafenib	300mg/kg po	daily
Panitumumab	6 mg/kg IV	
q2W		

Kopetz S, Grothey A, Van Cutsem E, 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.

Sotorasib + cetuximab (KRAS G12C mutation positive)

Sotorasib	960 mg PO	daily
Cetuximab	500mg/m2 IV	
q2W		

Kuboki Y, Yaeger R, Fakih MG, 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.

Sotorasib + panitumumab (KRAS G12C mutation positive)

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

Target therapy +/- chemotherapy–

Target therapy(Optional)	ZALTRAP 4 mg/kg iv over 1 hour
	q2w

ZALTRAP® (ziv-aflibercept). Bridgewater, NJ:Regeneron Pharmaceuticals, Inc. / sanofi-aventis U.S. LLC; 2016.

TAS-102(Trifluridine+tipiracil) 20mg/tab(35 mg/㎡) (Optional)

1.建議劑量及療程: 每天給藥兩次，在第 1~5 天與第 8~12 天，每 28 天為一個療程。

2.最大劑量不可超過 82mg。

Bendell JC, Rosen LS, Mayer RJ, et al. Phase 1 study of oral TAS-102 in patients with refractory metastatic colorectal cancer. Cancer Chemother Pharmacol 2015;76:925-932

TS-1 (Tegafur) 20mg/cap(Optional)

1.建議劑量如下表格:

體表面積	早餐後 30 分鐘	晚餐後 30 分鐘	一天總劑量
<1.25 ㎡	服用 2 顆 20mg TS-1	服用 2 顆 20mg TS-1	80mg/天
1.25 ㎡~1.5 ㎡	服用 2 顆 25mg TS-1	服用 2 顆 25mg TS-1	100mg/天
1.5 ㎡	服用 3 顆 20mg TS-1	服用 3 顆 20mg TS-1	120mg/天

2.服藥週期:連續服用 28 天(4 周)，接著休息 14 天(2 周)。

3.TS-1 與 Irinotecan 合併使用於已使用含有 Oxaliplatin 化學療法失敗之轉移性大腸直腸癌患者。

4. TS-1與Irinotecan合併使用:Irinotecan的劑量為125mg/m2，靜脈輸注，每兩週給藥一次。TS-1的劑量根據病人體表面積，每天兩次，連續吃兩週，接著休息兩週，重複以上方式治療。

5.禁忌並用化療藥物(TS-1 不可與下列藥品併用)，如下:

藥品名稱
fluoropyrimidine 類抗惡性腫瘤劑
fluorouracil(5-FU)
tegafur/uracil(UFT)
tegafur(futraful)
doxifluridine(furtulon)
capecitabine(Xeloda)
carmofur(mifurol)
葉酸+tegafur-uracil 合併治療 (UZEL/UFT)
Levofolinate 與 fluorouracil 合併治療(Isovorin/5-FU)
fluoropyrimidine 類抗真菌劑
Flucytosine(ancotil)

Zaltrap(Aflibercept) 25mg/vail (Optional)

1.建議劑量及療程: 4 mg/kg 以靜脈輸注給藥，每 2 週一次，每次輸注時間超過 1 小時。

2.與 5-fluorouracil、leucovorin、irinotecan-(FOLFIRI) 合併使用，治療已使用含有 oxaliplatin 化學療法無效或惡化之轉移性大腸直腸癌病患。

ZALTRAP® (ziv-aflibercept). Bridgewater, NJ:Regeneron Pharmaceuticals, Inc. / sanofi-aventis U.S. LLC; 2016.

CYRAMZA(ramucirumab) (Optional)

1.建議劑量為 8mg/kg，每兩週靜脈輸住一次，每次輸注約 60 分鐘，在投予 FOLFIRI 之前。

CYRAMZA (ramucirumab) injection. Indianapolis, IN:Eli Lilly and Company; 2018.

Trastuzumab+ pertuzumab (HER2-amplified and RAS WT) (Optional)

Trastuzumab can be given after completion of chemotherapy as well, loading dose 8mg/kg . followed by 6mg/kg . iv q3w
Trastuzumab can be given after completion of chemotherapy as well . loading Dose 840mg , followed by 420mg . iv q3w

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

Trastuzumab can be given after completion of chemotherapy as well, loading dose 8mg/kg . followed by 6mg/kg . iv q3w
Lapatinib 1000mg PO daily.

Sartore-Bianchi A, Trusolino L, Martino C, et al. Dual-targeted therapy with trastuzumab and lapatinib in treatment-refractory, KRAScodon 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.

Immunotherapy (dMMR/MSI-H only)

Pembrolizumab (keytruda) (Optional)

1.建議劑量為 10mg/kg，每三週靜脈輸注一次。

KEYTRUDA® (pembrolizumab). Whitehouse Station,NJ: Merck & Co, Inc.; 2018.

OPDIVO (nivolumab) (Optional)

1. 建議劑量為 3mg/kg，每兩週靜脈輸注一次。

OPDIVO (nivolumab) injection. Princeton, NJ: Bristol-Myers Squibb Company; 2018.

OPDIVO (nivolumab) + Yervoy (ipilimumab) (Optional)

Nivolumab	3 mg/kg (30-minute IV infusion)	d1
Ipilimumab	1 mg/kg (30-minute IV infusion)	d1
q3w		

Overman MJ, Lonardi S, Wong K 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.

直腸癌

Neoadjuvant chemoradiation for rectal cancer

Capecitabine

Capecitabine	750 - 825 mg/m2 po bid
7 days/week	

Krishnan S et al. Phase II study of capecitabine (Xeloda) and concurrent boost radiotherapy in patients with locally advanced rectal cancer. Int J Radiat Oncol Bio Phy 2006; 66:762.

Uracil-tegafur (UFT)

Uracil-tegafur	250 - 300 mg/m2/day po
7 days/week	

C. H. Hsieh et al. Adjuvant CCRT for locally advanced rectal cancer: Uracil-tegafur? Or intravenous fluorouracil? J Clin Oncol 2006 ASCO Annual Meeting Proceedings; 24: 13584

XELOX

Capecitabine	825 mg/m2 po bid	d1-14
Oxaliplatin	50 mg/m2 iv	d1,14
Q2w		

Rodel C et al. Multicenter phase II trial of chemoradiation with oxaliplatin for rectal cancer. J Clin Oncol 2007; 25:110.

TagerOX

UFUR	250-300 mg/m2/day po bid	14 days
Oxaliplatin	130 mg/m2 iv	d1
Q3w x 8 cycles		

Adjuvant chemotherapy

Uracil-Tegafur (UFUR)

Uracil-Tegafur	250-300 mg/m2/day po bid
7 days/week x 1-2yrs	

Lembersky BC et al. Oral uracil and tegafur plus leucovorin compared with intravenous fluorouracil and leucovorin in stage II and III carcinoma of the colon: results from national surgical adjuvant breast and bowel project protocol C-06. J Clin Oncol 2006; 24:2059

Capecitabine

Capecitabine	1000 - 1250 mg/m2 po bid	d1-8
daily x 6mos		

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

Modified FOLFOX

Leucovorin	400 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
Q2w x 12 cycles		

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
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

TagerOX

UFUR	250-300 mg/m2/day po bid	14 days
Oxaliplatin	130 mg/m2 iv	d1
Q3w x 8 cycles		

CapeOX

Capecitabine	850 – 1000 mg/m2 po bid	14 days
Oxaliplatin	130 mg/m2 iv	d1
Q3w x 8 cycles		

Schmoll H 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; 25:102.

mHDFL

Leucovorin	400 mg/m2 iv 2 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Q2 w x 12 cycles		

A de Gramont, et al. Randomized trial comparing monthly low dose leucovorin and fluorouracil bolus with bimonthly high dose leucovorin and fluorouracil bolus plus continuous infusion for advanced colorectal cancer: a French intergroup study. J Clin Oncol 1997; 1:808.
McCleary NJ, et al. Impact of older age on the efficacy of newer adjuvant therapies in >12,500 patients (pts) with stage II/III colon cancer: Findings from the ACCENT Database. J Clin Oncol 2009; 27:15s.

Chemotherapy for stage IV cancer

Modified FOLFOX

Leucovorin	150 mg/m2 iv over 46 hrs	d1
5-FU	2400 -3000 mg/m2 iv over 46 hrs	d1
Oxaliplatin	85 mg/m2 iv	d1
q2w		

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

FOLFIRI

Leucovorin	400 mg/m2 iv over 2 hrs before 5-FU	d1
5-FU	400 mg/m2 iv bolus d1, and then	
	2400 - 3000 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
q2w		

Modified FOLFIRI

Leucovorin	400 mg/m2 iv over 46 hrs	d1
5-FU	2400 - 3000 mg/m2 iv over 46 hrs	d1
Irinotecan	150 - 180 mg/m2 iv	d1
q2w		

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.Van Cutsem E et al. Randomized phase III study of irinotecan and 5-FU/FA with or without cetuximab in the first-line treatment of patients with metastatic colorectal cancer (mCRC): The CRYSTAL trial. 2007 ASCO annual meeting. Abstract 4000.

CapeOX

Capecitabine	850 - 1000 mg/m2 po bid	d1-14
Oxaliplatin	50 - 70 mg/m2 iv	d1, 8
q3w		

Mayer RJ et al. Should capecitabine replace infusional fluorouracil and leucovorin when combined with oxaliplatin in metastatic colorectal cancer (Editorial). J Clin Oncol 2007; 25:4165.
Porschen R et al. Phase III study of capecitabine plus oxaliplatin compared with fluorouracil and leucovorinplus oxaliplatin in metastatic colorectal cancer: a final report of the AIO Colorectal Study Group. J Clin Oncol 2007; 25:4217.

Capecitabine

Capecitabine	1000-1250 mg/m2 po bid	14 days
q3w till disease progression		

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.

Modified Uracil-Tegafur

Uracil-Tegafur	250 - 300 mg/m2/day
7 days/week	

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.

Irinotecan

Irenotecan	125mg/m2	d1, 8
Q3w		

Fuchs CS et al. Phase III comparison of two irinotecan dosing regimens in second-line therapy of metastatic colorectal cancer. J Clin Oncol 2003; 21:807.

FOLFIRINOX

Irenotecan	150-165→mg/m2	60 min	d1
Oxaliplatin	85→ mg/m2 iv		d1
Leucovorin	200 mg/m2 iv over 46 hrs		d1
5-FU	3200→mg/m2 iv over 48hrs		d1
Q2w			

FOLFIRINOX is recommended instead of FOLFOXIRI because FOLFOXIRI uses a high dose of fluorouracil (3,200 mg/m² over 48 hours). Patients in the United States(U.S.) have been shown to have greater toxicity with fluorouracil. The dose of fluorouracil (2,400 mg/m² over 46 hours) is a starting dose consistent with the doserecommended in FOLFOX or FOLFIRI and should be strongly considered for U.S. patients.註:依病人狀況調整劑量

Modified FOLFIRINOX

Irenotecan	150mg/m2 30-90 min	d1
Oxaliplatin	85mg/m2 iv	d1
Leucovorin	400mg/m2 iv over 2hours	d1
5-FU	2400mg/m2 iv over 46-48hrs	d1
Q2w		

Bennouna J, Andre T, Campion L, et al. Rationale and design of the IROCAS study:multicenter, international, randomized phase 3 trial comparing adjuvant modified (m) FOLFIRINOX to mFOLFOX6 in patients withhigh-risk stage III (pT4 and/or N2) colon cancer-A UNICANCER GI-PRODIGE Trial. Clin Colorectal Cancer 2019;18:e69-e73.Lamarca A, Foster L, Valle J, et al. FOLFIRINOX or FOLFOXIRI in locally advanced duodenal adenocarcinoma: are we missing out? ESMO Open 2020;5:e000633.Broquet A, Bachet JB, Huguet F, et al. NORAD01-GRECCAR16 multicenter phase III non-inferiority randomized trial comparing preoperative modified FOLFIRINOX without irradiation to radiochemotherapy for resectable locally advanced rectal cancer (intergroup FRENCH-GRECCAR-PRODIGE trial). BMC Cancer 2020;20:485.

Target therapy for stage IV cancer

Bevacizumab + chemotherapy

Bevacizumab	5 mg/kg iv	d1
q2w		

Phase II, randomized trial comparing bevacizumab plus fluorouracil (FU)/leucovorin (LV) with FU/LV alone in patients with metastatic colorectal cancer. J Clin Oncol 2003; 21:60
Saltz LB et al. Bevacizumab (Bev) in combination with XELOX or FOLFOX4: efficacy results from XELOX-1/No 16966, a randomized phase III trial in the first-line treatment of metastatic colorectal cancer (MCRC). 2007 Gastrointestinal Cancers Symposium. Abstract 238. Giantonio, BJ et al. Bevacizumab in combination with oxaliplatin, fluorouracil, and leucovorin (FOLFOX4) for previously treated metastatic colorectal cancer: Results from the Eastern Cooperative Oncology Group Study E3200. J Clin Oncol 2007; 25:1539.Hurwitz, H et al. Bevacizumab plus irinotecan, fluorouracil, and leucovorin for metastatic colorectal cancer. N Engl J Med 2004; 350:2335.

Cetuximab +/- chemotherapy (for patients with wild-type KRAS)

Cetuximab	400 mg/m2 iv d1, and then 500 mg/m2 iv over 1 hour
q2w	

Bokemeyer C et al. KRAS status and efficacy of first-line treatment of patients with metastatic colorectal cancer (mCRC) with FOLFOX with or without cetuximab: the OPUS experience. 2008 ASCO annual meeting. Abstract 4000. Van Cutsem E et al. KRAS status and efficacy in the first-line treatment of patients with metastatic colorectal cancer (mCRC) treated with or without cetuximab: the CRYSTAL experience. 2008 ASCO annual meeting. Abstract 2. Jonker DJ et al. Cetuximab for the treatment of colorectal cancer. N Engl J Med 2007; 357-2040. Sobrero AF et al. EPIC: phase III trial of cetuximab plus irinotecan after fluoropyrimidine and oxaliplatin
failure in patients with metastatic colorectal cancer. J Clin Oncol 2008; 26:2311.

ZALTRAP +/- chemotherapy

Target therapy(Optional)自費 ZALTRAP	4 mg/kg iv over 1 hour
	q2w

Target therapy(Optional)	STIVARGA (regorafenib) 400 mg/㎡ x4 po QD
	21 days/cycle

Panitumumab(Vectibix) +/- chemotherapy (KRAS/NRAS/BRAF WT only)

Panitumumab	6 mg/kg IV over 60 minutes	d1
q2w		

1.建議劑量:6 mg/kg，每兩週一次。
2.與 FOLFOX 合併使用於治療 K-RAS 基因及 N-RAS 基因沒有突變之轉移性直腸結腸病患之第一線治療。
3.本藥品需事前審查核准後使用，每次申請事前審查之療程以 12 週為限，再次申請必須提出客觀證據(如:影像學)證實無惡化，才可繼續使用。
4.使用總療程以 24 週為上限。
5. Panitumumab(Vectibix)+ FOLFOX 與 ErbituxFOLFIRI 二者僅能擇依使用。微有再無法忍受化療(其副作用)時方可交換。

Nivolumab (dMMR/MSI-H only)

Nivolumab	3 mg/kg	d1
Nivolumab	240 mg iv	d1
Nivolumab	480 mg iv	d1
q2w		

Pfeiffer PP, Yilmaz M, Moller S, et al. TAS-102 with or without bevacizumab in patients with chemorefractory metastatic colorectal cancer: an investigator-initiated, open-label, randomised, phase 2 trial. Lancet Oncol 2020;21:412-420.

Nivolumab+ ipilimumab (dMMR/MSI-H only)

Nivolumab	3 mg/kg (30-minute IV infusion)	d1
Ipilimumab	1 mg/kg (30-minute IV infusion)	d1
q3w		

Overman MJ, Lonardi S, Wong K 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.

Pembrolizumab (dMMR/MSI-H only)

Pembrolizumab	2 mg/kg IV	every 3 weeks
Pembrolizumab	200 mg IV	every 3 weeks
Pembrolizumab	400 mg IV	every 6 weeks

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

Encorafenib + cetuximab(BRAF V600E mutation positive)

Encorafenib	300mg/kg	daily
Cetuximab	400 mg/m^2 IV followed by 250 mg/m^2 IV	weekly
Cetuximab	500 mg/m2 IV	every 2 weeks

Van Cutsem E, Huijberts S, Grothey A, 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.
Kopetz S, Grothey A, Yaeger R, et al. Encorafenib, Binimetinib, and Cetuximab in BRAF V600E-Mutated Colorectal Cancer. N Engl J Med. 2019;381:1632-1643.
Kopetz S, Grothey A, Van Cutsem E, et al. Quality of life with encorafenib plus cetuximab with or without t binimetinib treatment in patients with BRAF V600E-mutant metastatic colorectal cancer: patient-reported outcomes from BEACON CRC. ESMO Open 2022;7:100477.

Encorafenib + panitumumab (BRAF V600E mutation positive)

Encorafenib	300mg/kg po	daily
Panitumumab	6 mg/kg IV	
q2W		

Kopetz S, Grothey A, Van Cutsem E, 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.

Sotorasib + cetuximab (KRAS G12C mutation positive)

Sotorasib	960 mg PO	daily
Cetuximab	500mg/m2 IV	
q2W		

Kuboki Y, Yaeger R, Fakih MG, 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.

Sotorasib + panitumumab (KRAS G12C mutation positive)

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

肝癌

一、標靶藥物治療

藥名	使用順序	給藥途徑	建議劑量	適用條件
Sorafenib (Nexavar)	第一線	口服	400mg/day	(1)轉移性或無法手術切除且不適合局部治療或局部治療失敗之晚期肝細胞癌，並符合下列條件之一： A.肝外轉移（遠端轉移或肝外淋巴結侵犯）的 Child-Pugh A class 患者。 B.大血管侵犯（腫瘤侵犯主門靜脈或侵犯左/右靜脈第一分支）的 Child-Pugh A class 患者。 C.經導管動脈化學藥物栓塞治療（T.A.C.E.）失敗之晚期肝細胞癌的 Child-Pugh A class 患者，需提供患者於 12 個月內>=3 次局部治療之記錄。 (2)需經事前審查核准後使用，初次申請之療程以 3 個月為限，之後每 2 個月評估一次。送審時需檢送影像資料，無疾病惡化方可繼續使用。
Lenvatinib (Lenvima)	第一線	口服	12 mg/day	(1) 轉移性或無法手術切除且不適合局部治療或局部治療失敗之 Child-Pugh A 晚期肝細胞癌成人患者。 (2) 需經事前審查核准後使用，初次申請之療程以 3 個月為限，之後每 2 個月評估一次。送審時需檢送影像資料，無疾病惡化方可繼續使用。 (3) Lenvatinib 與 sorafenib 僅得擇一使用，不得互換；且 lenvatinib 治療失敗後， 不得申請使用 Stivarga 或 Opdivo。(109/1/1)
Bevacizumab (Avastin)	第一線	靜脈注射	500mg/次（每三週一次）	(1)未曾接受全身性療法且無法切除或是轉移肝細胞癌病人，且肝功能為 Child-Pugh A。 (2)建議與 Atezolizumab(Tecentriq)搭配使用。
Regorafenib（Stivarga）	第二線	口服	160 mg/day	(1)適用於曾接受 sorafenib 治療失敗後之轉移性或無法手術切除且不適合局部治療或局部治療失敗之 Child-Pugh A c lass 晚期肝細胞癌成人患者。 (2)需經事前審查核准後使用，初次申請之療程以 3 個月為限，之後每 2 個月評估一次。送審時需檢送影像資料，無疾病惡化方可繼續使用。
Cabometyx (Cabozantinib)	第二線	口服	60mg/day	(1)適用於曾接受 sorafenib 治療失敗後之轉移性或無法手術切除且不適合局部治療或局部治療失敗之 Child-Pugh A c lass 晚期肝細胞癌成人患者。 (2)Child-Pugh B 患者建議每日建議劑量為 40mg/day。

Ramucirumab (Cyramza)	第二線	靜脈注射	8 mg/kg（每三週一次）	(1) 單一療法適用於接受過 sorafenib 治療失敗後之轉移性或無法手術切除且不適合局部治療或局部治療失敗，且 AFP≥ 400ng/mL 之 Child-Pugh A class 晚期肝細胞癌成人患者。 (2) 需經事前審查核准後使用，初次申請之療程以 12 週為限，之後每 8 週評估一次。送審時需檢送影像資料，無疾病惡化方可繼續使用。 (3)Ramucirumab 與 regorafenib、nivolumab 僅能擇一使用，不得互換。

二、免疫治療

藥名	使用順序	給藥途徑	建議劑量	適用條件
Atezolizumab (Tecentriq)	第一線	靜脈注射	1200mg/次（每三週一次）	(1)未曾接受全身性療法且無法切除或是轉移肝細胞癌病人，肝功能為 Child-Pugh A。 (2)建議與 Bevacizumab 15mg/kg 搭配使用。
Imfinzi (Durvalumab)	第一線	靜脈注射	1200mg/次（每四週一次）	(1)未曾接受全身性療法且無法切除或是轉移肝細胞癌病人， 肝功能為 Child-Pugh A。
Nivolumab (OPDIVO)	第二線	靜脈注射	3 mg/kg（每二週一次）	(1)適用對象:晚期肝細胞癌。
Pembrolizumab (Keytruda)	第二線	靜脈注射	2 mg/kg（每三週一次）	(1)適用對象:晚期肝細胞癌。
Ipilimumab (Yervoy)	第二線	靜脈注射	3 mg/kg（每三週一次）	(1)晚期肝細胞癌，且肝功能為 Child-Pugh A。 (2)建議與 Nivolumab 3mg/kg 搭配使用。

胰臟癌
Adjuvant Therapy(First line)

mFOLFIRINOX (Unresetable)

Oxaliplatin 85 mg/m2 ,IV,2hrs	d1
Leucovorin400 mg/m2 ,IV,2hrs	d1
Irinotecan 150-180 mg/m2 ,IV,90mins	d1
5-FU 400 mg/m2 ,IV bolus	d1
5-FU 2400 mg/m2 ,IV,46hrs	2 weekly
Q2Wx6-12cycles (If clinical condition is indicated)	

Thierry Conroy et.al.N ENGL J MED 364;19 NEJM.ORG MAY 12, 2011;1817-1825

Gemcitabine + paclitaxel (Metastatic Disease)

Gemcitabine	1000 mg/m2IV	D1, 8, 15 every 4 weeks
Paclitaxel	125 mg/m2 IV	D1, 8, 15 every 4 weeks
Q4Wx3cycles(If clinical condition is indicated)		

N Engl J Med 2013; 369:1691-1703 Von Hoff et al. ASCO 2013.

Gemcitabine+Oxaliplatin+Leucovorin +5-FU

Gemcitabine	800 mg/m2IV
Oxaliplatin	85mg/m2 IV
Leucovorin	300mg/m2 IV
5-FU	3000mg/m2 IV
Q2W/4-6cycles	

Ch'ang HJ et.al Cancer Chemotherapy and Pharmacology2009;64:1173–1179

Gemcitabine + Cisplatin (Locally Advanced /Metastatic Disease)

Gemcitabine	1000mg/m2 IV	D1, 15
Cisplatin	50 mg/m2 IV	D1, 15
Q2w x 4-6cycles		

Volker Heinemann et al. Randomized Phase III Trial of Gemcitabine Plus Cisplatin Compared With Gemcitabine Alone in Advanced Pancreatic Cancer. J Clin Oncol 24:3946-3952; 2006.

S-1+ Gemcitabine+Oxaliplatin+Leucovorin

S-1	35mg/m2 PO	BID D1-7
Gemcitabine	800mg/m2IV	
Oxaliplatin	85mg/m2 IV	
Folinic acid	20mg/m2PO	BID D1-7
Q2W/4-6cycles		

Chiang NJ et.al.2016.TJCC

Gemcitabine +Erlotinib (Locally Advanced/Unresectable /Metastatic Disease)

Gemcitabine	1000mg/m2 IV 30min	D1, 8, 15, 22, 29, 36, 43days 1week off D1,8,15 days 4week cycles.
Erlotinib	100/150 mg PO	days
Q4w x3-6cycles		

Moore MJ, et al. J Clin Oncol. 2007;25:1960-1966

Gemcitabine (R0 resection or Unresetable)

Gemcitabine	1000mg/m2 IV	D1, 8, 15, days
Q28days x6cycles		

Moore MJ, et al. J Clin Oncol. 2007;25:1960-1966

S-1 (R0 resection or Unresetable)

S-1	80, 100, 120mg* d1-28 PO Repeated every 6 wks
Q42dx3-6cycles	

Ueno et al, J Clin Oncol. 2013 May 1;31(13):1640-8

Gemcitabine+ S-1 (Unresetable)

Gemcitabine	1000mg/m2 IV	30min	D 1, 8,
S-1	60, 80, 100mg	PO	D1-14
Q21d x3-6cycles			

Ueno et al, J Clin Oncol. 2013 May 1;31(13):1640-8

Second-line therapy (Locally Advanced/Unresectable/Metastatic Disease)

Onivyde+ Leucovorin+5-FU

Onivyde	60-80 mg/m2 IV	
Leucovorin	400 mg/m2 IV	
5-FU	2400 mg/m2 IV	46hrs
Q2w/cycles until progression		

LANCET 2015 v.387 n.10018 p.545-557

Immune therapy

藥名	給藥途徑	建議劑量	適用條件
Pembrolizumab (Keytruda)	靜脈注射	200 mg/次 3週打一次	For second-line therapy for locally advanced/unresectable/metastatic disease and good performance status, “pembrolizumab (Only for MSI-H or dMMR tumors)
Nivolumab	靜脈注射	3 mg/kg 2週打一次	For second-line therapy for locally advanced/unresectable/metastatic disease and good performance status,

肺癌

Neoadjuvant chemotherapy regimens

Neoadjuvant systemic therapy for patients not candidates for immune checkpoint Inhibitors

Preferred (non-squamous)

Cisplatin 75 mg/m2 day 1, pemetrexed 500 mg/m2 day 1 every 21 days for 4 cycles
Preferred (squamous)
Cisplatin 75 mg/m2 day 1, gemcitabine 1250 mg/m2 days 1 and 8, every 21 days for 4 cycles
Cisplatin 75 mg/m2 day 1, docetaxel 75 mg/m2 day 1 every 21 days for 4 cycles

Other Recommended

Cisplatin 50 mg/m2 days 1 and 8; vinorelbine 25 mg/m2 days 1, 8, 15, and 22, every 28 days for 4 cycles
Cisplatin 100 mg/m2 day 1, vinorelbine 30 mg/m2 days 1, 8, 15, and 22, every 28 days for 4 cycles
Cisplatin 75–80 mg/m2 day 1, vinorelbine 25–30 mg/m2 days 1 and 8, every 21 days for 4 cycles
Cisplatin 100 mg/m2 day 1, etoposide 100 mg/m2 days 1–3, every 28 days for 4 cycles

Useful in Certain Circumstances

Chemotherapy Regimens for Patients with Comorbidities or Patients Not Able to Tolerate Cisplatin
Carboplatin AUC 6 day 1, paclitaxel 200 mg/m2 day 1, every 21 days for 4 cycles
Carboplatin AUC 5 day 1, gemcitabine 1000 mg/m2 days 1 and 8, every 21 days for 4 cycles
Carboplatin AUC 5 day 1, pemetrexed 500 mg/m2 day 1 for non-squamous every 21 days for 4 cycles

All chemotherapy regimens listed above can be used for sequential chemotherapy/RT.

Neoadjuvant Systemic Therapy for Patients Candidates for Immune Checkpoint Inhibitors

Nivolumab 360 mg and platinum-doublet chemotherapy every 3 weeks for 4 cycles
Platinum-doublet chemotherapy options include:
Carboplatin AUC 5 or AUC 6 day 1, paclitaxel 175 mg/m² or 200 mg/m² day 1 (any histology)
Cisplatin 75 mg/m² day 1, pemetrexed 500 mg/m² day 1 (non-squamous)
Cisplatin 75 mg/m² day 1, gemcitabine 1000 mg/m² 1 and 8 and 15 or 1250 mg/m² days 1 and 8 (squamous histology)
Cisplatin 75 mg/m² day 1, paclitaxel 175 mg/m² or 200 mg/m² day 1 (any histology)

Neoadjuvant Chemotherapy with Immunotherapy

Nivolumab 360 mg + Platinum-based chemotherapy Every 3 weeks for up to 4 cycles Patients with resectable tumors ≥4 cm or node positive NSCLC; can be continued as a single-agent nivolumab as adjuvant therapy (NSCL 2024 11)
Pembrolizumab 200 mg + Cisplatin-based chemotherapy Every 3 weeks for 4 cycles Continued as single-agent pembrolizumab after surgery for patients without EGFR mutations or ALK rearrangements (NSCL 2024 11)
Durvalumab 1500 mg + Platinum-based chemotherapy Every 3 weeks for 4 cycles Continued as single-agent durvalumab as adjuvant treatment for patients with no known EGFR mutations or ALK rearrangements (NSCL 2024 11)

Adjuvant chemotherapy

Platinum-base doublet

Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) Day 1 or 15 and **Gemcitabine** 1000 mg/m^2 Day 1, 8, 15 IV Every 3 weeks for 4 cycles
Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) Day 1 or 15 and **Paclitaxel** 60-80 mg/m^2 Day 1, 8, 15 or **Paclitaxel** 160-225mg/m2 D1 IV **Every 3 weeks for 4 cycles**
Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) Day 1 or 8,(15) and **Vinorelbine** 20-30mg/m^2 Day 1, 8, (15) IV **Every 3 weeks for 4 cycles**
Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) Day 1 or 8,(15) and **Vinorelbine** 60-80mg/m^2 Day 1, 8, (15) PO **Every 3 weeks for 4 cycles**
Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) Day 1 or 8 and **Docetaxel** 25-35mg/m^2 Day 1,8 or **Docetaxel** 60mg/m^2 Day 1 IV **Every 3 weeks for 4 cycles**
Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) IV Day 1 or 15 and **Etoposide** 100mg/m^2 IV Day 1-3 or Day 1, 8, 15 **Every 3 weeks for 4 cycles**
Cisplatin 50-75mg/m^2 (adjusted by Ccr) or **Carboplatin** AUC: 3-6 (if Ccr <60ml/min or cisplatin not suitable) Day 1 and **Pemetrexed** (non-squamous)500mg/m^2 Day 1 IV Every 21days **for 4 cycles**
Ufur 300mg~600mg PO only for Adenocarcinoma (**T2** 且腫瘤≧**3cm**)。

※輔助化學治療藥物給予時，應依各藥物特性，配合病人狀況，例如：BSA、WBC 及特定之血液檢查值等，調整適當藥物劑量。

Concurrent Chemoradiation Regimens

Preferred (nonsquamous)

Carboplatin AUC 5 on day 1, pemetrexed 500 mg/m2 on day 1 every 21 days for 4 cycles; concurrent thoracic RT
Cisplatin 75 mg/m2 on day 1, pemetrexed 500 mg/m2 on day 1 every 21 days for 3 cycles; concurrent thoracic RT ± additional 4 cycles of pemetrexed 500 mg/m2
Paclitaxel 45–50 mg/m2 weekly; carboplatin AUC 2, concurrent thoracic RT ± additional 2 cycles every 21 days of paclitaxel 200 mg/m2 and carboplatin AUC 6
Cisplatin 50 mg/m2 on days 1, 8, 29, and 36; etoposide 50 mg/m2 days 1–5 and 29–33; concurrent thoracic RT

Preferred (squamous)

Paclitaxel 45–50 mg/m2 weekly; carboplatin AUC 2, concurrent thoracic RT ± additional 2 cycles every 21 days of paclitaxel 200 mg/m2 and carboplatin AUC 6
Cisplatin 50 mg/m2 on days 1, 8, 29, and 36; etoposide 50 mg/m2 days 1–5 and 29–33; concurrent thoracic RT

Consolidation Immunotherapy

for Patients with Unresectable Stage II/III NSCLC, PS 0–1, and No Disease Progression After Definitive Concurrent Chemoradiation

Durvalumab 10 mg/kg IV every 2 weeks or 1500 mg every 4 weeks for up to 12 months (patients with a body weight of ≥30 kg)(category 1 for stage III; category 2A for stage II)

Advanced stage chemotherapy

Gemcitabine/ Cisplatin or Carboplatin	Gemcitabine 1000 mg/m^2 IV Day 1, 8, 15
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) IV or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 or 15

Gemcitabine/ Cisplatin or Carboplatin	Gemcitabine 1000-1250 mg/m^2 IV Day 1, 8
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 or 8

Paclitaxel/ Cisplatin or Carboplatin	Paclitaxel 60-80 mg/m^2 IV Day 1, 8, 15 or Paclitaxel 160-225 mg/m^2 IV Day 1
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 or 15

Docetaxel/ Cisplatin or Carboplatin	Docetaxel 25-35 mg/m^2 IV Day 1,8
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 or 8

Docetaxel/ Cisplatin or Carboplatin	Docetaxel 60 mg/m^2 IV Day 1
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 (Three week cycle)

Vinorelbine/ Cisplatin or Carboplatin	Vinorelbine 60-80 mg/m^2 po Day 1, 8, 15
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 or 15

Etoposide/ Cisplatin or Carboplatin	Etoposide 100 mg/m^2 IV Day 1-3 or Day 1, 8, 15
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV Day 1 or 15

Pemetrexed/ Cisplatin or Carboplatin (nonsquamous)	Pemetrexed 500 mg/m^2 IV on a 21-Day cycle.
	Cisplatin 50-75 mg/m^2 (adjusted by Ccr) or
	Carboplatin AUC: 3-6 (if Ccr <60 ml/min or cisplatin not suitable) IV on a 21-Day cycle.

TS-1	80mg~120mg/天(adjusted by BSA) PO BID Day 1~28, 休息 14 天 or Day1~14, 休息 7 天。

Systemic therapy for advanced or metastatic disease

ADENOCARCINOMA, LARGE CELL, NSCLC NOS (PS 0–1)

(No contraindications to PD-1 or PD-L1 inhibitors)

Preferred

Pembrolizumab / Carboplatin / Pemetrexed (category 1)
Pembrolizumab / Cisplatin / Pemetrexed (category 1)

Other Recommended

Atezolizumab / platinum/ Paclitaxel / Bevacizumabe (category 1)
Atezolizumab / platinum / albumin-bound Paclitaxel
Nivolumab / Ipilimumab
Nivolumab/ipilimumab/pemetrexed/(carboplatin or cisplatin)

ADENOCARCINOMA, LARGE CELL, NSCLC NOS (PS 2)

Preferred

Carboplatin / Pemetrexed

Other Recommended

Carboplatin / albumin-bound Paclitaxel
Carboplatin / Docetaxel
Carboplatin / Etoposide
Carboplatin / Gemcitabine
Carboplatin / Paclitaxel

ADENOCARCINOMA, LARGE CELL, NSCLC NOS (PS 0–1)

(No contraindications to PD-1 or PD-L1 inhibitors)

Preferred

Pembrolizumab / Carboplatin / Pemetrexed (category 1)
Pembrolizumab / Cisplatin / Pemetrexed (category 1)

Other Recommended

Atezolizumab / platinum/ Paclitaxel / Bevacizumabe (category 1)
Atezolizumab / platinum / albumin-bound Paclitaxel
Nivolumab / Ipilimumab
Nivolumab/ipilimumab/pemetrexed/(carboplatin or cisplatin)

ADENOCARCINOMA, LARGE CELL, NSCLC NOS (PS 2)

Preferred

Carboplatin / Pemetrexed

Other Recommended

Carboplatin / albumin-bound Paclitaxel
Carboplatin / Docetaxel
Carboplatin / Etoposide
Carboplatin / Gemcitabine
Carboplatin / Paclitaxel

SQUAMOUS CELL CARCINOMA (PS 0–1)

(No contraindications to PD-1 or PD-L1 inhibitors)

Preferred

Pembrolizumab / Carboplatin / Paclitaxel (category 1)
Pembrolizumab / Carboplatin / albumin-bound Paclitaxel (category 1)

Other recommended

Nivolumab / Ipilimumab
Nivolumab / Ipilimumab / Paclitaxel / Carboplatin (category 1)

SQUAMOUS CELL CARCINOMA (PS 2)

Preferred

Carboplatin / albumin-bound Paclitaxel
Carboplatin / Gemcitabine
Carboplatin / Paclitaxel

Other Recommended

Carboplatin / Docetaxel
Carboplatin / Etoposide

Useful in Certain Circumstances

Albumin-bound paclitaxel
Docetaxel
Gemcitabine
Paclitaxel

Contraindications to PD-1 or PD-L1 inhibitors

Useful in Certain Circumstances

Carboplatin / albumin-bound Paclitaxel (category 1)
Carboplatin / Docetaxel (category 1)
Carboplatin / Gemcitabine (category 1)
Carboplatin / Paclitaxel (category 1)
Cisplatin / Docetaxel (category 1)
Cisplatin / Etoposide (category 1)
Cisplatin / Gemcitabine (category 1)
Cisplatin / Paclitaxel (category 1)
Gemcitabine / Docetaxel (category 1)
Gemcitabine / Vinorelbine (category 1)

SYSTEMIC THERAPY FOR ADVANCED OR METASTATIC DISEASE – SUBSEQUENT

ADENOCARCINOMA, LARGE CELL, NSCLC NOS (PS 0–2)

Preferred (no previous IO):

Systemic immune checkpoint inhibitors
Nivolumab 360 mg Every 3 weeks for up to 4 cycles (category 1)
Pembrolizumab 200 mg Every 3 weeks for up to 4 cycles (category 1)
Atezolizumab 1200 mg Every 3 weeks for up to 4 cycles (category 1)

Other Recommended (no previous IO or previous IO):

Docetaxel
Pemetrexed
Gemcitabine
Ramucirumab/docetaxel
Albumin-bound paclitaxel

SQUAMOUS CELL CARCINOMA (PS 0–2)

Preferred (no previous IO):

Systemic immune checkpoint inhibitorse

Nivolumab 360 mg Every 3 weeks for up to 4 cycles (category 1)
Pembrolizumab 200 mg Every 3 weeks for up to 4 cycles (category 1)
Atezolizumab 1200 mg Every 3 weeks for up to 4 cycles (category 1)

Other Recommended (no previous IO or previous IO):

Docetaxel
Gemcitabine
Ramucirumab/docetaxel
Albumin-bound paclitaxel

乳癌

Neoadjuvant /Adjuvant chemotherapy

AC

Doxorubicin	60 mg/m^2 iv	d1
Cyclophosphamide	600 mg/m^2 iv	d1
Q3w x 4 cycles or Q2W x 4 cycles (with GCSF support)		

Muss HB et al. Standard chemotherapy (CMF or AC) versus capecitabine in early-stage breast cancer (BC) patients agec 65 or older: results of CALGB/CTSU 49907. 2008 ASCO annual meeting. Abstract 507 .
Fisher, B et al. Treatment of axillary lymph node-negative, estrogen receptor-negative breast cancer: updated findings from National Surgical Adjuvant Breast and Bowel Project clinical trials. J Natl Cancer Inst 2004; 96:1823 .

EC

Epirubicin	75 - 100 mg/m^2 iv	d1
Cyclophosphamide	600 mg/m^2 iv	d1
Q3w x 4 cycles or Q2W x 4-6 cycles (with GCSF support)		

Piccart MJ et al. Phase III trial comparing two dose levels of epirubicin combined with cyclophosphamide with cyclophosphamide, methotrexate, and fluorouracil in node-positive breast cancer. . J Clin Oncol 2001; 19:3103.

LC(Liposomal doxorubicin-optional)

Liposmal doxorubicin	35- 50 mg/m^2 iv	d1
Cyclophosphamide	600 mg/m^2 iv	d1
Q3w x 4 cycles or Q4w x 4 cycles		

Pegylated Liposomal Doxorubicin as Adjuvant Therapy for Stage I-III Operable Breast Cancer.Lu YC, Ou-Yang FU, Hsieh CM, Chang KJ, Chen DR, Tu CW, Wang HC, Hou MF.In Vivo. 2016 Mar-Apr;30(2):159-63.
健保規範:Doxorubicin hydrochloride liposome injection(如 Lipo-Dox、Caelyx)：用於單一治療有心臟疾病風險考量之轉移性乳癌患者。(93/11/1)

TC

Docetaxel	60 - 100 mg/m^2 iv	d1
Cyclophosphamide	600 mg/m^2 iv	d1
Q3w x 4 cycles or Q2W x 4 cycles (with GCSF support)		

Jones SE et al. Phase III trial comparing doxorubicin plus cyclophosphamide with docetaxel plus cyclophosphamide as adjuvant therapy for operable breast cancer. J Clin Oncol 2006; 24:5381.
健保規範: Docetaxel 1.局部晚期或轉移性乳癌。2.與 anthracycline 合併使用於腋下淋巴結轉移之早期乳癌之術後輔助性化學治療。(99/6/1)3.早期乳癌手術後，經診斷為三陰性反應且無淋巴轉移的病人，得作為與 cyclophosphamide 併用 doxorubicin 的化學輔助療法
4.除以上條件，其餘皆自費。

Docetaxel+ Cisplatin

Docetaxel	60 - 75mg/m^2 iv	day1
Cisplatin	60- 75 mg/m^2 iv	day1
Q3w x 4 cycles or Q2W x 4 cycles (with GCSF support)		

A randomized phase II trial of platinum salts in basal-like breast cancer patients in the neoadjuvant setting . Results from the GEICAM/2006-03, multicenter study. (Abstract in PubMed)Breast Cancer Res Treat (2012) 136:487–493

CMF po

Cyclophosphamide	100 mg/m^2 /d po	day1-14
Methotrexate	40 mg/m^2 iv	day1, 8
5- FU	600 mg/m^2 iv	day1, 8
Q4w x 6 cycles		

Muss HB et al. Standard chemotherapy (CMF or AC) versus capecitabine in early-stage breast cancer (BC) patients agec 65 or older: results of CALGB/CTSU 49907. 2008 ASCO annual meeting. Abstract 507.

CMF IV

Cyclophosphamide	600 mg/m^2 iv	day1
Methotrexate	40 mg/m^2 iv	day1
5-FU	600 mg/m^2 iv	day1
Q3w x 6 cycles		

Weiss RB et al. Adjuvant chemotherapy after conservative surgery plus irradiation versus modified radical mastectomy. Analysis of drug dosing and toxicity. Am J Med 1987; 83:455.

FAC

5-FU	500 mg/m^2 iv	day1
Doxorubicin	50 mg/m^2 iv	day1
Cyclophosphamide	500 mg/m^2 iv	day1
Q3w x 6 cycles		

Martin M et al. Doxorubicin in combination with fluorouracil and cyclophosphamide (i.v. FAC regimen d1, 21) versus methotrexate in combination with fluorouracil and cyclophosphamide (i.v. CMF regimen d1, 21) as adjuvant chemotherapy for operable breast cancer: a study by the GEICAM group. Ann Onco l 2003; 14:833.

FEC

5-FU	500 - 600 mg/m^2 iv	day1
Epirubicin	50 - 100 mg/m^2 iv	day1
Cyclophosphamide	500 - 600 mg/m^2 iv	day1
Q3w x 6 cycles or Q2W x 4-6 cycles (with GCSF support)		

Bonneterre J et al. Epirubicin increase long term survival in adjuvant chemotherapy of patients with poor prognosis, node positive, early breast cancer: 10 years follow up results of the French Adjuvant Study Group 05 randomized trial. J Clin Oncol 2005; 23:2686.

FLC

5-FU	500 - 600 mg/m^2 iv	day1
*Lipodox	35mg/m^2 iv	day1
Cyclophosphamide	500 - 600 mg/m^2 iv	day1
Q3w x 6 cycles or Q2W x 4-6 cycles (with GCSF support)		

Rayson D, Suter T.M, Jackisch C,et al:Cardiac Safety of Adjuvant Pegylated Liposomal Doxorubicin With Concurrent Trastuzumab:A
Randomized Phase II Trial Annals of Oncology 2012;23:1780-1788.
Juan Lao, Julia Madani, Teresa Puértolas,et al. Liposomal Doxorubicin in the Treatment of Breast Cancer Patients: A Review Journal ofDrug Delivery. 2013, Article ID 456409, 12 pages
*Epirubicin 替換自費使用 Liposomal doxorubicin(optional-需與醫師討論)

AC/EC→Paclitaxel Qw (or Paclitaxel→AC/EC)

Paclitaxel	80 mg/m^2 iv	day1
Qw x 12 cycles		

Sparano JA et al. Weekly paclitaxel in the adjuvant treatment of breast cancer. N Eng J Med 2008; 358:1663.
健保規範:Paclitaxel 腋下淋巴轉移之乳癌且動情素受體為陰性之患者，paclitaxel 可作為接續含 doxorubicin 在內之輔助化學治療。(91/4/1、94/1/1、98/8/1)

AC/EC→Docetaxel Q3w (or Docetaxel→AC/EC)

Docetaxel	60-100 mg/m^2 iv	day1
Q3w x 4 cycles		

Sparano JA et al. Weekly paclitaxel in the adjuvant treatment of breast cancer. N Eng J Med 2008; 358:1663.
健保規範: Docetaxel 1.局部晚期或轉移性乳癌。2.與 anthracycline 合併使用於腋下淋巴結轉移之早期乳癌之術後輔助性化學治療。(99/6/1)3.早期乳癌手術後，經診斷為三陰性反應且無淋巴轉移的病人，得作為與 cyclophosphamide 併用 doxorubicin 的化學輔助療法 4.除以上條件，其餘皆自費。

TAC

Docetaxel	50 - 75 mg/m^2 iv	day1
Doxorubicin	50 mg/m^2 iv	day1
Cyclophosphamide	500 mg/m^2 iv	day1
Q3w x 6 cycles		

Martin M et al. Adjuvant docetaxel for node-positive breast cancer. N Eng J Med 2005; 352:2302 .

TEC

Docetaxel	50-75 mg/m^2 iv	day1
Epirubicin	50-75 mg/m^2 iv	day1
Cyclophosphamide	500 mg/m^2 iv	day1
Q3w x 6 cycles		

P Piedbois et al. Dose-dense adjuvant chemotherapy in node-positive breast cancer: docetaxel followed by epirubicin/cyclophosphamide (T/EC), or the reverse sequence (EC/T), every 2 weeks, versus docetaxel, epirubicin and cyclophosphamide (TEC) every 3 weeks. AERO B03 randomized phase II study. Ann Oncol. 2007; 18: 52.

Cisplatin

Cisplatin	75 mg/m^2 iv	day1
Q3w		

Carboplantin

Carboplantin	6 mg, AUC iv	day1
Q3w		

Silver DP et al. Efficacy of neoadjuvant cisplatin in triple negative breast cancer. J Clin Oncol 2010;28: 1145.

Docetaxel+ Carboplatin

Docetaxel	60 - 75mg/m^2 iv	day1
Carboplantin	6 mg, AUC iv	day1
Cycled every 21 days for 6 cycles		

von Minckwitz G, Schneeweiss A, Loibl S, et al. Neoadjuvant carboplatin in patients with triple-negative and HER2-positive earlybreast cancer (GeparSixto; GBG 66): a randomised phase 2 trial Lancet Oncol 2014;15:747-756.

Paclitaxel(Weekly) + carboplatin

Paclitaxel	80mg/m^2 iv	day 1 8 15
Carboplantin	AUC 6 iv(q3w)/AUC2 iv(q1w)	day 1
Cycled every 21 days for4 cycles		

Loibl S, O'Shaughnessy J, Untch M, et al. Addition of the PARP inhibitor veliparib plus carboplatin or carboplatin alone to standard neoadjuvant chemotherapy in
triple-negative breast cancer (BrighTNess): a randomised, phase 3 trial. Lancet Oncol 2018;19(4):497-509.

Adjuvant Targeted therapy

Trastuzumab IV/SC +/- Chemotherapy

Trastuzumab can be given after completion of chemotherapy as well，loading dose 8 mg/kg，followed by 6 mg/kg，iv q3w for a total of 1 year.
Trastuzumab 4 mg/kg loading dose followed by 2 mg/kg iv qw during chemotherapy，then 6 mg/kg iv q3w，for a total of 1 year
Trastuzumab 600mg ， for a total of 1 year

Smith I et al. 2-year follow-up of trastuzumab after adjuvant chemotherapy in HER2-positive breast cancer: a randomized controlled trial. Lancet 2007; 369:29.

Romond EH et al. Trastuzumab plus adjuvant chemotherapy for operable Her2-positive breast cancer. N Eng J Med 2005; 353:1673 健保申請條件如下~早期乳癌:(1)外科手術前後、化學療法(術前輔助治療或輔助治療)治療後，具 HER2 過度表現(IHC 3+或 FISH+)，且具腋下淋巴結轉移但無遠處臟器轉移之早期乳癌患者，作為輔助性治療用藥。(2) 使用至多以一年為限。

An FDA-approved biosimilar is an appropriate substitute for trastuzumab

Pertuzumab -optional

loading dose 840 mg IV day 1 followed by 420 mg IV Cycled every 21 days to complete 1y of therapy q3w

Schneeweiss A, Chia S, Hickish T, et al. Pertuzumab plus trastuzumab in combination with standard neoadjuvant anthracycline-containing and anthracycline-free chemotherapy regimens in patients with HER2-positive early breast cancer: a randomized phase II cardiac safety study (TRYPHAENA). Ann Oncol 2013;24:2278-2284.

Swain S, Kim S-B, Cortes J, et al. Confirmatory overall survival(OS) analysis of CLEOPATRA: a randomized, double-blind, placebocontrolled

Phase III study with pertuzumab (P), trastuzumab (T), anddocetaxel (D) in patients (pts) with HER2-positive first-line (1L)metastatic breast cancer (MBC). Cancer Research 2012;72:P5-18-26.

Baselga J, Cortes J, Kim SB, et al. Pertuzumab plus trastuzumab plus docetaxel for metastatic breast cancer . N Engl J Med 2012;366:109-119.

Datko F, D'Andrea G, Dickler M, et al. Phase II study of pertuzumab, trastuzumab, and weekly paclitaxel in patients with metastatic HER2-overexpressing metastatic breastcancer [abstract]. Cancer Research 2012;72:Abstract P5-18-20.

Gianni L, Pienkowski T, Im YH, et al. Efficacy and safety of neoadjuvant pertuzumab and trastuzumab in women with locally

advanced, inflammatory, or early HER2-positive breast cancer(NeoSphere): a randomised multicentre, open-label, phase 2 trial.Lancet Oncol 2012;13:25-32

Chemotherapy for Metastatic breast cancer

Doxorubicin

Doxorubicin	60-75 mg/m^2 iv	day1
Q3w		

or

Doxorubicin	20 mg/m^2 iv	day1
Qw		

Chan S et al. Prospective randomized trial of docotaxel versus doxorubicin in patients with metastatic breast cancer. J Clin Oncol 1999;17:2341.

Gasparini G et al. Weekly epirubicin versus doxorubicin as second line therapy in advanced breast cancer. A randomized clinial trial. Am J Clin Oncol 1991;14:38.

Epirubicin

Epirubicin	60-90 mg/m^2 iv	day1
Q3w		

or

Epirubicin	20 mg/m^2 iv	day1
Qw		

Bastholt L et al. Dose-response relationship of epirubicin in the treatment of postmenopausal patients with metastatic breast cancer: a randomized study of epirubicin at four different dose levels performed by the Danish Breast Cancer Cooperative Group. J Clin Oncol 1996;14:1146.
Gasparini G et al. Weekly epirubicin versus doxorubicin as second line therapy in advanced breast cancer . A randomized clinial trial. Am J Clin Oncol 1991;14:38.

Liposomal doxorubicin

Liposmal doxorubicin	35- 50 mg/m^2 iv	day1
Q3-4w		

O'Brien ME et al. Reduced cardiotoxicity and comparable efficacy in a phase III trial of pegylated liposomal doxorubicin HCL versus conventional doxorubicin for first line treatment of metastatic breast cancer. Ann Oncol 2004;15:440.
健保申請條件:1.用於單一治療有心臟疾病風險考量之轉移性乳癌患者。2.除以上條件，其餘皆自費。

Cisplatin

Cisplatin	75 mg/m^2 iv	day1
Q3w		

Carboplantin

Carboplantin	6 mg, AUC iv	day1
Q3w		

Silver DP et al. Efficacy of neoadjuvant cisplatin in triple negative breast cancer. J Clin Oncol 2010;28:1145.

Docetaxel

Docetaxel	60-100 mg/m^2 iv	day1
Q3w		

or

Docetaxel	25 -40 mg/m^2 iv	day1
Qw		

Harvey V et al. Phase III trial of comparing three doses of docetaxel for second-line treatment of advanced breast cancer. J Clin Oncol 2006; 24:4963.
Burstein, HJ et al. Docetaxel administered on a weekly basis for metastatic breast cancer. J Clin Oncol 2000; 18:1212.

Paclitaxel

Paclitaxel	80 mg/m^2 iv	day1
Qw		

Bishop, JF et al. Initial paclitaxel improves outcome compared with CMFP combination chemotherapy as front-line therapy in untreated metastatic breast cancer. J Clin Oncol 1999; 17:2355.
Seidman AD et al. Randomized phase III trial of weekly compared with every-3-weeks paclitaxel for metastatic breast cancer, with trastuzumab for all Her-2 overexpressors and random assignment to trastuzumab or not in Her-2 nonoverexpressors: Final results of Cancer and Leukemia Group B Protocol 9840. J Clin Oncol 2008; 26:1642.健保規範;Paclitaxel 限用於已使用合併療法(除非有禁忌症、至少應包括使用 anthracycline)失敗的轉移性乳癌患者。(91/4/1、94/1/1)

Gemcitabine

Gemcitabine	800-1200 mg/m^2 iv	day1, 8, 15
Q4w		

Carmichael, J et al. Advanced breast cancer: a phase II trial with gemcitabine. J Clin Oncol 1995; 13:2731
.健保規範;Gemcitabine（如 Gemzar）限用於 Gemcitabine 與 paclitaxel 併用，可使用於曾經使用過 anthracycline 之局部復發且無法手術切除或轉移性之乳癌病患。（94/10/1）

GP

Gemcitabine	800-1200 mg/m^2 iv	day1, 8,
Paclitaxel	175 mg/m^2 iv	day1
following paclitaxel on day 1	Cycled every 21 days.	

GP

Gemcitabine	800 mg/m^2 iv	day1, 8,15
Paclitaxel	80 mg/m^2 iv	day1, 8,15
Q4w		

Kun-Ming Rau et al.Weekly Paclitaxel Combining with Gemcitabine is an Effective and Safe Treatment for Advanced Breast Cancer Patients
Jpn J Clin Oncol 2011;41(4)455–461

Vinorelbine

Vinorelbine	20 - 25 mg/m^2 iv、50-80 mg/m^2 po	day1,8
Q3w		

Gasparini, G et al. Vinorelbine is an active antiproliferative agent in pretreated advanced breast cancer patients: a phase II study. J Clin Oncol 1994; 12:2094.健保規範;Vinorelbine 晚期或無法手術切除之非小細胞肺癌及轉移性乳癌病患。本成分之口服劑型與注射劑型不得併用

Capecitabine

Capecitabine	800 - 1250 mg/m^2 po bid	day1-14
Q3w		

Fumoleau, P et al. Multicentre, phase II study evaluating capecitabine monotherapy in patients with anthracycline- and taxane-pretreated metastatic breast cancer. Eur J Cancer 2004; 40:536.
1. capecitabine 與 docetaxel 併用於治療對 anthracycline 化學治療無效之局部晚期或轉移性乳癌病患。
2. 單獨用於對 taxanes 及 anthracycline 化學治療無效，或無法使用 anthracycline 治療之局部晚期或轉移性乳癌病患。

UFT po

Uracil/Tegafur	270 mg/m^2 /day po
7 days/week	

Y Park. Uracil-tegafur and tamoxifen vs cyclophosphamide, methotrexate, fluorouracil, and tamoxifen in post-operative adjuvant therapy for stage I, II, or IIIA lymph node-positive breast cancer: a comparative study. British Journal of Cancer (2009), 1 – 7健保規範:Uracil-Tegafur限轉移性胃癌、轉移性直腸癌、轉移性結腸癌、轉移性乳癌之病患使用（89/10/1、97/12/1）。

AC

Doxorubicin	60 mg/m^2 iv	day1
Cyclophosphamide	600 mg/m^2 iv	day1
Q3w		

Nabholtz JM et al. Docetaxel and doxorubicin compared with doxorubicin and cyclophosphamide as first-line chemotherapy for metastatic breast cancer: results of a randomized, multicenter, phase III trial. J Clin Oncol 2003;21:968.

EC

Epirubicin	75 mg/m^2	iv	day1
Cyclophosphamide	600 mg/m^2	iv	day1
Q3w , or Q2W(and GCSF support)			

Langley RE et al. Phase III trial of epirubicin plus paclitaxel compared with epirubicin plus cyclophosphamide as first-line chemotherapy for metastatic breast cancer: United Kingdom Nationa l Cancer Research Institute Trial AB01. J Clin Oncol 2005; 23:8322.

Eribulin

Eribulim	1.4mg/m^2	iv	day1,8
Q3w			

Pooled analyses of eribulin in metastatic breast cancer patients with at least one prior chemotherapy. Pivot X1, Marmé F2, Koenigsberg R3, Guo M4, Berrak E5, Wolfer A6. 2016 Aug;27(8):1525-31. doi: 10.1093/annonc/mdw203. Epub 2016 May 13.健保規範:（如 Halaven）:（103/12/1、106/11/1）
1.用於治療轉移性乳癌患者且先前曾接受過 anthracycline 和 taxane 兩種針對轉移性乳癌之化學治療輔助性治療。2.每 3 個療程需進行療效評估，病歷應留存評估紀錄，無疾病惡化方可繼續使用。(106/11/1)

Ixabepilone

Ixabepilone	40mg/m^2	iv	day1
Capecitabine	2000mg/m^2	po	day1
Q3w			

1. Li J, Ren J, Sun W. Systematic review of ixabepilone for treating metastatic breast cancer. Breast Cancer. 2017 Mar;24(2):171-179. doi:10.1007/s12282-016-0717-0. Epub 2016 Aug 4. Review. PubMed PMID: 27491426.2.Puhalla, S., & Brufsky, A. (2008). Ixabepilone: a new chemotherapeutic option for refractory metastatic breast cancer. Biologics : Targets & Therapy, 2(3), 505–515.
3.Sparano, J. A., Vrdoljak, E., Rixe, O., Xu, B., Manikhas, A., Medina, C., … Conte, P. (2010). Randomized Phase III Trial of Ixabepilone Plus Capecitabine Versus Capecitabine in Patients With Metastatic Breast Cancer Previously Treated With an Anthracycline and a Taxane. Journal of Clinical Oncology, 28(20), 3256–3263. http://doi.org/10.1200/JCO.2009.24.4244 健保規範:Ixabepilone (如 Ixempra)：(110/2/1) 1.限 Ixabepilone
合併 capecitabine 用於局部晚期或轉移性乳癌患者，需符合以下 條件之一：(1)對 taxane 有抗藥性且無法接受 anthracycline 治療者 (2)對 taxane 及 anthracycline 治療無效者。 2.每 3 個療程需進行療效評估，病歷應留存評估紀錄，無疾病惡化方可繼續使用。3.Ixabepilone 與 eribulin 用於治療上述之轉移性乳癌患者時，僅得擇一使用，且不得互換(ixabepilone 限用於未曾使用過 eribulin 之病患)。

Target therapy for Metastatic breast cancer

Trastuzumab IV/SC +/- Chemotherapy

Trastuzumab 8mg/kg iv over 90 min first wk followed by 6 mg/kg iv over 30 min q3w	
Trastuzumab 4 mg/kg loading dose followed by 2 mg/kg iv	qw
Trastuzumab 600mg for a total of 1 year	

Cobleigh, MA et al. Multinational study of the efficacy and safety of humanized anti-HER2 monoclonal antibody in women who have HER2-overexpressing metastatic breast cancer that has progressed after chemotherapy for metastatic disease. J Clin Oncol 1999; 17:2639.健保規範:轉移性乳癌(1)單獨使用於治療腫瘤細胞上有 HER2 過度表現(IHC3+或 FISH+)，曾接受過一次以上化學治療之轉移性乳癌病人。(91/4/1、99/1/1)(2)與 paclitaxel 或 docetaxel 併用，使用於未曾接受過化學治療之轉移性乳癌病患，
且為 HER2 過度表現(IHC3+或 FISH+)者(93/8/1、95/2/1、99/1/1)
(3)轉移性乳癌且 HER2 過度表現之病人，僅限先前未使用過本藥品者方可使用；但 pertuzumab 及 docetaxel 併用時，不在此限。(99/1/1、108/5/1)經事前審查核准後使用，核准後每 24 週須檢附療效評估資料再次申請，若疾病有惡化情形即不應再行申請(105/11/1)。

An FDA-approved biosimilar is an appropriate substitute for trastuzumab

Pertuzumab +/- Chemotherapy

840 mg IV day 1 followed by 420 mg IV Cycled every 21 days to complete 1 y of therapyq3w

Schneeweiss A, Chia S, Hickish T, et al. Pertuzumab plus trastuzumab in combination with standard neoadjuvant anthracycline-containing and anthracycline-free chemotherapy regimens in patients with HER2-positive early breast cancer: a randomized phase II cardiac safety study (TRYPHAENA). Ann Oncol 2013;24:2278-2284.Swain S, Kim S-B, Cortes J, et al. Confirmatory overall survival(OS) analysis of CLEOPATRA: a randomized, double-blind, placebocontrolledPhase III study with pertuzumab (P), trastuzumab (T), anddocetaxel (D) in patients (pts) with HER2-positive first-line (1L)metastatic breast cancer (MBC). Cancer Research 2012;72:P5-18-26.

Baselga J, Cortes J, Kim SB, et al. Pertuzumab plus trastuzumab plus docetaxel for metastatic breast cancer. N Engl J Med 2012;366:109-119.Datko F, D'Andrea G, Dickler M, et al. Phase II study of pertuzumab, trastuzumab, and weekly paclitaxel in patients with metastatic HER2-overexpressing metastatic breastcancer [abstract]. Cancer Research 2012;72:Abstract P5-18-20.

Gianni L, Pienkowski T, Im YH, et al. Efficacy and safety of neoadjuvant pertuzumab and trastuzumab in women with locallyadvanced, inflammatory, or early HER2-positive breast cancer(NeoSphere): a randomised multicentre, open-label, phase 2 trial.Lancet Oncol 2012;13:25-32 健保規範:(108/05/01)Pertuzumab 與 trastuzumab 及 docetaxel 併用於治療轉移後未曾以抗 HER2 或化學療 法治療之 HER2 過度表現(IHC3+或 FISH+)轉移性乳癌病患。 2.須經事前審查核准後使用，核准後每 18 週須檢附療效評估資料再次申請，若疾病有惡化情形即不應再行申請，每位病人至多給付 18 個月為限。

Ado-trastuzumab emtansine(TDM1)

ado-trastuzumab emtansine	3.6 mg/kg IV	day 1
Cycled every 21 days.		

Verma S, Miles D, Gianni L, et al. Trastuzumab emtansine for HER2-positive advanced breast cancer [supplementary appendix available online]. N Engl J Med2012;367:1783-1791.

Ellis PA, Barrios CH, Eiermann W, et al. Phase III, randomized study of trastuzumab emtansine (T-DM1) {+/-} pertuzumab (P) vs trastuzumab + taxane (HT) for first-line treatment of HER2-positiveMBC: Primary results from the MARIANNE study. ASCO Meeting Abstracts 2015;33:507●目前健保規範 Trastuzumab emtansine (如 Kadcyla)：(110/2/1、113/8/1) 轉移性乳癌(110/2/1、113/8/1)(1)限單獨使用於先前未使用過本藥品且 HER2過度表現(IHC3+或 FISH+)

之轉移性乳癌患者作為二線治療，並同時 符合下列情形：I.之前分別接受過 trastuzumab 與一種 taxane 藥物治療，或其合併療法，或 pertuzumab 與 trastuzumab 與一種 taxane 藥物治療。II.之前已經接受過轉移性癌症治療，或在輔助療法治療期間或完成治療後6個月內癌症復發。III.合併有主要臟器(不包含骨及軟組織)轉移。(2)經事前審查核准後使用，核准後每12週須檢附療效評估資料再次申請，若疾病有惡化情形即不應再行申請，每位病人至多給付10 個月(13個療程為上限)。(3)Trastuzumab emtansine 和 lapatinib 僅能擇一使用，不得互換。

Bevacizumab(自費) + Chemotherapy

Bevacizumab	10 mg/kg iv	d1
Q2w		

or

Bevacizumab	15 mg/kg iv	d1
Q3w		

Miller KD et al. Paclitaxel plus bevacizumab versus paclitaxel alone for metastatic breast cancer. N Eng J Med 2007; 357:2666.

Miles D et al. Randomized, double-blind, placebo-controlled, phase III study of bevacizumab (BV) with docetaxel (D) or docetaxel with placebo (PL) as first-line therapy for patients with locally recurrent or metastatic breast cancer (mBC): AVADO. 2008 ASCO annual meeting. LBA1011.

An FDA-approved biosimilar is an appropriate substitute for Bevacizumab

Lapatinib + Xeloda

Lapatinib	1250mg po	
Xeloda	2000mg/m^2 po	d1-14

Lancet Oncol 2013 Jan;14(1):64-71.doi:10.1016/S1470-2045(12)70432-1.Epub 2012 Nov.

健保規範:lapatinib（如 Tykerb）1.與 capecitabine 併用，使用於曾接受 anthracycline,taxane 以及 trastuzumab 治療後病況惡化之轉移性乳癌併有腦部轉移，且為 HER2 過度表現(IHC3+或 FISH+)患者。2.每 3 個月需進行療效評估，病歷應留存評估紀錄，無疾病惡化方可繼續使用。

(106/11/1)Capecitabine（如 Xeloda）1. Capecitabine 與 docetaxel 併用於治療對 anthracycline 化學治療無效之局部晚期或轉移性乳癌病患。2.單獨用於對 taxanes 及 anthracycline 化學治療無效，或無法使用 anthracycline 治療之局部晚期或轉移性乳癌病患。

BEEP

Bevacizumab	15 mg/kg iv	d1
Etoposide	70 mg/m^2 /d	d2, 3, 4
Cisplatin	70 mg/m^2	d2
Q3w		

Lu YS, et al. Bevacizumab preconditioning followed by etoposide and cisplatin (BEEP) is a highly effective treatment for brain metastases of breast cancer progressing from radiotherapy — result of a multi-center phase II study. ECC 2013:1878.

Everolimus

Everolimus	10mg po

健保規範::Everolimus 5mg 及 10mg(如 Afinitor 5mg 及 10mg)：

與 exemestane 併用，作為先前已使用過非類固醇類之芳香環酶抑制劑治療無效，而未曾使用 exemestane 之荷爾蒙接受體陽性、HER2 受體陰性且尚未出現器官轉移危急症狀 (visceral crisis)之轉移性乳癌病人的治療，且使用本品無效後，不得申請 CDK4/6 抑制劑藥品（104/9/1、109/4/1）。限每日最大劑量為 10mg。（108/10/1）

Bachelot T, Bourgier c, Cropet C, et al. TAMRAD: A GINECO randomized phase II trial of everolimus in combination with tamoxifenversus tamoxifen alone in patients (pts) with hormone-receptor positive, HER2 negative metastatic breast Cancer (MBC) with prior

exposure to aromatase inhibitors (AI) [abstract]. Cancer Res 2010;70(24 Supplement):

Yardley DA, Noguchi S, Pritchard KI, et al. Everolimus plusexemestane in postmenopausal patients with HR(+) breast cancer:

BOLERO-2 final progression-free survival analysis. Adv Ther2013;30:870-884.

Baselga J, Campone M, Piccart M, et al. Everolimus in postmenopausal hormone-receptor-positive advanced breast cancer. N Engl J Med 2012;366:520-529.

Enhertu(Fam trastuzumab deruxtecan -nxki)

Enhertu(trastuzumab deruxtecan)	5.4 mg/kg iv	d1
Q3w		

for HER2 IHC 1+ or 2+/ISH negative)

Modi S, Jacot W, Yamashita T, et al. Trastuzumab deruxtecan in previously treated HER2-lowadvanced breast cancer [article and supplementary appendix published online ahead of print June 5, 2022]. N Engl J Med 2022.Modi S, Saura C, Yamashita T, et al. Trastuzumab deruxtecan in previously treated HER2-positive breast cancer. N Engl J Med 2020;382:610-621.

Trodelvy(Sacituzumab govitecan-hziy)

Trodelvy(Sacituzumab govitecan-hziy)	10mg/kg iv	d1,8
Q3w		

for TNBC or HR+/HER 2-

A Bardia, SA Hurvitz, SM Tolaney, et al. Sacituzumab govitecan in metastatic triple-negative breast cancer: ASCENT Clinical Trial Investigators. N Engl J Med 2021;384:1529-41.

Immune therapy

Pembrolizumab

Pembrolizumab	200mg IV	day 1/q3wks
Weekly paclitaxel	80mg/m^2 IV	day 1/q1w
carboplatin	AUC 5 (q3w)/1.5(q1w)IV day 1	
Cycled every 21days x 4cycle(cycles1-4)		
followed by		
Pembrolizumab	200mg IV	day 1
Doxorubicin	60mg/m^2 IV or Epirubicin 90mg/m^2 IV	day 1
Cyclophosphamide	600mg/m^2 IV	day 1
Cycled every 21days x 4cycle(cycles5-8)		
followed by		
Pembrolizumab	200mg IV	day 1/q3wks
Cycled every 21days x 9cycles		

Preoperative/Adjuvant therapy regimens NCCN p.66

High-risk triple-negative breast cancer (TNBC): Preoperative pembrolizumab + carboplatin + paclitaxel, followed by preoperative

pembrolizumab + cyclophosphamide + doxorubicin or epirubicin, followed by adjuvant pembrolizumab

子宮頸癌
Adjuvant AND Neoadjuvant chemotherapy

Cisplatin

Cisplatin	40-50mg/m2	iv	d1
wk x 6wks			

Moore DH, Blessing JA, McQuellon RP, et al. Phase III study of cisplatin with or without paclitaxel in stage IVB, recurrent, or persistent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2004;22:3113-3119.

Carboplatin

Carboplatin	AUC (4-6)	iv	d1
wk x 6wks			

Weiss GR, Green S, Hannigan EV, et al. A phase II trial of carboplatin for recurrent or metastatic squamous carcinoma of the uterine cervix: a Southwest Oncology Group study. Gynecol Oncol 1990;39:332-336.

Paclitaxel(自費)

Paclitaxel	50- 80mg/m^2	iv	d1
wk x 6 cycles			

Kudelka AP, Winn R, Edwards CL, et al. An update of a phase II study of paclitaxel in advanced or recurrent squamous cell cancer of the cervix. Anticancer Drugs 1997;8:657-661.

Paclitaxel(自費)

Paclitaxel	135-175mg/m^2	iv	d1
Q3W			

Kudelka AP, Winn R, Edwards CL, et al. An update of a phase II study of paclitaxel in advanced or recurrent squamous cell cancer of the cervix. Anticancer Drugs 1997;8:657-661.

Cisplatin +Paclitaxel(自費)

Cisplatin	40-50mg/m^2	iv	d1
Paclitaxel	50-80mg/m^2	iv	d1
wk			

1.Monk BJ, Sill MW, McMeekin DS, et al. Phase III trial of four cisplatin-containing doublet combinations in stage IVB, recurrent, or persistent cervical carcinoma: A Gynecologic Oncology Group Study. J Clin Oncol 2009;27:4649-4655.

2.Moore DH, Blessing JA, McQuellon RP, et al. Phase III study of cisplatin with or without paclitaxel in stage IVB, recurrent, or persistent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2004;22:3113-3119.

Carboplatin+Paclitaxel (自費)

Carboplatin	AUC (4-6)	iv	d1
Paclitaxel	50- 80mg/m^2	iv	d1
wk			

Moore KN, Herzog TJ, Lewin S, et al. A comparison of cisplatin/paclitaxel and carboplatin/paclitaxel in stage IVB, recurrent or persistent cervical cancer. Gynecol Oncol 2007;105:299-303.

Cisplatin+Taxol

Cisplatin	75-100mg/m^2	iv	d1
Taxol	(135-175)mg/m^2	iv	d1
q3w			

1.Monk BJ, Sill MW, McMeekin DS, et al. Phase III trial of four cisplatin-containing doublet combinations in stage IVB, recurrent, or persistent cervical carcinoma: A Gynecologic Oncology Group Study. J Clin Oncol 2009;27:4649-4655.
2.Moore DH, Blessing JA, McQuellon RP, et al. Phase III study of cisplatin with or without paclitaxel in stage IVB, recurrent, or persistent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2004;22:3113-3119.

Carboplatin+Taxol

Carboplatin	AUC (4-6)	iv	d1
Taxol	(135-175)mg/m^2	iv	d1
q3w			

Moore KN, Herzog TJ, Lewin S, et al. A comparison of cisplatin/paclitaxel and carboplatin/paclitaxel in stage IVB, recurrent or persistent cervical cancer. Gynecol Oncol 2007;105:299-303.

Cisplatin +vincristine

Cisplatin	40-50mg/m^2	iv	d1
vincristine	1mg/m^2	iv	d1
10days x 3 course			

Eddy GL, Bundy BN, Creasman WT, et al. Treatment of ("bulky")stage IB cervical cancer with or without neoadjuvant vincristine and cisplatin prior to radical hysterectomy and pelvic/para-aortic lymphadenectomy: a phase III trial of the gynecologic oncology group.Gynecol Oncol 2007;106:362-369. Available at:http://www.ncbi.nlm.nih.gov/pubmed/17493669.

Carboplatin+ vincristine

Carboplatin	AUC (4-6)	iv	d1
vincristine	1mg/m^2	iv	d1
10days x 3 course			

Eddy GL, Bundy BN, Creasman WT, et al. Treatment of ("bulky") stage IB cervical cancer with or without neoadjuvant vincristine and cisplatin prior to radical hysterectomy and pelvic/para-aortic lymphadenectomy: a phase III trial of the gynecologic oncology group.Gynecol Oncol 2007;106:362-369. Available at:http://www.ncbi.nlm.nih.gov/pubmed/17493669.

Cisplatin+Ifosfamide

Cisplatin	(75-100)mg/m^2	iv	d1
Ifosfamide	(3-5)g/m^2	iv	d1
q3w x 6 cycles			

Coleman RE, Harper PG, Gallagher C, et al. A phase II study of ifosfamide in advanced and relapsed carcinoma of the cervix. Cancer Chemother Pharmacol 1986;18:280-283. Available at:http://www.ncbi.nlm.nih.gov/pubmed/3802384.

Carboplatin+Ifosfamide

Carboplatin	AUC (4-6)	iv	d1
Ifosfamide	(3-5)g/m^2	iv	d1
q3w x 6 cycles			

Sutton GP, Blessing JA, McGuire WP, et al. Phase II trial of ifosfamide and mesna in patients with advanced or recurrent squamouscarcinoma of the cervix who had never received chemotherapy: a Gynecologic Oncology Group study. Am J Obstet Gynecol 1993;168:805-807. Available at:http://www.ncbi.nlm.nih.gov/pubmed/8456884.

Cisplatin+ Topotecan

Cisplatin	(75-100)mg/m^2 iv	d1
Topotecan	(2.5-4)mg/m^2 iv	d1
q3w		

1.Long HJ, 3rd, Bundy BN, Grendys EC, Jr., et al. Randomized phase III trial of cisplatin with or without topotecan in carcinoma of the uterine cervix: a Gynecologic Oncology Group Study. J Clin Oncol 2005; 23:4626-4633.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Carboplatin+ Topotecan

Carboplatin	AUC (4-6)	iv	d1
Topotecan	(2.5-4)mg/m^2	iv	d1
q3w			

1.M A Bookman, H Malmström, G Bolis, et al. Topotecan for the treatment of advanced epithelial ovarian cancer: an open-label phase II study in patients treated after prior chemotherapy that contained cisplatin or carboplatin and paclitaxel.JCO October 1998 vol. 16 no. 10 3345-3352
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Bevacizumab (Avastin) (自費) **+/- Chemotherapy**

Bevacizumab	7.5 -15mg/kg	iv	d1
Repeat cycle every 3 weeks.			

1.NCCN Clinical Practice Guidelines in Oncology™. Cervical Cancer.v 1.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf. Accessed February 13, 2012.
2.Monk BJ, Sill MW, Burger RA, Gray HJ, Buekers TE, Roman LD.Phase II trial of bevacizumab in the treatment of persistent or recurrent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2009;27:1069–1074.

Topotecan+/paclitaxel

Topotecan	(2.5-4)mg/m^2 iv		d1
Taxol	(135-175)mg/m^2	iv	d1
q3w			

1.Long HJ, 3rd, Bundy BN, Grendys EC, Jr., et al. Randomized phase III trial of cisplatin with or without topotecan in carcinoma of the uterine cervix: a Gynecologic Oncology Group Study. J Clin Oncol 2005; 23:4626-4633.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

CCRT

Cisplatin

Cisplatin	30-50mg/m^2 iv	d1
wk x 6wks		

Moore DH, Blessing JA, McQuellon RP, et al. Phase III study of cisplatin with or without paclitaxel in stage IVB, recurrent, or persistent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2004;22:3113-3119.

Carboplatin

Carboplatin	AUC (4-6) iv	d1
wk x 6wks		

Weiss GR, Green S, Hannigan EV, et al. A phase II trial of carboplatin for recurrent or metastatic squamous carcinoma of the uterine cervix: a Southwest Oncology Group study. Gynecol Oncol 1990;39:332-336.

Paclitaxel

Paclitaxel	80mg/m^2 iv	d1
wk x 6 cycles		

Kudelka AP, Winn R, Edwards CL, et al. An update of a phase II study of paclitaxel in advanced or recurrent squamous cell cancer of the cervix. Anticancer Drugs 1997;8:657-661.

Second-Line Therapy

Bevacizumab (Avastin) (自費) **+/- Chemotherapy**

Bevacizumab	7.5-15mg/kg iv	d1
Repeat cycle every 3 weeks.		

1.NCCN Clinical Practice Guidelines in Oncology™. Cervical Cancer.v 1.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf. Accessed February 13, 2012.
2.Monk BJ, Sill MW, Burger RA, Gray HJ, Buekers TE, Roman LD.Phase II trial of bevacizumab in the treatment of persistent or recurrent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2009;27:1069–1074.

Docetaxel (Taxotere) (自費)

Docetaxel	100mg/m2 , iv administered over 1 hr.	d1
Repeat cycle every 3 weeks.		

1.NCCN Clinical Practice Guidelines in Oncology™. Cervical Cancer.v 1.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf. Accessed February 13, 2012.
2.Garcia AA, Blessing JA, Vaccarello L, Roman LD; Gynecologic Oncology Group Study. Phase II clinical trial of docetaxel in refractory squamous cell carcinoma of the cervix: a Gynecologic Oncology Group Study. Am J Clin Oncol. 2007;30:428–431.

Gemcitabine (Gemzar) (自費)

Gemcitabine	800mg/m2 , iv administered over 30 min.	d1
Repeat cycle every 4 weeks.		

1.NCCN Clinical Practice Guidelines in Oncology™. Cervical Cancer.v 1.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf. Accessed February 13, 2012.
2.Schilder RJ, Blessing J, Cohn DE. Evaluation of gemcitabine in previously treated patients with non -squamous cell carcinoma of the cervix: a phase II study of the Gynecologic Oncology Group. Gynecol Oncol. 2005;96:103–107.

Palliative Therapy

Bevacizumab (Avastin) (自費)**+/- Chemotherapy**

Bevacizumab	7.5-15mg/kg	iv	d1
Repeat cycle every 3 weeks.			

1.NCCN Clinical Practice Guidelines in Oncology™. Cervical Cancer.v 1.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf. Accessed February 13, 2012.
2.Monk BJ, Sill MW, Burger RA, Gray HJ, Buekers TE, Roman LD.Phase II trial of bevacizumab in the treatment of persistent or recurrent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2009;27:1069–1074.

Cisplatin+Topotecan

Cisplatin	50-100 mg/m^2	iv	d1
Topotecan	0.75mg/m^2		d1-d3
q3w			

1.Long HJ, 3rd, Bundy BN, Grendys EC, Jr., et al. Randomized phase III trial of cisplatin with or without topotecan in carcinoma of the uterine cervix: a Gynecologic Oncology Group Study. J Clin Oncol 2005 ;23:4626-4633.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Cisplatin+ Topotecan

Cisplatin	50-100 mg/m^2	iv	
d1			
Topotecan	(2.5-4)mg/m^2	iv	d1
q3w			

1. HJ, 3rd, Bundy BN, Grendys EC, Jr., et al. Randomized phase III trial of cisplatin with or without topotecan in carcinoma of the uterine cervix: a Gynecologic Oncology Group Study. J Clin Oncol 2005;23:4626-4633.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Carboplatin+Topotecan

Carboplatin	AUC (4-6)	iv	d1
Topotecan	0.75mg/m^2		d1-d3
q3w			

1.Long HJ, 3rd, Bundy BN, Grendys EC, Jr., et al. Randomized phase III trial of cisplatin with or without topotecan in carcinoma of the uterine cervix: a Gynecologic Oncology Group Study. J Clin Oncol 2005;23:4626-4633.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Carboplatin+ Topotecan

Carboplatin	AUC (4-6)	iv	d1
Topotecan	(2.5-4)mg/m^2	iv	d1
q3w			

1.N. R. Abu-Rustum, S. Lee, L. S. Massad. Topotecan for recurrent cervical cancer after platinum-based therapy.International Journal of Gynecological Cancer, Volume 10, Issue 4, pages 285–288, July/ August 2000
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Cisplatin +paclitaxel+Bevacizumab

paclitaxel	135-175mg/m2	iv	d1
Cisplatin	50-75mg/m2	iv	d1
Bevacizumab	7.5-15mg/kg	iv	d1
21 days intervals			

Tewari KS, Sill MW, Long HJ 3rd,et al. Improved survival with bevacizumab in advanced cervical cancer. N Engl J Med. 2014 Fed 20;370(8):734-43.

Topotecan+paclitaxel+Bevacizumab

paclitaxel	135-175mg/m2	iv	d1
Topotecan	0.75mg/m2	iv	d1- d3
Bevacizumab	7.5-15mg/kg	iv	d1
21 days intervals			

Tewari KS, Sill MW, Long HJ 3rd,et al. Improved survival with bevacizumab in advanced cervical cancer. N Engl J Med. 2014 Fed 20;370(8):734-43

Doxorubicin liposome

Doxorubicin liposome	(25-45)mg/ m^2	iv	d1
q3w			

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Taxol+Lipo-dox

paclitaxel	135-175mg/m2	iv	d1
Doxorubicin liposome	(25-45)mg/ m^2	iv	d1
q3w			

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Cisplatin+Lipo-dox

Cisplatin	75-100 mg/m^2	iv	d1
Doxorubicin liposome	(25-45)mg/ m^2	iv	d1
q3w			

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Carboplatin+Lipo-dox

Carboplatin	AUC (4-6)	iv	d1	
Doxorubicin liposome	(25-45)mg/ m^2	iv		d1
q3w				

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Pembrolizumab

Pembrolizumab	100-200 mg	d1
Cycled every 21 days		

Hyun Cheol Chung, MD, PhD, et al.Efficacy and Safety of Pembrolizumab in Previously Treated Advanced Cervical Cancer: Results From the Phase II KEYNOTE-158 Study. Journal of Clinical Oncology 37, no. 17 (June 10, 2019) 1470-1478.

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Adjuvant chemotherapy

Paclitaxel+Cisplatin

Paclitaxel	(135/175)mg/m2 iv	d1
Cisplatin	75mg/m2 iv	d1
q3w x 6wks cycles		

Homesley HD, Filiaci V, Gibbons SK, et al. A randomized phase III trial in advanced endometrial carcinoma of surgery and volume directed radiation followed by cisplatin and doxorubicin with or without paclitaxel: A Gynecologic Oncology Group study. Gynecol Oncol 2009;112:543-552.

Paclitaxel+Carboplatin

Paclitaxel	(135/175)mg/m2 iv	d1
Carboplatin	AUC (4-6) iv	d1
q3w x 6wks cycles		

Miller D, Filiaci V, Fleming G, et al. Randomized phase III noninferiority trial of first line chemotherapy for metastatic or recurrent endometrial carcinoma: a Gynecologic Oncology Group study [abstract]. Gynecol Oncol 2012;125:771.

Doxorubicin +Cisplatin

Doxorubicin	50mg/m^2 iv	d1
Cisplatin	75mg/m^2 iv	d1
q3w x 6 cycles		

Homesley HD, Filiaci V, Gibbons SK, et al. A randomized phase III trial in advanced endometrial carcinoma of surgery and volume directed radiation followed by cisplatin and doxorubicin with or without paclitaxel: A Gynecologic Oncology Group study. Gynecol Oncol 2009;112:543-552.

Doxorubicin +Carboplatin

Doxorubicin	50mg/m^2 iv	d1
Carboplatin	AUC (4-6) iv	d1
q3w x 6 cycles		

Homesley HD, Filiaci V, Gibbons SK, et al. A randomized phase III trial in advanced endometrial carcinoma of surgery and volume directed radiation followed by cisplatin and doxorubicin with or without paclitaxel: A Gynecologic Oncology Group study. Gynecol Oncol 2009;112:543-552.

Cisplatin+Ifosfamide

Cisplatin	50-100mg/m^2 iv	d1
Ifosfamide	3-5g/m^2 iv	d1
q3w x 6 cycles		

Howard D. Homesley, Virginia Filiaci, Maurie Markman, et al. Phase III Trial of Ifosfamide With or Without Paclitaxel in Advanced Uterine Carcinosarcoma: A Gynecologic Oncology Group Study.JCO February 10, 2007 vol. 25 no. 5 526-531

Carboplatin+Ifosfamide

Carboplatin	AUC (4-6) iv	d1
Ifosfamide	3-5g/m^2 iv	d1
q3w x 6 cycles		

A. Pawinski1, a, e, S. Tumolob, G. Hoeselc, A. Cervantesd, et al. Cyclophosphamide or ifosfamide in patients with advanced and/or recurrent endometrial carcinoma: a randomized phase II study of the EORTC Gynecological Cancer Cooperative Group.European Journal of Obstetrics & Gynecology and Reproductive Biology Volume 86, Issue 2, October 1999, Pages 179–183

Cisplatin + doxorubicin +paclitaxel (Taxol)

Doxorubicin 45mg/m2 IV + cisplatin 50mg/m2 iv	d1
Paclitaxel 160mg/m2 3-hr iv	d2
Filgrastim 5mcg/kg SC.Repeat cycle every 3 weeks for max 7 cycles.	d3-12
Maximum BSA of 2.0 was used for calculations.	

1.NCCN Clinical Practice Guidelines in Oncology™. Uterine Neoplasms.v 2.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/uterine.pdf. Accessed February 24, 2012.
2.Fleming, GF, Brunetto VL, Cella D, et al. Phase III trial of doxorubicin plus cisplatin with or without paclitaxel plus filgrastim in advanced endometrial carcinoma: a Gynecologic Oncology Group Study. J Clin Oncol. 2004;22:2159–2166.

Ifosfamide (Ifex) + paclitaxel

Paclitaxel 135mg/m2 administered as a 3-hr iv	d1
Ifosfamide 1.6g/m2/day iv (1.2g/m2/day if patient received prior radiation).	d1-3
Repeat cycle every 3 weeks for 8 cycles.	

1.NCCN Clinical Practice Guidelines in Oncology™. Uterine Neoplasms.v 2.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/uterine.pdf. Accessed February 24, 2012.
2.Homesley HD, Filiaci V, Markman M, et al. Phase III trial of ifosfamide with or without paclitaxel in advanced uterine carcinosarcoma:a Gynecologic Oncology Group study. J Clin Oncol.2007;25:526–531.

Bevacizumab (Avastin)+/-Chemotherapy

Bevacizumab	7.5- 15mg/kg iv	d1
Repeat cycle every 3 weeks		

1.NCCN Clinical Practice Guidelines in Oncology™. Uterine Neoplasms.v 2.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/uterine.pdf. Accessed February 24, 2012.
2.Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011;29(16): 2259–2265.

Doxorubicin liposome

Doxorubicin liposome	(25-45)mg/ m^2 iv	d1
q3w		

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatincompared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse.J Clin Oncol 2010;28:3323-3329.

Taxol+Lipo-dox

paclitaxel	135-175mg/m2	iv	d1
Doxorubicin liposome	(25-45)mg/ m^2	iv	d1
q3w			

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin ompared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Cisplatin+Lipo-dox

Cisplatin	75-100 mg/m^2	iv	d1
Doxorubicin liposome	(25-45)mg/ m^2	iv	d1
q3w			

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatincompared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Carboplatin+Lipo-dox

Carboplatin	AUC (4-6)	iv	d1
Doxorubicin liposome	(25-45)mg/ m^2	iv	d1
q3w			

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin
compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol 2010;28:3323-3329.

Hormonal therapy

Megestrol

Megestrol 40-160 mg /d
QD x 6months

1.Fiorica JV, Brunetto VL, Hanjani P, et al. Phase II trial of alternating courses of megestrol acetate and tamoxifen in advancedendometrial carcinoma: a Gynecologic Oncology Group study. Gynecol Oncol 2004;92:10-14. Available at:http://www.ncbi.nlm.nih.gov/pubmed/14751131.
2.Pandya KJ, Yeap BY, Weiner LM, et al. Megestrol and tamoxifen in patients with advanced endometrialcancer: an Eastern Cooperative Oncology Group Study (E4882). Am J Clin Oncol 2001;24:43-46.Available at: http://www.ncbi.nlm.nih.gov/pubmed/11232948.

Medroxyprogesterone

Medroxyprogesterone 400-800 mg /d
QD x 6months

1.Whitney CW, Brunetto VL, Zaino RJ, et al. Phase II study of medroxyprogesterone acetate plus tamoxifen in advanced endometrialcarcinoma: a Gynecologic Oncology Group study. Gynecol Oncol 2004;92:4-9. Available at:http://www.ncbi.nlm.nih.gov/pubmed/14751130.
2.Thigpen JT, Brady MF, Alvarez RD, et al. Oral medroxyprogesterone acetate in the treatment of advanced or recurrentendometrial carcinoma: a dose-response study by the Gynecologic Oncology Group. J Clin Oncol 1999;17:1736-1744. Available at:http://www.ncbi.nlm.nih.gov/pubmed/10561210.

Levonorgestrel IUD

Levonorgestrel IUD	Intrauterine Devise x1

Baker J, Obermair A, Gebski V, Janda M. Efficacy of oral or intrauterine device-delivered progestin in patients with complex endometrial hyperplasia with atypia or early endometrial adenocarcinoma: a meta-analysis and systematic review of the literature. Gynecol Oncol 2012;125:263-270. Available at:http://www.ncbi.nlm.nih.gov/pubmed/22196499.

Leupline

Leupline	375mg IM
qm x 6months	

1.A.R. Jeyarajah, M.D.C.J. Gallagher, M.D., Ph.D.P.R. Blake, M.D,et al.Long-Term Follow-up of Gonadotrophin-Releasing Hormone Analog Treatment for Recurrent Endometrial Cancer. Gynecologic Oncology Volume 63, Issue 1, October 1996, Pages 47–522. Tirso Pérez-Medina , M.D.José Bajo, M.D.Gonzalo Folgueira, M.D.,et al.Atypical Endometrial Hyperplasia Treatment with Progestogens and Gonadotropin-Releasing Hormone Analogues: Long-Term Follow-up. Gynecologic Oncology Volume 73, Issue 2, May 1999, Pages 299–30

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Neoadjuvant therapy

Cisplatin+Paclitaxel

Cisplatin	(75-100)mg/m^2	iv	d1
Paclitaxel	(135/175)mg/m^2	iv	d1
q 3w			

Ignace Vergote, M.D., Ph.D., Claes G. Tropé, M.D., Ph.D., Frédéric Amant, M.D., Ph.D., et al. Neoadjuvant Chemotherapy or Primary Surgery in Stage IIIC or IV Ovarian Cancer.N Engl J Med 2010; 363:943-953
September 2, 2010

Carboplatin+Paclitaxel

Carboplatin	AUC(4-6)	iv	d1
Paclitaxel	(135/175)mg/m^2	iv	d1
q 3w			

Parmar MK, Ledermann JA, Colombo N, et al. Paclitaxel plus platinum-based chemotherapy versus conventional platinum-based chemotherapy in women with relapsed ovarian cancer: the ICON4/AGO-OVAR-2.2 trial. Lancet 2003;361:2099-2106.

Paclitaxel+ Doxorubicin liposome

Paclitaxel	(135/175)mg/m^2	iv	d1
Doxorubicin liposome	(25-45)mg/m^2	iv	d1
q 3w			

Eleftherios P. Mamounas, John Bryant, Barry Lembersky, et al. Paclitaxel After Doxorubicin Plus Cyclophosphamide As Adjuvant Chemotherapy for Node-Positive Breast Cancer: Results From NSABP B-28.JCO June 1, 2005 vol. 23 no. 16 3686-3696

Bevacizumab (Avastin)+/-Chemotherapy

Bevacizumab	7.5-15mg/kg iv	d1
Repeat cycle every 3 weeks		

Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011;29(16): 2259–2265.

Adjuvant therapy

Cisplatin+Cyclophopsamide(For stage I,II)

Cisplatin	(75-100)mg/m^2	iv	d1
Cyclophosphamide	750mg/m^2	iv	d1
q3wx 6cycles			

McGuire WP, Hoskins WJ, Brady MF, et al. Cyclophosphamide and cisplatin compared with paclitaxel and cisplatin in patients with stage III and stage IV ovarian cancer. N Engl J Med 1996;334:1-6.Available at: http://www.ncbi.nlm.nih.gov/pubmed/7494563.

Carboplatin+Cyclophopsamide(For stage I,II)

Carboplatin	AUC (4-6)	iv	d1
Cyclophosphamide	(750-1000)mg/m^2	iv	d1
q3w x 6 cycles			

Swenerton K, Jeffrey J, Stuart G, et al. Cisplatin-cyclophosphamide versus carboplatin-cyclophosphamide in advanced ovarian cancer: a randomized phase III study of the National Cancer Institute of Canada Clinical Trials Group. J Clin Oncol 1992;10:718-726.

Cisplatin+Paclitaxel(For stage <III ,自費)

Cisplatin	(75-100)mg/m^2	iv	d1
Paclitaxel	(135/175)mg/m^2	iv	d1
q 3w x 6 cycles			

Lesnock JL, Darcy KM, Tian C, et al. BRCA1 expression and improved survival in ovarian cancer patients treated with intraperitoneal cisplatin and paclitaxel: a Gynecologic Oncology Group Study. Br J Cancer 2013;108:1231-1237. Available at:http://www.ncbi.nlm.nih.gov/pubmed/23462720.

Carboplatin+Paclitaxel(For stage <III ,自費)

Carboplatin	AUC (4-6)	iv	d1
Paclitaxel	(135/175)mg/m^2	iv	d1
q 3w x 6 cycles			

1.NCCN Clinical Practice Guidelines in Oncology™. Ovarian Cancer including Fallopian Tube Cancer and Primary Peritoneal Cancer.v 2.2012. Available at: http://www.nccn.org/professionals/physician_gls/pdf/ovarian.pdf. Accessed May 11, 2012.

2.Ozols RF, Bundy BN, Greer BE, et al; Gynecologic Oncology Group. Phase III trial of carboplatin and paclitaxel compared with cisplatin and paclitaxel in patients with optimally resected stage III ovarian cancer: a Gynecologic Oncology Group study.J Clin Oncol. 2003;21:3194–3200.

Bevacizumab (Avastin)+/-Chemotherapy

Bevacizumab	7.5-15mg/kg iv	d1
Repeat cycle every 3 weeks		

Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011;29(16): 2259–2265.

Olaparib(Lynparza)

Olaparib(Lynparza)	300mg po	BID
QD		

Kathleen Moore, M.D., Nicoletta Colombo, M.D., et al.Maintenance Olaparib in Patients with Newly Diagnosed Advanced Ovarian Cancer.N Engl J Med 2018; 379:2495-2505

Adjuvant second line therapy

Cisplatin

Cisplatin	(75-100)mg/m^2 iv	d1
wk x 6 wks		

Aghajanian C, Blank SV, Goff BA, et al. OCEANS: A randomized, double-blind, placebo-controlled phase III trial of chemotherapy with or without bevacizumab in patients with platinum-sensitive recurrent epithelial ovarian, primary peritoneal, or fallopian tube cancer. J Clin Oncol 2012;30:2039-2045.

Carboplatin

Carboplatin	AUC (4-6) iv	d1
q3w x 6 cycles		

Aghajanian C, Blank SV, Goff BA, et al. OCEANS: A randomized, double-blind, placebo-controlled phase III trial of chemotherapy with or without bevacizumab in patients with platinum-sensitive recurrent epithelial ovarian, primary peritoneal, or fallopian tube cancer. J Clin Oncol 2012;30:2039-2045.

Paclitaxel

Paclitaxel	(50-80)mg/m^2 iv	d1
q3w x 6 cycles		

Markman M, Blessing J, Rubin SC, et al. Phase II trial of weekly paclitaxel (80 mg/m) in platinum and paclitaxel-resistant ovarian and primary peritoneal cancers: a Gynecologic Oncology Group study. Gynecol Oncol 2006;101:436-440.

Paclitaxel

Paclitaxel	135-175mg/m^2 iv	d1
Q3w		

Markman M, Blessing J, Rubin SC, et al. Phase II trial of weekly paclitaxel (80 mg/m) in platinum and paclitaxel-resistant ovarian and primary peritoneal cancers: a Gynecologic Oncology Group study. Gynecol Oncol 2006;101:436-440.

Doxorubicin liposome

Doxorubicin liposome	(25-45)mg/ m^2 iv	d1
q3w x 6 cycles		

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse
. J Clin Oncol 2010;28:3323-3329.

Cisplatin+Ifosfamide

Cisplatin	(50-100)mg/m^2	iv	d1
Ifosfamide	(3-5)g/m^2	iv	d1
q3w x 6 cycles			

1.Markman M, Hakes T, Reichman B, et al. Ifosfamide and mesna in previously treated advanced epithelialovarian cancer: activity in platinum-resistant disease. J Clin Oncol 1992;10:243-248. Available at:http://www.ncbi.nlm.nih.gov/pubmed/1732425.2.Kondagunta GV, Bacik J, Donadio A, et al. Combination of paclitaxel, ifosfamide, and cisplatin is an effective second-line therapy for patients with relapsed testicular germ cell tumors. J Clin Oncol2005;23:6549-6555. Available at:http://www.ncbi.nlm.nih.gov/pubmed/16170162.

Carboplatin+Ifosfamide

Carboplatin	AUC (4-6)	iv	d1
Ifosfamide	(3-5)g/m^2	iv	d1
q3w x 6 cycles			

1.Markman M, Hakes T, Reichman B, et al. Ifosfamide and mesna in previously treated advanced epithelial ovarian cancer: activity in platinum-resistant disease. J Clin Oncol 1992;10:243-248. Available at:http://www.ncbi.nlm.nih.gov/pubmed/1732425.2.Kondagunta GV, Bacik J, Donadio A, et al. Combination of paclitaxel, ifosfamide, and cisplatin is an effective second-line therapy for patients with relapsed testicular germ cell tumors. J Clin Oncol 2005;23:6549-6555. Available at:http://www.ncbi.nlm.nih.gov/pubmed/16170162.

Doxorubicin liposome +Carboplatin

Doxorubicin liposome	(25-45) mg/ m^2	iv	d1
Carboplatin	AUC (4-6)	iv	d1
q3w x 6 cycles			

1.Mutch DG, Orlando M, Goss T, et al. Randomized phase III trial of gemcitabine compared with pegylated liposomal doxorubicin in patients with platinumresistant ovarian cancer. J Clin Oncol 2007;25:2811-2818.2.Ferrandina G, Ludovisi M, Lorusso D, et al. Phase III trial of gemcitabine compared with pegylated liposomal doxorubicin in progressive or recurrent ovarian cancer. J Clin Oncol 2008;26:890-896.

Paclitaxel+ Doxorubicin liposome

Paclitaxel	80mg/m^2	iv	d1
Doxorubicin liposome	(25-45) mg/m^2	iv	d1
wk x 6 wks			

Elizabeth M. Swisher, M.D., David G. Mutch, M.D., Janet S. Rader, M.D., et al. Topotecan in Platinum- and Paclitaxel-Resistant Ovarian Cancer .Gynecologic Oncology, Volume 66, Issue 3, September 1997, Pages 480–486

Topotecan(自費)

Topotecan	(0.5-1.25)mg/ m^2 iv	d1
wk x 6 cycles		

1.Sehouli J, Stengel D, Harter P, et al. Topotecan weekly versus conventional 5-day schedule in patients with platinum-resistant ovarian cancer: A randomized multicenter phase II trial of the North-Eastern German Society of Gynecological Oncology Ovarian Cancer Study Group. J Clin Oncol 2011;29:242-248.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Topotecan(自費)

Topotecan	(0.75-1.25)mg/ m^2 iv	d1
q3w x 6 cycles		

1.Gordon AN, Tonda M, Sun S, Rackoff W. Long-term survival advantage for women treated with pegylated liposomal doxorubicin compared with topotecan in a phase 3 randomized study of recurrent and refractory epithelial ovarian cancer. Gynecol Oncol 2004;95:1-8.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings.
NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Cisplatin+ Topotecan

Cisplatin	50-100mg/m^2	iv	d1
Topotecan	0.5-1.25mg/m^2	iv	d1
10days x 3 course			

1.M A Bookman, H Malmström, G Bolis, et al. Topotecan for the treatment of advanced epithelial ovarian cancer: an open-label phase II study in patients treated after prior chemotherapy that contained cisplatin or carboplatin and paclitaxel.JCO October 1998 vol. 16 no. 10 3345-3352
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Carboplatin+ Topotecan

Carboplatin	AUC (4-6)	iv	d1
Topotecan	0.5-1.25mg/m^2	iv	d1
10days x 3 course			

1.M A Bookman, H Malmström, G Bolis, et al. Topotecan for the treatment of advanced epithelial ovarian cancer: an open-label phase II study in patients treated after prior chemotherapy that contained cisplatin or carboplatin and paclitaxel.JCO October 1998 vol. 16 no. 10 3345-3352
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings NIOSH Alert 2004-165. 3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

Bevacizumab (Avastin)+/-Chemotherapy

Bevacizumab	7.5-15mg/kg iv	d1
Repeat cycle every 3 weeks		

Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011;29(16): 2259–2265.

Palliative therapy

Gefitinib +Paclitaxel

Gefitinib(自費)	2pc	d1
Paclitaxel	80mg/m^2 iv	d1

Fortunato Ciardiello2, Rosa Caputo, Roberto Bianco, et al. Antitumor Effect and Potentiation of Cytotoxic Drugs Activity in Human Cancer Cells by ZD-1839 (Iressa), an Epidermal Growth Factor Receptor-selective
Tyrosine Kinase Inhibitor1 Clin Cancer Res May 2000 6; 2053

Etoposide

Etoposide	1pc(oral)1#
QD x 7 day ~ 28 day	

Rose PG, Blessing JA, Mayer AR, Homesley HD. Prolonged oral etoposide as second-line therapy for platinum-resistant and platinum-sensitive ovarian carcinoma: a Gynecologic Oncology Group study. J Clin Oncol 1998;16:405-410.

Cyclophopsamide

Cyclophosphamide	1pc (oral)1#
QD x 7 day ~ 28day	

Swenerton K, Jeffrey J, Stuart G, et al. Cisplatin-cyclophosphamide versus carboplatin-cyclophosphamide in advanced ovarian cancer: a randomized phase III study of the National Cancer Institute of Canada Clinical Trials Group. J Clin Oncol 1992;10:718-726.

Gemcitabine+ Doxorubicin liposome

Gemcitabine	650-1000mg/m^2 iv	d1
Doxorubicin liposome	25-45mg/m2 iv	d1
weekx3 rest 1 week x 6 cycles		

1.Mutch DG, Orlando M, Goss T, et al. Randomized phase III trial of gemcitabine compared with pegylated liposomal doxorubicin in patients with platinumresistant ovarian cancer. J Clin Oncol 2007;25:2811-2818.
2.Ferrandina G, Ludovisi M, Lorusso D, et al. Phase III trial of gemcitabine compared with pegylated liposomal doxorubicin in progressive or recurrent ovarian cancer. J Clin Oncol 2008;26:890-896.

Bevacizumab (自費)+Cyclophosphamide

Bevacizumab	5-10mg/kg q2weeks iv	d1
Cyclophosphamide	1#(50mg) qd 5days iv	d1

1.Robert A. Burger, Michael W. Sill, Bradley J. Monk, et al. Phase II Trial of Bevacizumab in Persistent or Recurrent Epithelial Ovarian Cancer or Primary Peritoneal Cancer: A Gynecologic Oncology GroupStudy.JCO November 20, 2007 vol. 25 no. 33 5165-5171
2.Carol Aghajanian⇓, Stephanie V. Blank, Barbara A. Goff,et al. OCEANS: A Randomized, Double-Blind, Placebo-Controlled Phase III Trial of Chemotherapy With or Without Bevacizumab in Patients With Platinum-Sensitive Recurrent Epithelial Ovarian, Primary Peritoneal, or Fallopian Tube Cancer.JCOJune 10, 2012 vol. 30 no. 17 2039-2045

paclitaxel

Paclitaxel	80mg/m^2 iv	d1
wk x 6 wks		

Markman M, Blessing J, Rubin SC, et al. Phase II trial of weekly paclitaxel (80 mg/m) in platinum and paclitaxel-resistant ovarian and primary peritoneal cancers: a Gynecologic Oncology Group study. Gynecol Oncol 2006;101:436-440.

Doxorubicin liposome

Doxorubicin liposome	(25-45)mg/m^2 iv	d1
q4w x 6 cycles		

1.Mutch DG, Orlando M, Goss T, et al. Randomized phase III trial of gemcitabine compared with pegylated liposomal doxorubicin in patients with platinumresistant ovarian cancer. J Clin Oncol 2007;25:2811-2818.
2.Ferrandina G, Ludovisi M, Lorusso D, et al. Phase III trial of gemcitabine compared with pegylated liposomal doxorubicin in progressive or recurrent ovarian cancer. J Clin Oncol 2008;26:890-896.

Carboplatin(自費) + Doxorubicin liposome

Carboplatin	AUC (4-6) iv	d1
Doxorubicin liposome	(25-45) mg/m^2 iv	d1
q4w x 6 cycles		

Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal doxorubicin and carboplatin compared with paclitaxel and carboplatin for patients with platinum-sensitive ovarian cancer in late relapse.
J Clin Oncol 2010;28:3323-3329.

Topotecan(自費)

Topotecan	0.5-1.25mg/m^2 iv	d1
wk x 6 cycles		

1.Gordon AN, Tonda M, Sun S, Rackoff W. Long-term survival advantage for women treated with pegylated liposomal doxorubicin compared with topotecan in a phase 3 randomized study of recurrent and refractory epithelial ovarian cancer. Gynecol Oncol 2004;95:1-8.
2. Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings.
NIOSH Alert 2004-165.
3. American Society of Health-System Pharmacists. ASHP Guidelines on Handling Hazardous Drugs. Am J Health-Syst Pharm. 2006;63:1172-1193.

paclitaxel

Paclitaxel	(50-80)mg/m^2 iv	d1
Monthly		

Markman M, Blessing J, Rubin SC, et al. Phase II trial of weekly paclitaxel (80 mg/m) in platinum and paclitaxel-resistant ovarian and primary peritoneal cancers: a Gynecologic Oncology Group study. ynecol Oncol 2006;101:436-440.

Bevacizumab (Avastin)+/-Chemotherapy

Bevacizumab	7.5-15mg/kg iv	d1
Repeat cycle every 3 weeks		

Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011;29(16): 2259–2265.

Intraperitoneal for stage III

Paclitaxel+cisplatin

Paclitaxel	135mg/m2	iv	d1
cisplatin	100mg/m2	ip	d2
Q3w x 6 cycles			

David S. Alberts, M.D., P.Y. Liu, Ph.D., Edward V. Hannigan, M.D.,et al. Intraperitoneal Cisplatin plus Intravenous Cyclophosphamide versus Intravenous Cisplatin plus Intravenous Cyclophosphamide fo r Stage III Ovarian Cancer.N Engl J Med 1996; 335:1950-1955December 26, 1996

Cisplatin IP

cisplatin	75- 100mg/m2	ip	d1
Q3w x 6 cycles			

David S. Alberts, M.D., P.Y. Liu, Ph.D., Edward V. Hannigan, M.D.,et al. Intraperitoneal Cisplatin plus Intravenous Cyclophosphamide versus Intravenous Cisplatin plus Intravenous Cyclophosphamide for Stage III Ovarian Cancer.N Engl J Med 1996; 335:1950-1955December 26, 1996

Ovary (Dysgerminoma ,Embryonal, endodermal sinus tumor, immature teratoma, or mixed histology)

BEP 3 day regimen		
Etoposide	165mg/m^2	Day1,2,3
Cisplatin	35 mg/m^2	Day1,2,3
± Bleomycin	30 U	Day1,8,15
21 days intervals x 3-4course		

BEP 5 day regimen		
Etoposide	100 mg/m^2	Day1-5
Cisplatin	20 mg/m^2	Day1-5
± Bleomycin	30 units	Per week
21 days intervals x 3-4course		
Patients who do not respond to BEP may benefit from the following as salvage therapy (TIP):		
Cisplatin	35 mg/m^2	Day1,2,3
Ifosfamide	2 gm/m^2	Day2,3,4
Taxol	135 mg/m^2	Day1

Alberta Provincial Gynecologic Oncology Tumour Team. Ovarian germ cell tumours. Edmonton (Alberta): CancerControl Alberta; 2013 Apr. 12 p. (Clinical practice guideline; no. GYNE-001).

攝護腺癌

Principles of chemotherapy

Docetaxel + Prednisolone

Docetaxel	50-75 mg/m2	d1
Prednisolone	10mg/day	
Q3w		

Berthold DR et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer: updated survival in the TAX 327 study. J Clin Oncol 2008; 26:242 (link to the article).

Docetaxel + Prednisolone

Docetaxel	30 mg/m2	d1,8,15,22,29
Prednisolone	10mg/day	
Q6w		

Tannock IF et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer.N Eng J Med 2004; 351:1502.

Mitoxantrone + Prednisone

Mitoxantrone	12 mg/m2	d1
Prednisolone	10mg/day	
Q3w		

Tannock IF et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. N Eng J Med 2004; 351:1502.

Pembrolizumab

Pembrolizumab	200 mg	d1
Cycled every 21 days		

R.Hansen,C.Massard,P.A.Ott, et al.Pembrolizumab for advanced prostate adenocarcinoma: findings of the KEYNOTE-028 study.Annals of Oncology;Volume 29, Issue 8, August 2018, Pages 1807-1813

Cabazitaxel+ Prednisone

Cabazitaxel	20-25 mg/m2	d1
Prednisolone	10mg/day	
Q3w		

NCCN (National Comprehensive Cancer Network) Practice Guidelines in Oncology version 1. 2022 in Prostate Cancer.

Olaparib(Lynparza)

Olaparib(Lynparza)	300mg	po	BID
QD			

NCCN (National Comprehensive Cancer Network) Practice Guidelines in Oncology version 1. 2022 in Prostate Cancer.

泌尿道系統癌

Neoadjuvant or adjuvant chemotherapy for stage II, III and non-metastatic stage IV cancer

MVAC

Methotrexate	30 mg/m^2 iv		d1, 15 and 22
Vinblastine	3 mg/m^2 iv		d2, 15 and 22
Doxorubicin	30 mg/m^2 iv		d2
Cisplatin	70 mg/m2 iv	or Carboplatin AUC 4-6	d1 or 2
Q4w x 3 cycles			

Grossman HB et al. Neuadjuvant chemotherapy plus cystectomy compared with cystectomy alone for locally advanced bladder cancer. N Eng J Med 2003; 349:859

Gemcitabine (自費)+ Cisplatin (Carboplatin)

Gemcitabine	800 - 1000 mg/m^2 iv	d1, 8 and 15
Cisplatin	70 mg/m2 iv or Carboplatin AUC 4-6	d1
Q4w x 3 cycles		

Von der Maase H et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter, phase III study. J Clin Oncol 2000; 18:3068

CMV

Cisplatin	70 mg/m^2 iv	d2
Vinblastine	4 mg/m^2 iv	d1, 8 30 mg/m^2 iv
Q3w x 3 cycles		

Internationa Collaboration of Trialists. Neoadjuvant cisplatin, methotrexate, and vinblastine chemotherapy for muscle invasive bladder cancer: a randomized controlled trial. Lancet 1999; 354:533

Concurrent chemoradiation for stage II, III and non-metastatic stage IV cancer

Cisplatin

Cisplatin	30-40 mg/m2 iv	or	Carboplatin AUC 2	d1
Q1w x 6 cycles				

Tunio MA et al. Bladder preservation by neoadjuvant chemotherapy followed by concurrent chemoradiation for muscle-invasive bladder cancer: experience at Sindh Institute of Urology & Transplantation (SIUT). J Pak Med Assoc 2011; 61:6.

MVAC

Methotrexate	30 mg/m^2 iv	d1, 15 and 22
Vinblastine	3 mg/m^2 iv	d2, 15 and 22
Doxorubicin	30 mg/m^2 iv	d2
Cisplatin	70 mg/m2 iv or Carboplatin AUC 4-6	d1 or 2
Q4w x 6 cycles		

Han KS et al. Methotrexate, vinblastine, doxorubicin and cisplatin combination regimen as salvage chemotherapy for patients with advanced or metastatic transitional cell carcinoma after failure of gemcitabine and cisplatin chemotherapy. Br J Cancer 2008; 98:86. Logothetis CJ et al. A prospective randomized trial comparing MVAC with CISCA chemotherapy for patients with metastatic urothelial tumors. J Clin Oncol 1990; 8:1050.

Gemcitabine + Cisplatin(Carboplatin)

Gemcitabine	800 - 1000 mg/m2 iv	d1, 8 and 15
Cisplatin	70 mg/m2 iv	d2
Q4w x 6 cycles		

von der Maase H et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter
, phase III study. J Clin Oncol 2000; 18:3068

Paclitaxel +/- Cisplatin(Carboplatin)

Paclitaxel	80 mg/m^2 iv	d1, 8, 15
Cisplatin	70 mg/m2 iv or Carboplatin AUC 4-6	d1
Q4w x 6 cycles		

von der Maase H et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter
, phase III study. J Clin Oncol 2000; 18:3068

Immune therapy for Advanced or Metastic Disease

Nivolumab

Nivolumab	100-200mg mix N/S250ml IVD 1hour	d1
Q2W		

Prof Padmanee Sharma MD,Prof Margitta Retz MD,et al.Nivolumab in metastatic urothelial carcinoma after
platinum therapy (CheckMate 275): a multicentre, single-arm, phase 2 trial.The Lancet Oncology2017, 18:271-273

Keytruda

Keytruda	100-200mg mix N/S250ml IVD 1hour	d1
Q3W		

Joaquim Bellmunt, M.D., Ph.D., Ronald de Wit,et al. Pembrolizumab as Second-Line Therapy for Advanced
Urothelial Carcinoma.N Engl J Med 2017; 376:1015-1026

Enfortumab vedotin-ejfv

Enfortumab vedotin-ejfv	1.25mg/kg mix N/S100ml IVD 30mins	d1, 8 and 15
Q3W		

NCCN Clinical Practice Guidelines in Oncology Bladder Cancer.Version 3. 2023.

甲狀腺癌

標靶治療處方(Kinase Inhibitor Therapy)

Regimen	Agents/Dosages	Frequency
Dabrafenib/trametinib (BRAF V600E mutation positive)	Dabrafenib 150 mg PO and Trametinib 2 mg PO	Twice daily Once daily
Larotrectinib (NTRK gene fusion positive)	100 mg PO	Twice daily
Entrectinib (NTRK gene fusion positive)	600 mg PO	Once daily
Selpercatinib (RET fusion positive)	120 mg PO (< 50 kg) or 160 mg PO (≥ 50 kg)	Twice daily
Sorafenib (Nexavar)[a]	400mg Oral	Twice daily
Lenvatinib(Lenvima)[a]	24mg/ Oral	Daily
Vandetanib(Caprelsa)[b]	Max 300mg/ Oral	Daily
Pralsetinib (RET fusion positive)	400mg PO	Once daily

健保規範:

a. 用於放射性碘治療無效之局部晚期或轉移性的進行性(progressive)分化型甲狀腺癌(RAI-R DTC)：(1)需經事前審查核准後使用，每次申請之療程以 3 個月為限，送審時需檢送影像資料，每 3 個月評估一次。(2)Sorafenib 與 lenvatinib 僅得擇一使用，不得互換。(109/1/1)

b. 適用於無法進行手術切除的局部侵犯或轉移性甲狀腺髓質癌，並且為症狀性及疾病侵襲性的患者。(109/11/1)(1)需經事前審查核准後使用，每次申請之療程以 6 個月為限，送審時需檢送影像資料，每 6 個月評估一次。(2)出現疾病惡化或無法忍受之藥物不良反應，應立即停用。(3)每日最大劑量為 300 毫克

c.

Regimen	**Agents/Dosages**	**Frequency**
Paclitaxel	60-80 mg/m^2 IV	Weekly
Paclitaxel	135-150 mg/m^2 IV	Every3-4 weeks
Doxorubicin or Epirubicin/Pharmarubicin	20mg/m^2 IV 30mg/m^2 IV	Weekly Weekly
Doxorubicin or Epirubicin/Pharmarubicin	60-75 mg/m^2 IV 90-110 mg/m^2 IV	Every 3 weeks Every 3 weeks
Paclitaxel/carboplatin	Paclitaxel 60–80 mg/m2 , carboplatin AUC 2 IV or Paclitaxel 135–150 mg/m^2 , carboplatin AUC 5–6 IV	Weekly Every3–4 Weeks
Docetaxel/doxorubicin	Docetaxel 60 mg/m^2 IV, doxorubicin 60mg/m^2 IV or Epirubicin 90mg/m^2 (with pegfilgrastim) or Docetaxel 20 mg/m^2 IV, doxorubicin 20mg/m^2 IV or Epirubicin 30mg/m^2 IV	Every 3–4 weeks Weekly

Chemotherapy Regimen)Systemic Therapy Regimens for Metastatic Disease

免疫治療處方(Immunotherapy)

Regimen	Agents/Dosages	Frequency
Pembrolizumab (TMB-H [≥10 mut/Mb])	200mg IV or 400mg IV	Every 3 weeks Every 6 weeks

Adjuvant/Radiosensitizing Chemotherapy Regimens - Anaplastic Carcinoma

Regimen	Agents/Dosages	Frequency
Paclitaxel/carboplatin	Paclitaxel 50 mg/m2 , carboplatin AUC 2 IV	Weekly
Docetaxel/doxorubicin	Docetaxel 60 mg/m^2 IV, doxorubicin 60mg/m^2 IV or Epirubicin 90mg/m^2 Docetaxel 20 mg/m^2 IV, doxorubicin 20mg/m^2 IV or Epirubicin 30 mg/m^2 IV	Every 3–4 weeks Weekly
Paclitaxel	30–60 mg/m2 IV	Weekly
Cisplatin	30–35mg/m2 IV	Weekly
Doxorubicin or Epirubicin/Pharmarubicin	20mg/m2 IV or 30mg/m2 IV	Weekly Weekly
Doxorubicin or Epirubicin/Pharmarubicin	60mg/m2 IV or 90mg/m2 IV	Every 3 weeks Every 3 weeks

淋巴癌

Hodgkin lymphoma

Most common variants
ABVD：(doxorubicin、bleomycin、vinblastine、dacarbazine)
Doxorubicin (Adriamycin) 25 mg/m2 iv D1 and 15 Bleomycin 10 U/m2 iv D1 and 15 Vinblastine 6 mg/m2 iv D1 and 15 Dacarbazine (DTIC) 375 mg/m2 iv D1 and 15 Q4w

DLBCL

	Regimen	*Dosage	Reference
First- line	RCHOP	Rituximab 375 mg/m² i.v. on day 1 Cyclophosphamide 750 mg/m² i.v. on day 1 Doxorubicin 50 mg/m² i.v. on day 1 Vincristine 1.4 mg/m² i.v. on day 1(maximum dose of 2 mg) Prednisone 100mg p.o. daily on day1-5	McKelvey EM. cancer 1976;38:1484-1493.Lenz G. J clin Oncol 2005;23:1984-1992. Hiddemann W.Blood 2005;106:3725-3732
	RCEOP	Rituximab 375 mg/m² i.v. on day 1 Cyclophosphamide 750 mg/m² i.v. on day 1 Epirubicin 50 mg/m² i.v. on day 1 Vincristine 1.4 mg/m² i.v. on day 1(maximum dose of 2 mg) Prednisone 100mg p.o. daily on day1-5	
	DA-EPOCH + Rituximab	Etoposide Prednisone Vincristine Cyclophosphamide Doxorubicin	
註: patients >80 of age with comorbidities R-mini CHOP			
Second-line	DHAP± Rituximab	Cisplatin 80-100 mg/m² CIVI over 24 h on day 1 Cytarabine 2000 mg/m² i.v. q12h x2 dose on day 2 Dexamethasone 40 mg/m² p.o./i.v. daily on day 1-4 Repeat cycle every21-28 d	Velasquez WS. Blood 1988;71:117-122.
	ESHAP± Rituximab	Etoposide 40 mg/m² i.v. daily on days 1-4 Methylprednisolone 500 mg/m² i.v. daily on days 1-5 Cytarabine 2000 mg/m² CIVI on day 5 Cisplatin 25 mg/m² i.v. daily on days 1-4 Repeat cycle every21-28 d	Velasquez WS. J clin Oncol 1994;12:1169-1176.
	ICE± Rituximab	Ifosfamide 5000 mg/m² CIVI over 24h on day 2 Mesna 5000 mg/m² CIVI over 24h on day 2 Carboplatin AUC 5 i.v. on day 2(maximum dose of 800 mg) Etoposide 100 mg/m² i.v. daily on days 1-3 ±rituximab 375 mg/m² i.v. 48 h before start of cycle 1 and on day 1 of each cycle	Moskowitz CH0J clin oncol 1999;17:3776-3785. Kewalramans T. blood 2004;103:3684-3688

		Repeat cycle every 14-15 d	
	Polatuzumab vedotin-piiq ± bendamustine ± rituximab	Polatuzumab vedotin-piiq (Polivy) 1.8mg/kg i.v. at 90min repeat cycle every 21 d ± Benamustine 90mg/m^2/day on day1, day2 ± rituximab 375 mg/m² i.v. on day 1 Total 6 cycle	Morschhauser F, Flinn IW, Advani R, et al. Polatuzumab vedotin or pinatuzumab vedotin plus rituximab in patients with relapsed or refractory non-Hodgkin lymphoma: final results from a phase 2 randomised study (ROMULUS). Lancet Haematol 2019;6:e254-e265. Sehn LH, Herrera AF, Flowers CR, et al. Polatuzumab vedotin in relapsed or refractory diffuse large B-cell lymphoma. J Clin Oncol 2020;38:155-165.
	RB	Rituximab 375 mg/m² i.v. on day 1 Bendamustine 90-120mg/m^2 day 1-2	

Follicular Lymphoma

	Regimen	Dosage	Reference
First- line	RCHOP	Rituximab 375 mg/m² i.v. on day 1 Cyclophosphamide 750 mg/m² i.v. on day 1 Doxorubicin 50 mg/m² i.v. on day 1 Vincristine 1.4 mg/m² i.v. on day 1(maximum dose of 2 mg) Prednisone 100mg p.o. daily on day1-5	McKelvey EM. cancer 1976;38:1484-1493.Lenz G. J clin Oncol 2005;23:1984-1992. Hiddemann W.Blood 2005;106:3725-3732
	RCEOP	Rituximab 375 mg/m² i.v. on day 1 Cyclophosphamide 750 mg/m² i.v. on day 1 Epirubicin 50 mg/m² i.v. on day 1 Vincristine 1.4 mg/m² i.v. on day 1(maximum dose of 2 mg) Prednisone 100mg p.o. daily on day1-5	
	BR	Rituximab 375 mg/m² i.v. on day 1 Bendamustine 90-120mg/m2 day 1-2	
	GB	Bendamustine 90-120mg/m2 day 1-2 Obinutuzumab maintenance (1000 mg every 8 weeks for 12 doses)	
	RCOP	Rituximab 375 mg/m² i.v. on day 1 Cyclophosphamide 750 mg/m² i.v. on day 1 Vincristine 1.4 mg/m² i.v. on day 1(maximum dose of 2 mg) Prednisone 100mg p.o. daily on day1-5	
Second-line	DHAP± Rituximab	Cisplatin 100 mg/m² CIVI over 24 h on day 1 Cytarabine 2000 mg/m² i.v. q12h x2 dose on day 2 Dexamethasone 40 mg/m² p.o./i.v. daily on day 1-4 Repeat cycle every21-28 d	Velasquez WS. Blood 1988;71:117-122.
	ESHAP± Rituximab	Etoposide 40 mg/m² i.v. daily on days 1-4 Methylprednisolone 500 mg/m² i.v. daily on days 1-5 Cytarabine 2000 mg/m² CIVI on day 5 Cisplatin 25 mg/m² i.v. daily on days 1-4	Velasquez WS. J clin Oncol 1994;12:1169-1176.

		Repeat cycle every21-28 d	
	ICE± Rituximab	Ifosfamide 5000 mg/m² CIVI over 24h on day 2 Mesna 5000 mg/m² CIVI over 24h on day 2 Carboplatin AUC 5 i.v. on day 2(maximum dose of 800 mg) Etoposide 100 mg/m² i.v. daily on days 1-3 ±Rituximab 375 mg/m² i.v. 48 h before start of cycle 1 and on day 1 of each cycle Repeat cycle every 14-15 d	Moskowitz CH0J clin oncol 1999;17:3776-3785. Kewalramans T. blood 2004;103:3684-3688

兒癌
Non-Hodgkin's lymphoma

TPOG 10 ALCL: Chemotherapy Dose and Schedule in Each Course(administered every 3 wk)

Course and Drug	Dose and Schedule
Prephase	
Dexamethasone	5 mg/m^2 on days 1 and 2; 10 mg/m^2 on days 3 to 5
Cyclophosphamide	200 mg/m^2 on days 1 and 2
Triple intrathecal injection	Day 1
Course A	
Dexamethasone	10 mg/m^2 on days 1 to 5
Methotrexate	3 g/m^2 in 3-hour infusion on day 1
Ifosfamide	800 mg/m^2 on days 1 to 5
Cytarabine	150 mg/m^2 x 2 on days 4 and 5
Etoposide	100 mg/m^2 on days 4 and 5
Course B	
Dexamethasone	10 mg/m^2 on days 1 to 5
Methotrexate	3 g/m^2 in 3-hour infusion on day 1
Cyclophosphamide	200 mg/m^2 on days 1 to 5
Doxorubicin	25 mg/m^2 on days 4 and 5

* Leucovorin rescue (15 mg/m^2 every 6 hours) starting at 24 hours of start of MTX infusion and ending when the methotrexate level was < 0.15 μm/L.

Acute Lymphoid Leukemia

TPOG-ALL-2013 Continuation Therapy (1)

Week	VHR/HR	SR
1	DEX + EPI + VCR + 6MP + ASP	6MP + DEX + VCR
2	6MP + ASP	6MP + MTX
3	# 6MP + ASP	*6MP + MTX
4	DEX + EPI + VCR + 6MP + ASP	6MP + DEX + VCR
5	6MP + ASP	6MP + MTX
6	6MP + ASP	6MP + MTX
7	*(Reind I)DEXx8d+VCR+EPI+ ASPx3	*(Reind)DEXx8d+VCR+EPI+ASPx3
8	(Reind I) VCR+EPI+ASPx3	(Reind) VCR+ASPx3
9	(Reind I)DEXx7d+VCR+ASPx3	(Reind)DEXx7d+VCR+ASPx3
10	6MP + ASP	6MP + MTX

TPOG-ALL-2013 Continuation Therapy (2)

Drug dosages, schedules and routes for continuation therapy weeks

DEX (dexamethasone)	12 mg/m2(VHR/HR) or 8 mg/m2 (SR) PO daily (tid) x 5 days, Days 1-5
EPI (epirubicin)	30 mg/m2 IV, Day 1
VCR (vincristine)	2.0 mg/m2 IV push (max. 2 mg), Day 1 (0.05 mg/kg for patients < 1 year of age or< 10kg in weight)
6MP (6-mercaptopurine)	40 mg/m2 PO h.s.daily x 7 days (VHR/ HR), Days 1-7 50 mg/m2 PO h.s. daily x 7 days (SR), Days 1-7
ASP (L-asparaginase)	10,000 U/m2 IM, Day 1
MTX (methotrexate)	40 mg/m2 IV or IM, Day 1

TPOG-ALL-2013 Continuation Therapy (3) Reinduction for SR ALL(3weeks)

Agents	Dosages and routes	Doses	Schedules
Dexamethasone	10 mg/m2/day PO (t.i.d.)	45	Days 1-8, 15-21
Vincristine	1.5 mg/m2/week IV (max 2 mg)	3	Days 1, 8, 15
L-asparaginase	6,000 U/m2 thrice weekly IM	9	Days 3, 5, 7, 10,12,14,17,19,21
Epirubicin	30 mg/m2/week IV	1	Day 1

TPOG-ALL-2013 Continuation Therapy (4) Reinduction I for VHR/HR ALL excluding infant with MLL+(3 weeks)

Agents	Dosages and routes	Doses	Schedules
Dexamethasone	12 mg/m2/day PO (t.i.d.)	45	Days 1-8, 15-21
Vincristine	1.5 mg/m2/week IV (max 2 mg)	3	Days 1, 8, 15
Epirubicin	30 mg/m2	2	Days 1,8
L-asparaginase	6,000 U/m2/thrice weekly IM	9	Days 3, 5, 7, 10,12,14,17,19,21
Methotrexate + hydrocortisone + ara-C	Age-dependent, IT	1	Day 1

TPOG-ALL-2013 Continuation Therapy (5) Reinduction I for infant with MLL

Agent	Dosage and Route	Doses	Schedule
Dexamethasone	8 mg/m2/day (divided t.i.d)	45	Days 1-8; 15-21
Clofarabine	25 mg/m2/day, 2-hour IV infusion	5	Days 1-5
Etoposide	100 mg/m2/day, 2-hour IV infusion	5	Days 1-5
Cyclophosphamide	300 mg/m2/day, 1-hour IV infusion	5	Days 1-5
L-asparaginase	6,000 U/m2 thrice weekly IM	9	Days 3, 5, 7, 10,12, 14,

For infants < 1 month of age, or for infants < 3 months of age born significantlyprematurely, a 50% reduction idosages of asparaginase, etoposide, cyclophosphamide, epirubicin, and clofarabine should be made.

TPOG-ALL-2013 Continuation Therapy (6)

Week	VHR/HR	SR
11	EPI + VCR + 6MP + ASP	6MP + MTX
12	*6MP + ASP	* 6MP + MTX
13	6MP + ASP	6MP + MTX
14	DEX + EPI + VCR + 6MP + ASP	6MP + DEX + VCR
15	6MP + ASP	6MP + MTX
16	6MP + ASP	6MP+ MTX
17	*(Reind II)DEXx8d+VCR+ASPx3	*6MP + DEX + VCR
18	(Reind II) VCR+ ASPx3	6MP + MTX
19	(Reind II)DEXx7d+VCR+ASPx3	6MP + MTX
20	6MP + MTX	6MP + DEX + VCR

TPOG-ALL-2013 Continuation Therapy (7)
Reinduction II for VHR/HR ALL including infant with MLL+(3 weeks)

Agents	Dosages and routes	Doses	Schedules
Dexamethasone	12 mg/m2/day PO (t.i.d.)	45	Days 1-8, 15-21
Vincristine	1.5 mg/m2/week IV (max 2 mg)	3	Days 1, 8, 15
L-asparaginase	6,000 U/m2/thrice weekly IM	9	Days 3, 5, 7, 10,12,14,17,19,21
Methotrexate+ hydrocortisone + ara-C	Age-dependent, IT	1	Day 1

TPOG-ALL-2013 Continuation Therapy (8) Treatment (weeks 21 to end of therapy)

Week	VHR , HR	SR
21	6MP + MTX	6MP + MTX
22	6MP + MTX	6MP + MTX
23	Cyclo + Ara-C	6MP + MTX
24	*DEX + VCR	*6MP + DEX + VCR
25	6MP + MTX	6MP + MTX
26	6MP + MTX	6MP + MTX
27	Cyclo + Ara-C	6MP + MTX
28	*DEX + VCR	(*) 6MP + DEX + VCR

IT MHA for standard-risk cases, TEL-AML1 fusion and hyperdiploidy (51-68) with WBC > 100,000/mm3 , CNS-2 or traumatic lumbar puncture withblast.

TPOG-ALL-2013 Continuation Therapy (9)

6MP (6-mercaptopurine)	60 mg/m2 PO h.s. daily x 7 days, Days 1-7
MTX (methotrexate)	40 mg/m2 IV or IM (or PO, if parenteral route is not feasible), Day 1
Cyclo (Cyclophosphamide)	300 mg/m2 IV, Day 1 (VHR/HR)
Ara-C (Cytarabine)	300 mg/m2 IV, Day 1 (VHR/HR)
DEX (dexamethasone) (decreases to 6 mg/m2 beginning week 68)	12 mg/m2 (VHR/HR) or 8 mg/m2 (SR) PO daily (tid) x 5, Day 1-5
VCR (vincristine)	2.0 mg/m2 IV push (max. 2 mg), Day 1

The same treatment (weeks 21-28) will be repeated for a total of 6 times (until week 68). After week 68, cyclophosphamide and cytarabine will be replaced by daily 6MP and methotrexate; all patients will then receive daily 6MP and weekly MTX with pulses of dexamethasone and vincristine every 4 weeks until week 100, after which only 6MP and methotrexate will be give