

乳癌診療指引

一、參與討論同仁

主席	彭汪嘉康院士 (血腫科)	
	邱仲峯副院長 (放腫科)	
附設醫院	王文科主任 (乳房外科)	韓閔芝個管師 (癌症中心)
	曾慧恩主任 (血腫科)	吳庠螢個管師 (癌症中心)
	沈陳石銘醫師 (乳房外科)	
萬芳醫院	張渭文主任 (乳房外科)	陳淑玲個管師 (癌症中心)
雙和醫院	洪進昇主任 (乳房外科)	吳孟潔個管師 (癌症中心)
	蔡若婷主任 (放腫科)	蔡吉兒領航師 (癌症中心)
臺北癌症中心	杜世興副院長 (乳房外科)	趙祖怡副院長 (血腫科)

二、討論日期：108 年 11 月 06 日

三、校稿人員：洪進昇主任 / 吳孟潔個管師、蔡吉兒領航師

107 年版與上一版差異：

107 年版

DCIS

- * 修訂 Partial mastectomy ± SLNB + whole breast radiation therapy (± R/T) 及 Total mastectomy + SLNB ± reconstruction (± H/T)

第一期 Stage IA

- * ER(-) and PR(-) $T \leq 0.5\text{cm}$ 增加 C/T ± Herceptin (Her2+)
- * ER(-) and PR(-) $0.5\text{cm} < T \leq 1.0\text{cm}$ 增加 ± C/T, 修改 Her-2(+)->Consider C/T + Herceptin
- * ER(-) and PR(-) $1.0\text{cm} < T \leq 2.0\text{cm}$ 增加 C/T, 修改 Her-2(+)->Consider C/T + Herceptin
- * 追蹤修訂為理學 / 血液檢查：至少每六個月一次、乳房超音波：每六個月一次

第二期 Stage IIA

- * 新增附註 9. TNBC with residual invasive cancer following standard neoadjuvant therapy: Consider adjuvant capecitabine (自費使用)
- * 新增附註 10. ER (-), PR (-) and Her2 (+) Node (+) patients: Consider adjuvant chemotherapy + Herceptin ± Pertuzumab
- * 追蹤修訂為理學 / 血液檢查：至少每六個月一次、乳房超音波：每六個月一次

108 年修訂版

DCIS

- * 主要治療劃分成 Partial mastectomy ± SLNB 及 Total mastectomy + SLNB ± reconstruction 兩個區塊，及輔助治療上劃分出 ± R/T。
- * 輔助治療劃分成修訂為輔助性治療、荷爾蒙接受體。
- * 新增備註 The conditions for not applying hormone therapy are as follows (e.g. Post-total mastectomy, elderly > 60y, Low risk, optional)
- * 荷爾蒙接受體 ER(+) 增加備註 (optional)

刪除 LCIS 路徑

第一期 Stage IA

- * 荷爾蒙接受體、腫瘤大小、輔助治療位置修訂為腫瘤大小、荷爾蒙接受體、輔助治療。
- * $T \leq 0.5\text{cm}$, ER(-) and PR(-) 增加 1. No adjuvant C/T 2. Her-2(+) Consider C/T + Trastuzumab*
- * 將 Herceptin 修訂為 Trastuzumab。

第二期 Stage IIA

- * 主要治療 Neoadjuvant C/T ± Targeted therapy 增加 (for Her-2 +, Anti-Her-2 treatment)
- * 荷爾蒙接受體、輔助治療位置修訂為輔助治療、荷爾蒙接受體。
- * 輔助治療 1. C/T 2. Her-2 (+) → Consider Trastuzumab 增加 (± Perjeta) or TDM-1 (non-PCR)
- * 增加備註 11. Anti-Her-2 treatment: Herceptin, Trastuzumab, Dual, TDM-1
- * 將 Herceptin 修訂為 Trastuzumab。

107 年版

第三期 Stage IIIA

- * 新增附註 6. TNBC with residual invasive cancer following standard neoadjuvant therapy: Consider adjuvant capecitabine (自費使用)
- * 新增附註 7. ER (-), PR (-) and Her2 (+) Node (+) patients: Consider adjuvant chemotherapy + Herceptin ± Pertuzumab
- * 追蹤修訂為理學 / 血液檢查: 至少每六個月一次、乳房超音波: 每六個月一次

第四期 Stage IV

- * 增加 ER and/or PR (+), Her-2 (-): Hormonal therapy ± CD4/6 or mTOR inhibitor ± chemotherapy

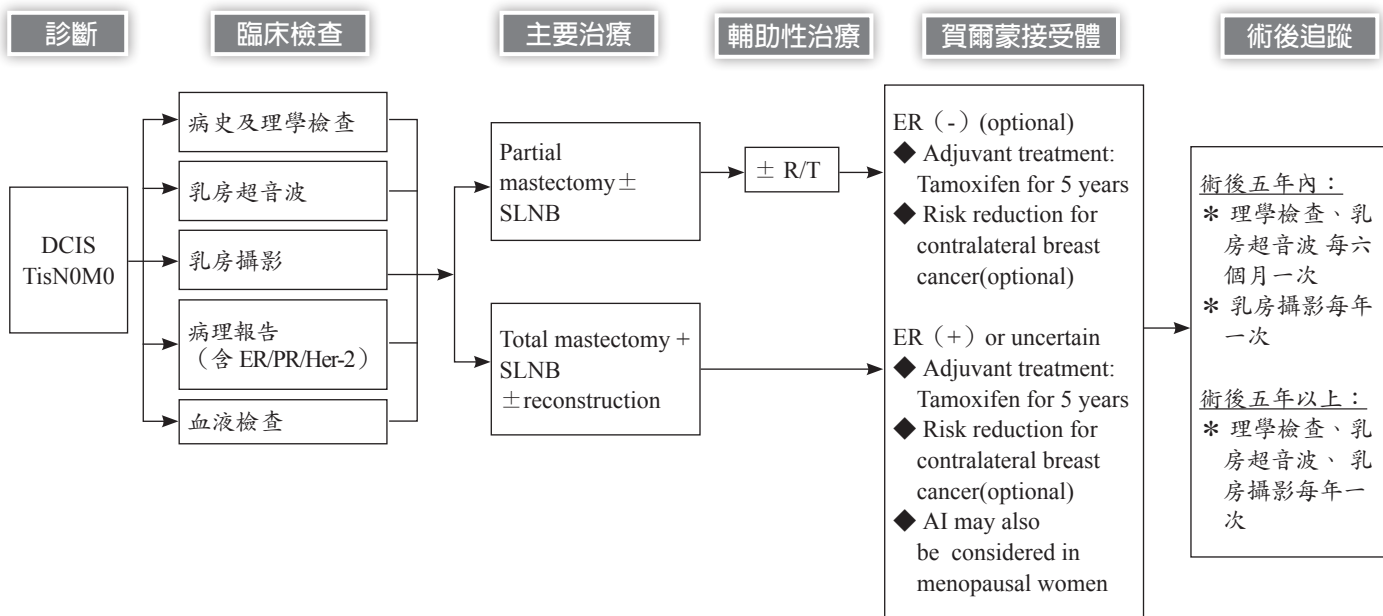
108 年修訂版

第三期 Stage IIIA

- * 荷爾蒙接受體、輔助治療位置修訂為輔助治療、荷爾蒙接受體。
- * 新增 for Her-2 positive 在主要治療的 Neoadjuvant chemotherapy ± Targeted therapy。
- * 主要治療反應不良改為反應不佳 ≤ PR。
- * 主要治療修訂個人化治療。
- * 主要治療修訂為反應好 → 手術 (>PR)。
- * 主要治療的反應不良改為反應不佳。
- * 將 Herceptin 修訂為 Trastuzumab。

第四期 Stage IV

- * TNBC → Immunotherapy (PD-L1 ≥ 1%) or PARP inhibitor (gBRCA mutation)

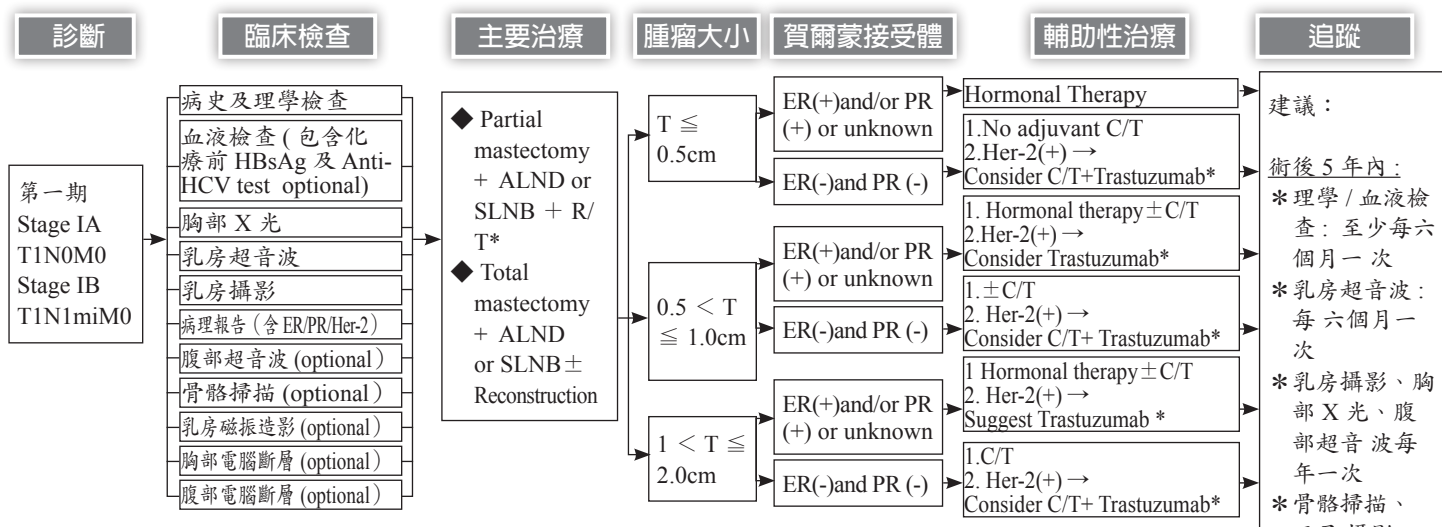


*Radiotherapy may be omitted in selected low-risk patients with advanced age, extensive comorbidities, or small foci of low-grade disease resected with negative margins (e.g. Age >60y, Tumor ≤ 15mm, Low grade...)

*The conditions for not applying hormone therapy are as follows (e.g. Post-total mastectomy, Elderly>60y, Low-risk, optional)

#Post-total mastectomy hormone therapy (optional)

《 乳癌診療指引共識 -2 》



附註：依 NCCN-2013.V2 版建議 Stage I 臨床檢查加入考量生殖需求

1. Stage I & II favorable histology include tubular and colloid. 須參考 NCCN guideline，經由團隊會議討論決定治療方式

2. Clinical trial is always an option of treatment.

3. Oncotype or Endopredict、ICT、Mammoprint、Pam50 test is optional examination for ambiguous patients.

4. * Trastuzumab 依健保使用規定或自費使用

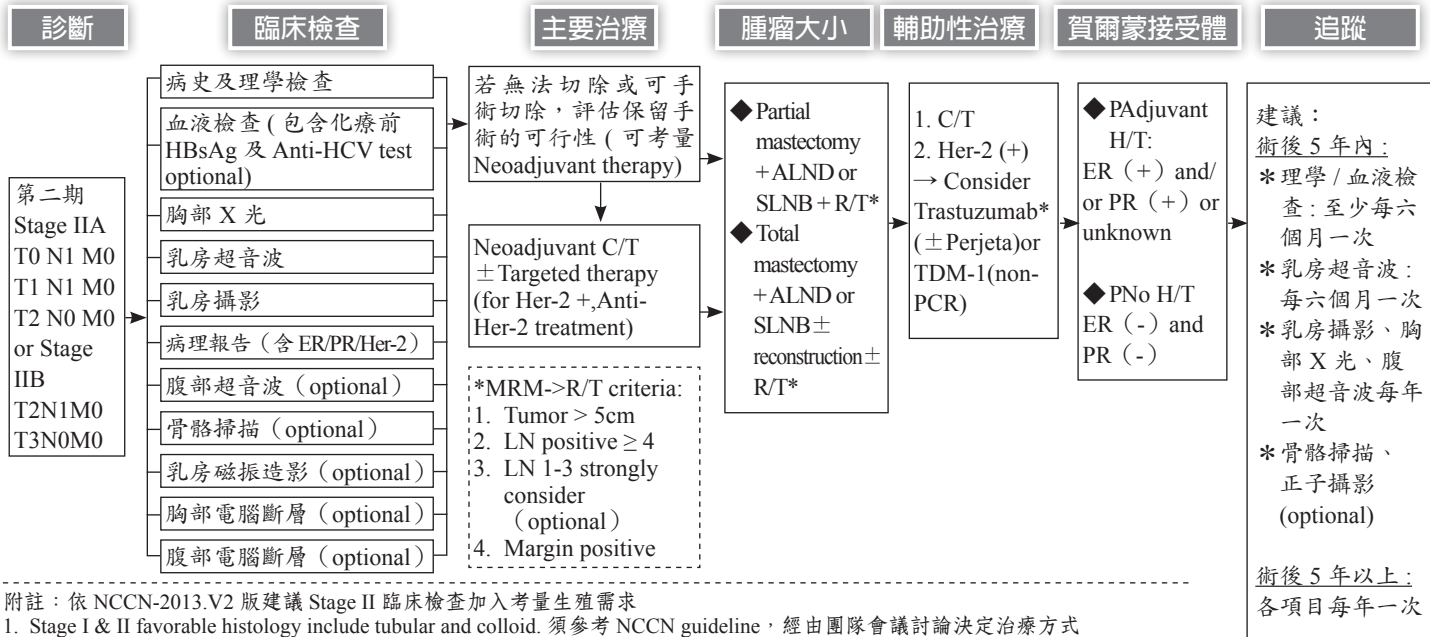
5. 考慮接受化學治療或 Carrier 血液檢查 (需包含化療前 HBsAg 及 Anti-HCV test)

6. RT*: Whole breast radiotherapy(WBRT) or Partial breast radiotherapy(PBRT), PBRT 符合條件：參閱一校三院放腫指引；≥ 70 歲，T1N0 且 ER + PR + 並同時有做 H/T 病患於乳房保留手術，經由團隊會議討論後得可慮不用 RT。

7. 血液檢查 (包含化療前 HBsAg 及 Anti-HCV test optional)

8. Hormonal therapy: Tamoxifen 服用 5-10 年 ;AI 服用 5-10 年。

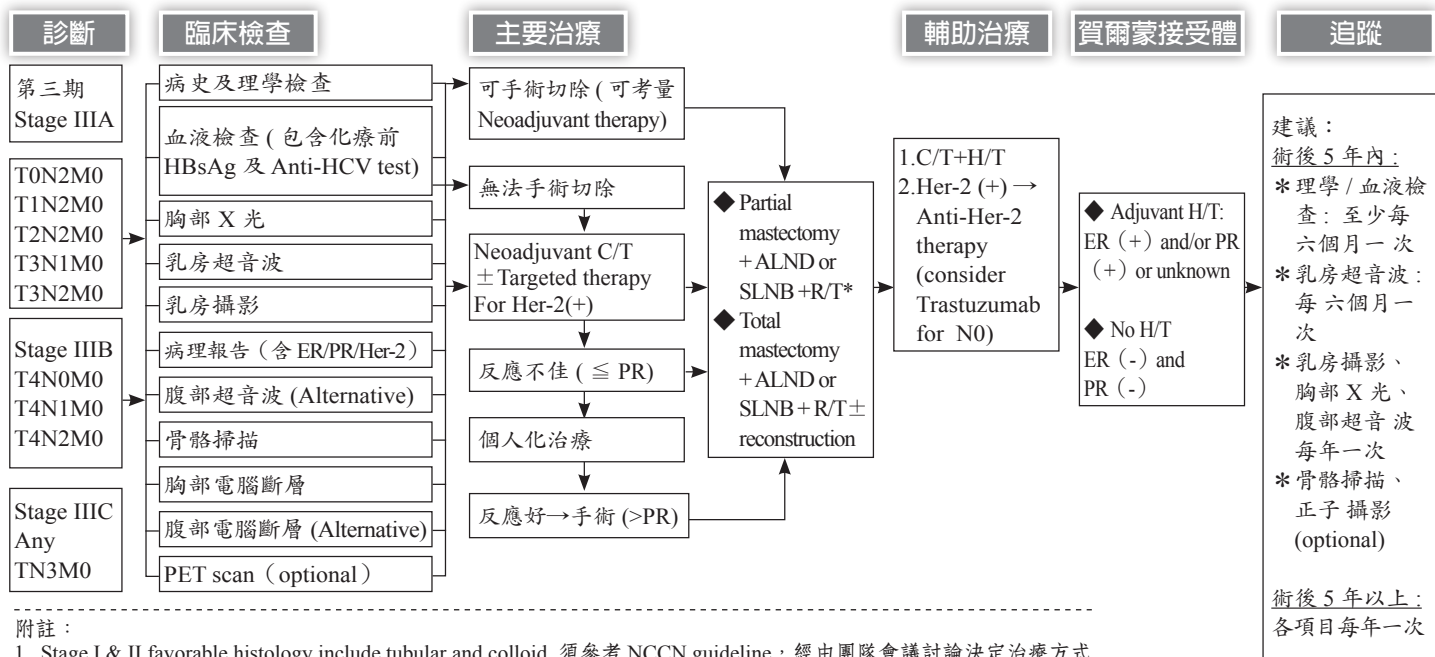
9. 主要治療 Total mastectomy=Simple mastectomy



附註：依 NCCN-2013.V2 版建議 Stage II 臨床檢查加入考量生殖需求

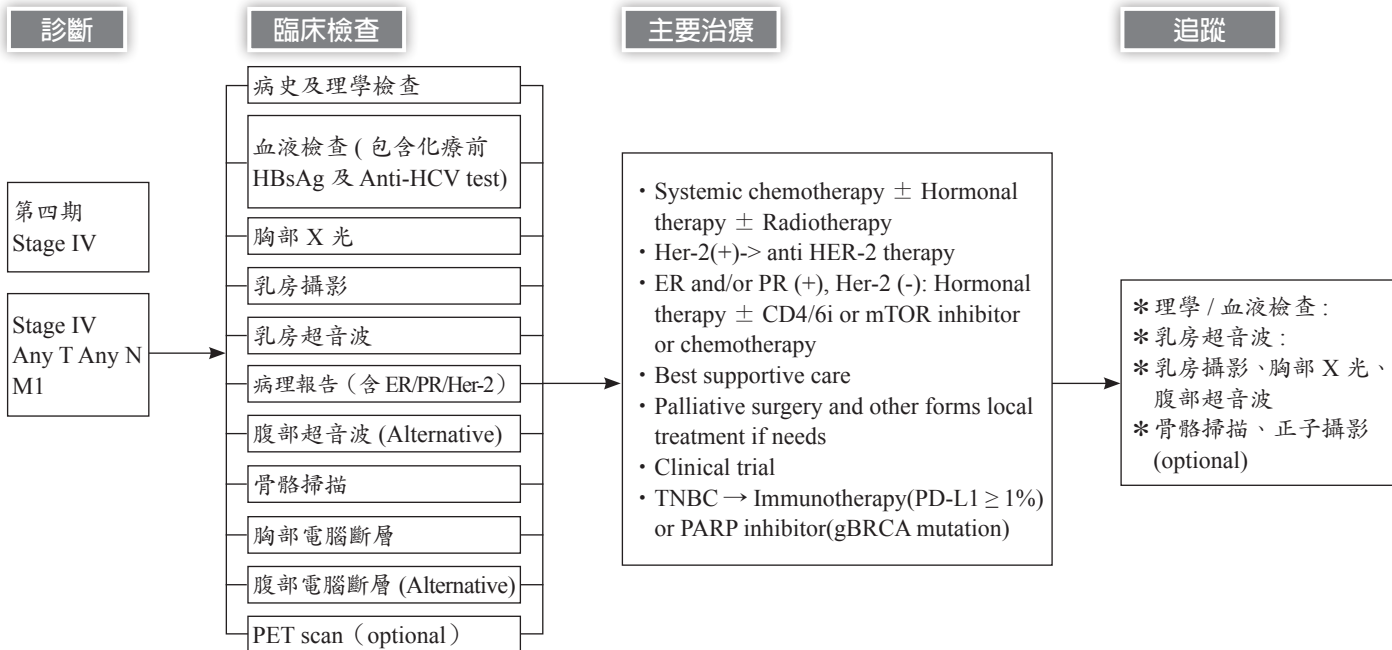
1. Stage I & II favorable histology include tubular and colloid. 須參考 NCCN guideline，經由團隊會議討論決定治療方式
2. Clinical trial is always an option of treatment.
3. Oncotype or Endopredict、ICT、Mammoprint、Pam50test is optional examination for ambiguous patients.
4. * Trastuzumab 依健保使用規定或自費使用
5. 考慮接受化學治療或 Carrier 血液檢查 (需包含化療前 HBsAg 及 Anti-HCV test)
6. RT*: Whole breast radiotherapy(WBRT) or Partial breast radiotherapy(PBRT), PBRT 符合條件 :RT*: 參閱一校三院放腫指引
7. 血液檢查 (包含化療前 HBsAg 及 Anti-HCV test optional)
8. 主要治療 Total mastectomy=Simple mastectomy
9. TNBC with residual invasive cancer following standard neoadjuvant therapy: Consider adjuvant capecitabine (自費使用)
10. ER (-), PR (-) and Her2 (+) Node (+) patients: Consider adjuvant chemotherapy + Trastuzumab ± Pertuzumab
11. Anti-Her-2 treatment: Trastuzumab, Dual-Blockade, TDM-1

《乳癌診療指引共識 -4》



附註：

1. Stage I & II favorable histology include tubular and colloid. 須參考 NCCN guideline，經由團隊會議討論決定治療方式
2. Clinical trial is always an option of treatment.
3. RT*: 參閱一校三院放腫指引
4. Abdomen sono or abdomen CT Alternative
5. 主要治療 Total mastectomy=Simple mastectomy
6. TNBC with residual invasive cancer following standard neoadjuvant therapy: Consider adjuvant capecitabine (自費使用)
7. ER (-), PR (-) and Her2 (+) patients: Consider adjuvant chemotherapy + Trastuzumab ± Pertuzumab
8. 完全有效 (完整響應, CR), 部分有效 (Partial Response, PR), 無變化 (No Change, NC; 疾病穩定, SD), 疾病進展 (Progressive Disease, PD)



附註：

1. Stage I & II favorable histology include tubular and colloid. 須參考 NCCN guideline，經由團隊會議討論決定治療方式
2. Clinical trial is always an option of treatment.
3. Abdomen sono or abdomen CT Alternative
4. Anti -HER-2 therapy 依健保規範或自費使用

《參考文獻》

1. NCCN Clinical Practice in Oncology: Breast Cancer V.3.2018
2. NCCN Clinical Practice in Oncology: Breast Cancer V.2.2017.
3. Jemal A, Siegel R, Xu J, Ward E. Cancer statistics, 2010. *CA CancerJ Clin* 2010;60:277-300.
4. Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: an overview of the randomised trials. *Lancet* 2005;365:1687-1717.
5. Edge SB, Byrd DR, Compton CC, et al., eds. *AJCC Cancer Staging Manual*, 7th Edition. New York: Springer; 2010
6. Allred DC, Carlson RW, Berry DA, et al. NCCN Task Force Report: Estrogen Receptor and Progesterone Receptor Testing in Breast Cancer by Immunohistochemistry. *J Natl Compr Canc Netw* 2009;7 Suppl 6:1-1.
7. Dybdal N, Leiberman G, Anderson S, et al. Determination of HER2 gene amplification by fluorescence in situ hybridization and concordance with the clinical trials immunohistochemical assay in women with metastatic breast cancer evaluated for treatment with trastuzumab. *Breast Cancer Res Treat* 2005;93:3-11.
9. Chuba PJ, Hamre MR, Yap J, et al. Bilateral risk for subsequent breast cancer after lobular carcinoma-in-situ: analysis of surveillance, epidemiology, and end results data. *J Clin Oncol* 2005;23:5534-5541.
10. Anderson BO, Calhoun KE, Rosen EL. Evolving concepts in the management of lobular neoplasia. *J Natl Compr Canc Netw* 2006;4:511-522.
11. Fisher B, Costantino JP, Wickerham DL, et al. Tamoxifen for the prevention of breast cancer: current status of the National Surgical Adjuvant Breast and Bowel Project P-1 study. *J Natl Cancer Inst* 2005;97:1652-1662.
12. Vargas C, Kestin L, Go N, et al. Factors associated with local recurrence and cause-specific survival in patients with ductal carcinoma in situ of the breast treated with breast-conserving therapy or mastectomy. *Int J Radiat Oncol Biol Phys* 2005;63:1514-1521.
13. Sagara Y, Freedman RA, Vaz-Luis I, et al. Patient prognostic score and associations with survival improvement offered by radiotherapy after breast-conserving surgery for ductal carcinoma in situ: a population-based longitudinal cohort study. *J Clin Oncol*. 2016;1190-1196.

《 乳癌抗癌藥物治療指引 》

Chemotherapy as Primary or Adjuvant Therapy (HER2-POSTIVE)

Doxorubicin may be replaced by Epirubicin 90 mg/m²

PREFERRED REGIMENS

AC followed by Paclitaxel with Trastuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	1
Cyclophosphamide	600	1	Q3W	4	
Followed by					
Trastuzumab	4 → 2 mg/kg	1	QW	12	
Paclitaxel	80	1	QW	12	
Followed by					
Trastuzumab	2 (6) mg/kg	1	QW (Q3W)	40 (13)	

AC followed by Paclitaxel with Trastuzumab + Pertuzumab (optional)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	6
Cyclophosphamide	600	1	Q3W	4	
Followed by					
Trastuzumab	8 → 6 mg/kg	1	Q3W	17	
Pertuzumab*	840 → 420 mg	1	Q3W	17	
Paclitaxel	80	1, 8, 15	Q3W	4	

*Optional

Dose-dense AC followed by Paclitaxel with Trastuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q2W	4	2
Cyclophosphamide	600	1	Q2W	4	
Followed by					
Trastuzumab	4 → 2 mg/kg	1, 8	Q2W	4	
Paclitaxel	175	1	Q2W	4	
Followed by					
Trastuzumab	2 (6) mg/kg	1	QW (Q3W)	44 (14)	

TCH

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	4 → 2 mg/kg	1, 8, 15	Q3W	6	3
Docetaxel	75	1	Q3W	6	
Carboplatin	6 AUC	1	Q3W	6	
Followed by					
Trastuzumab	6 mg/kg	1	Q3W	11	

TCH + Pertuzumab (optional)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 mg/kg	1	Q3W	17	4
Pertuzumab*	840 → 420 mg	1	Q3W	17	
Docetaxel	75	1	Q3W	6	
Carboplatin	6 AUC	1	Q3W	6	

*Optional

Paclitaxel + Trastuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	4 → 2 mg/kg	1	QW	12	5
Paclitaxel	80	1	QW	12	
Followed by Trastuzumab	2 (6) mg/kg	1	QW (Q3W)	40 (13)	

Trastuzumab + Pertuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 mg/kg	1	Q3W	17	7
Pertuzumab*	840 → 420 mg	1	Q3W	17	

*Optional

T-DM1

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
T-DM1	3.6 mg/kg	1	Q3W	14	7

OTHER REGIMENS

AC followed by Docetaxel with Trastuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	3
Cyclophosphamide	600	1	Q3W	4	
Followed by					
Trastuzumab	4 → 2 mg/kg	1, 8, 15	Q3W	4	
Docetaxel	80-100	1	Q3W	4	
Followed by					
Trastuzumab	6 mg/kg	1	Q3W	13	

AC followed by Docetaxel with Trastuzumab + Pertuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	3
Cyclophosphamide	600	1	Q3W	4	
Followed by					
Trastuzumab	8 → 6 mg/kg	1	Q3W	17	
Pertuzumab*	840 → 420 mg	1	Q3W	17	
Docetaxel	80-100	1	Q3W	4	

*Optional

Paclitaxel + Trastuzumab (APT trial)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	4 → 2 mg/kg	1	QW	12	5
Paclitaxel	80	1	QW	12	
Followed by					
Trastuzumab	2 (6) mg/kg	1	QW (Q3W)	40 (13)	

TC + Trastuzumab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	4 → 2 (8 → 6) mg/kg	1, 8, 15 (1)	Q3W	4	6
Docetaxel	75	1	Q3W	4	
Cyclophosphamide	600	1	Q3W	4	
Followed by					
Trastuzumab	6 mg/kg	1	Q3W	13	

Neoadjuvant therapy (HER2-Positive)

同 adjuvant therapy

參考文獻

1. Romond EH, Perez EZ, Bryant J, et al. Trastuzumab plus adjuvant chemotherapy for operable HER2 positive breast cancer. *N Engl J Med* 2005;353:1673-1684.
2. Dang C, Fomier M, Sugarman S, et al. The safety of dose-dense doxorubicin and cyclophosphamide followed by paclitaxel with trastuzumab in HER2/neu over expressed/amplified breast cancer. *J Clin Oncol.* 2008;26(8):1216-1222.
3. Slamon D, Eiermann W, Robert N, et al. Adjuvant trastuzumab in HER2-positive breast cancer. *N Engl J Med* 2011;365:1273-1283.
4. 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.
5. Tolaney S, Barry W, Dang C, et al. Adjuvant paclitaxel and trastuzumab for node-negative HER2-positive breast cancer. *N Engl*

- J Med 2015;372:134-141.
6. Jones SE, Collea R, Paul D, et al. Adjuvant docetaxel and cyclophosphamide plus trastuzumab in patients with HER2-amplified early stage breast cancer: a singlegroup, open-label, phase 2 study. Lancet Oncol 2013;14:1121-8.
 7. Minckwitz G, Huang C, Mano M, et al. Trastuzumab emtansine for residual invasive HER2-positive breast cancer. N Engl J Med 2019;380:617-628.

Chemotherapy as Primary or Adjuvant Therapy (HER2-NEGATIVE)

Doxorubicin may be replaced by Epirubicin 90 mg/m²

PREFERRED REGIMENS

Dose-dense AC followed by Paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q2W	4	1
Cyclophosphamide	600	1	Q2W	4	
Followed by					
Paclitaxel	175	1	Q2W	4	

Dose-dense AC followed by weekly Paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q2W	4	1
Cyclophosphamide	600	1	Q2W	4	
Followed by					
Paclitaxel	80	1	QW	12	

TC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Docetaxel	75	1	Q3W	4	2
Cyclophosphamide	600	1	Q3W	4	

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Capecitabine	1000-1250 BID	1-14	Q3W	6-8	18

(If triple-negative breast cancer and residual disease after preoperative therapy with taxane, alkylator, and anthracycline based chemotherapy)

Useful in certain circumstances

Dose-dense AC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q2W	4	1
Cyclophosphamide	600	1	Q2W	4	

AC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	3
Cyclophosphamide	600	1	Q3W	4	

TAC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Docetaxel	75	1	Q3W	6	4
Doxorubicin	60	1	Q3W	6	
Cyclophosphamide	500	1	Q3W	6	

TEC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Docetaxel	75	1	Q3W	6	13
Epirubicin	75	1	Q3W	6	
Cyclophosphamide	500	1	Q3W	6	

FAC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
5-FU	500	1, 8 or 1, 4	Q3W	6	5, 6
Doxorubicin	50	1	Q3W	6	
Cyclophosphamide	500	1	Q3W	6	

CEF

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cyclophosphamide	500	1, 8	Q3W	6	7
Epirubicin	80	1, 8	Q3W	6	
5-FU	500	1, 8	Q3W	6	

CMF

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cyclophosphamide	100 PO	1-14	Q4W	6	16
Methotrexate	40	1, 8	Q4W	6	
5-FU	600	1, 8	Q4W	6	

AC followed by Docetaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	8
Cyclophosphamide	600	1	Q3W	4	
Followed by Docetaxel	80-100	1	Q3W	4	

AC followed by Paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	9
Cyclophosphamide	600	1	Q3W	4	
Followed by Paclitaxel	175	1	Q3W	4	

AC followed by weekly Paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	4	9
Cyclophosphamide	600	1	Q3W	4	
Followed by Paclitaxel	80	1	QW	4	

EC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Epirubicin	90-100	1	Q3W	4	10
Cyclophosphamide	600	1	Q3W	4	

FEC followed by Docetaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
5-FU	500	1	Q3W	3	11
Epirubicin	100	1	Q3W	3	
Cyclophosphamide	500	1	Q3W	3	
Followed by					
Docetaxel	100	1	Q3W	3	

FEC followed by weekly Paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
5-FU	600	1	Q3W	4	12
Epirubicin	90	1	Q3W	4	
Cyclophosphamide	600	1	Q3W	4	
Followed by					
3 Weeks no treatment					
Followed by					
Paclitaxel	100	1	QW	8	

FLC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
5-FU	500	1	Q3W	6	17
Lipo-Doxorubicin	35-40	1	Q3W	6	
Cyclophosphamide	500	1	Q3W	6	

Cisplatin + Docetaxel (Triple negative)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cisplatin	75	1			14, 15
Docetaxel	75	1			

Carboplatin + Docetaxel (Triple negative)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cisplatin	AUC 6	1	Q3W		19, 20
Docetaxel	75	1	Q3W		

*三院有個別版本

Neoadjuvant therapy (HER2-Negative)

同 adjuvant therapy

參考文獻

1. Citron ML, Berry DA, Cirincione C, et al: Randomized Trial of Dose-Dense Versus Conventionally Scheduled and Sequential Versus Concurrent Combination Chemotherapy as Postoperative Adjuvant Treatment of Node-Positive Primary Breast Cancer: First Report of Intergroup Trial C9741/Cancer and Leukemia Group B Trial 9741. J Clin Oncol 2003;21:1431-1439.
2. Jones S, Holmes F, O'Shaughnessey J, et al. Docetaxel With Cyclophosphamide Is Associated With an Overall Survival Benefit Compared With Doxorubicin and Cyclophosphamide: 7-Year Follow-Up of US Oncology Research Trial 9735. J Clin Oncol 2009;27:1177-1183.
3. Fisher B, Brown AM, Dimitrov NV, et al. Two months of doxorubicin-cyclophosphamide with and without interval reinduction

- therapy compared with 6 months of cyclophosphamide, methotrexate, and fluorouracil in positive-node breast cancer patients with tamoxifen-nonresponsive tumors: results from the National Surgical Adjuvant Breast and Bowel Project B-15. *J Clin Oncol* 1990;8:1483-1496.
4. Martin, Pienkowski T, Mackey L, et al. Adjuvant docetaxel for node-positive breast cancer. *N Engl J Med* 2005;352:22.
 5. Buzdar AU, Kau SW, Smith TL, Hortobagyi GN. Ten-year results of. FAC adjuvant chemotherapy trial in breast cancer. *Am J Clin Oncol*. 1989;12:123-128.
 6. Assikis V, Buzdar A, Yang Y, et al. A Phase III Trial of Sequential Adjuvant Chemotherapy for Operable Breast Carcinoma. Final Analysis with 10-Year Follow-Up. *Cancer* 2003;97:2716-23.
 7. Levine MN, Bramwell VH, Pritchard KI, et al. Randomized trial of intensive cyclophosphamide, epirubicin, and fluorouracil chemotherapy compared with cyclophosphamide, methotrexate, and fluorouracil in premenopausal women with node-positive breast cancer. National Cancer Institute of Canada Clinical Trials Group. *J Clin Oncol* 1998;16:2651-8.
 8. von Minckwitz G1, Raab G, Caputo A, et al. Doxorubicin with cyclophosphamide followed by docetaxel every 21 days compared with doxorubicin and docetaxel every 14 days as preoperative treatment in operable breast cancer: the GEPARDUO study of the German Breast Group. *J Clin Oncol* 2005;23(12):2676-85.
 9. Sparano JA, Wang M, Martino S, et al. Weekly Paclitaxel in the Adjuvant Treatment of Breast Cancer. *N Engl J Med* 2008;258:1663-1671.
 10. Piccato MJ, Di Leo A, Beauduin M, 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;19:3103-3110.
 11. Roche H, Fumoleau P, Spielmann M, et al. Sequential adjuvant epirubicin-based and docetaxel chemotherapy for node-positive breast cancer patients: the FNCLCC PACS 01 Trial. *J Clin Oncol* 2006; 24:5664-5671.
 12. Martin M, Rodriguez-Lescure A, Ruiz A, et al. Randomized phase 3 trial of fluorouracil, epirubicin, and cyclophosphamide alone or followed by paclitaxel for early breast cancer. *J Natl Cancer Inst* 2008;100:805-814.
 13. Bayo, J., Prieto, B. and Rivera, F. Comparison of Doctors' and Breast Cancer Patients' Perceptions of Docetaxel, Epirubicin,

- and Cyclophosphamide (TEC) Toxicity. *Breast J* 2016; 22: 293–302.
14. Y. Fan, B. H. Xu*, P. Yuan, F. Ma, et al. Docetaxel–cisplatin might be superior to docetaxel–capecitabine in the first-line treatment of metastatic triple-negative breast cancer. *Annals of Oncology* 24: 1219–1225, 2013.
 15. Se Hoon Park, Eun Kyung Cho, et al. Docetaxel plus cisplatin is effective for patients with metastatic breast cancer resistant to previous anthracycline treatment: a phase II clinical trial. *BMC Cancer*. 2005; 5: 21.
 16. Bonadonna G, Brusamolino E, Valagussa P, et al. Combination chemotherapy as an adjuvant treatment in operable breast cancer. *N Engl J Med*. 1976;294(8):405-410.
 17. Rau KM, Lin YC, Chen YY, et al. Pegylated liposomal doxorubicin (Lipo-Dox®) combined with cyclophosphamide and 5-fluorouracil is effective and safe as salvage chemotherapy in taxane-treated metastatic breast cancer: an open-label, multi-center, non-comparative phase II study. *BMC Cancer*. 2015; 15: 423.
 18. Masuda N, Lee SJ, Ohtani S, et al. Adjuvant capecitabine for breast cancer after preoperative chemotherapy. *N Engl J Med* 2017;376:2147-2159.
 19. Pathological Response and Survival in Triple-Negative Breast Cancer Following Neoadjuvant Carboplatin plus Docetaxel. *Clin Cancer Res* December 1 2018 (24) (23) 5820-5829.
 20. A Phase II Trial of Docetaxel and Carboplatin as First-Line Chemotherapy for Metastatic Breast Cancer: NCCTG Study N9932. *Oncology* 2005;69:117–121.

Adjuvant Endocrine Therapy

Anti-estrogen

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Tamoxifen	20-40 mg PO QD				1

Aromatase inhibitor

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Exemestane	25 mg PO QD				2

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Anastrozole	1 mg PO QD				3

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Letrozole	2.5 mg PO QD				4

Ovarian suppression or ablation

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Goserelin Acetate	3.6 mg SC	1	Q4W		5

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Leuprolide Acetate	3.75 mg SC	1	Q4W		6

參考文獻

1. Product Information: tamoxifen citrate oral tablets, tamoxifen citrate oral tablets. Watson Laboratories (per manufacturer), Corona, CA, 2011.
2. Product Information: AROMASIN(R) oral tablets, exemestane oral tablets. Pharmacia & Upjohn Company (per FDA), New York, NY, 2013.
3. Product Information: ARIMIDEX(R) oral tablet, anastrozole oral tablet. AstraZeneca Pharmaceuticals LP, Wilmington, DE, 2009.
4. Product Information: Femara oral tablets, letrozole oral tablets. Novartis Pharmaceuticals Corporation, East Hanover, NJ, 2010.
5. Product Information: ZOLADEX(R) implant 3.6mg, goserelin acetate implant implant 3.6mg. AstraZeneca, Wilmington, DE, 2009.
6. Boccardo F, Rubagotti A, Amoroso D, et al: Endocrinological and clinical evaluation of two depot formulations of leuprolide acetate in pre- and perimenopausal breast cancer patients. Cancer Chemother Pharmacol 1999; 43:461-466

CHEMOTHERAPY REGIMENS FOR RECURRENT OR METASTATIC BREAST CANCER

HER2-NEGATIVE

PREFERRED SINGLE AGENTS

Anthacyclins

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60-75	1	Q3W	7	1

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	20	1	QW		2

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Lipo-Doxorubicin	50	1	Q4W		3

Taxanes

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Paclitaxel	175	1	Q3W		4

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Paclitaxel	80	1	QW		5

Antimetabolites

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Capecitabine	1000-1250 PO BID	1-14	Q3W	6	6

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Gemcitabine	800-1200	1, 8, 15	Q4W		7

Other microtubule inhibitors

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Vinorelbine	25	1	QW		8

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Eribulin	1.4	1, 8	Q3W		9

PARP inhibitors

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Olaparib	300 mg PO BID				46

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Talazoparib	1 mg PO QD		Q4W		47

Atezolizumab + albumin-bound paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Atezolizumab	840 mg	1, 15	Q4W		48
Nab-Paclitaxel	100	1, 8, 15	Q4W		

(An option for patients with PD-L1-positive TNBC)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Carboplatin	AUC 6	1	Q3W-Q4W		11

(An option for patients with triple-negative tumors and germline BRCA1/2 mutation)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cisplatin	75	1	Q3W	4	17

(An option for patients with triple-negative tumors and germline BRCA1/2 mutation)

OTHER SINGLE AGENTS

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cyclophosphamide	50 PO QD	1-21	Q4W		10

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Carboplatin	AUC 6	1	Q3W-Q4W		11

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Docetaxel	60-100	1	Q3W	6	12, 13

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Docetaxel	35	1, 8, 15, 22, 29, 36	Q8W		14

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Albumin-Paclitaxel	100 or 150	1, 8, 15	Q4W		15, 16

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Albumin-Paclitaxel	260	1	Q3W		15

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Epirubicin	75	1	Q3W		18

Combinations

Carboplatin + Docetaxel (triple negative)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Carboplatin	AUC 6	1	Q3W	6	49, 50
Docetaxel	75	1	Q3W	6	

CAF

藥品名 ★	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cyclophosphamide	100 PO	1-14	Q4W		19
Doxorubicin	30	1, 8	Q4W		
5-FU	500	1, 8	Q4W		

FAC

藥品名 ★	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
5-FU	500	1, 8 or 1, 4	Q3W		20
Doxorubicin	50	1	Q3W		
Cyclophosphamide	500	1	Q3W		

FEC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cyclophosphamide	400	1, 8	Q4W	6-9	21
Epirubicin	50	1, 8	Q4W		
5-FU	500	1, 8	Q4W		

AC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	60	1	Q3W	8	22
Cyclophosphamide	600	1	Q3W	8	

EC

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Epirubicin	75	1	Q3W	6	23
Cyclophosphamide	600	1	Q3W	6	

CMF

藥品名 ★	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Cyclophosphamide	100 PO QD	1-14	Q4W		24, 45
Methotrexate	40	1, 8	Q4W		
5-FU	600	1, 8	Q4W		

Docetaxel + Capecitabine

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Docetaxel	75	1	Q3W	6	25
Capecitabine	950 PO BID	1-14	Q3W	6	

GT

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Paclitaxel	175	1	Q3W		26
Gemcitabine	1250	1, 8	Q3W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Paclitaxel	80	1, 8, 15	Q4W		44
Gemcitabine	800	1, 8, 15	Q4W		

Gemcitabine + Carboplatin

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Gemcitabine	1250	1, 8	Q3W		27
Carboplatin	AUC 2	1, 8	Q3W		

Bevacizumab + Paclitaxel

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Bevacizumab	10 mg/kg	1, 8	Q4W		28
Paclitaxel	90	1, 8, 15	Q4W		

HER2-POSITIVE

PREFERRED AGENTS

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Pertuzumab	840 → 420 mg	1	Q3W		29
Trastuzumab	8 → 6 mg/kg	1	Q3W		
Docetaxel	75-100	1	Q3W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Pertuzumab	840 → 420 mg	1	Q3W		30, 31
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		
Paclitaxel	175 (80)	1	Q3W (QW)		

OTHER AGENTS

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		31, 32
Paclitaxel	175	1	Q3W		
Carboplatin	AUC 6	1	Q3W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		31, 33, 34
Paclitaxel	175 (80-90)	1	Q3W (QW)		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		31, 35, 36
Docetaxel	80-100 (35)	1, 8, 15 (1)	Q3W (QW)		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		31, 37
Vinorelbine	30-35 (25)	1, 8 (1)	Q3W (QW)		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		31, 33, 38, 39
Capecitabine	1000-1250	1-14	Q3W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
T-DM1	3.6 mg/kg	1	Q3W		40

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Lapatinib	1250 mg PO QD	1-21	Q3W		41
Capecitabine	1000 PO BID	1-14	Q3W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Trastuzumab	8 → 6 (4 → 2) mg/kg	1	Q3W (QW)		31, 43
Lapatinib	1000 mg PO QD		Q3W		

*三院有個別版本

參考文獻

1. Chan S, Friendrichs K, Noel D, et al. Prospective randomized trial of docetaxel versus doxorubicin in patients with metastatic breast cancer. *J Clin Oncol.* 1999 Aug;17(8):2341-54.
2. Gasparini G, Dai Fior S, Panizzoni GA, et al. Weekly epirubicin versus doxorubicin as second line therapy in advanced breast cancer. A randomized clinical trial. *Am J Clin Oncol.* 1991 Feb;14(1):38-44.
3. O'Brien ME, Wigler N, Inbar M, et al. Reduced cardiotoxicity and comparable efficacy in a phase III trial of pegylated liposomal doxorubicin HCl (CAELYX/Doxil) versus conventional doxorubicin for first-line treatment of metastatic breast cancer. *Ann Oncol.* 2004 Mar;15(3):440-9.
4. Seidman AD, Tiersten A, Hudis C, et al. Phase II trial of paclitaxel by 3-hour infusion as initial and salvage chemotherapy for metastatic breast cancer. *J Clin Oncol* 1995;13:2575-2581.
5. Perez EA, Vogel CL, Irwin DH, et al. Multicenter Phase II Trial of Weekly Paclitaxel in Women With Metastatic Breast Cancer. *J Clin Oncol* 2001;19:4216-4223.
6. Safety and Efficacy of Two Different Doses of Capecitabine in the Treatment of Advanced Breast Cancer in Older Women. *J*

- Clin Oncol 2005;23:2155-2161.
7. Seidman AD, Gemcitabine as Single-Agent Therapy in the Management of Advanced Breast Cancer. *Oncology (Williston Park)*2001;15:11-14.
 8. Zelek L, Barthier S, Riofrio M, et al. Weekly vinorelbine is an effective palliative regimen after failure with anthracyclines and taxanes in metastatic breast carcinoma. *Cancer*. 2001 Nov 1;92(9):2267-72.
 9. Cortes J, O'Shaughnessy J, Loesch D, et al. Eribulin monotherapy versus treatment of physician's choice in patients with metastatic breast cancer (EMBRACE): a phase 3 open-label randomised study. *Lancet* 2011;377:914-923.
 10. Licchetta A, Correale P, Migali C, et al. Oral Metronomic Chemo-Hormonal-Therapy of Metastatic Breast Cancer with Cyclophosphamide and Megestrol Acetate. *J Chemother* 2010;22(3):201-4.
 11. Isakoff, SJ, Goss PE, et al. (2011). TBCRC009: A multicenter phase II study of cisplatin or carboplatin for metastatic triple-negative breast cancer and evaluation of p63/p73 as a biomarker of response[abstract]. *J Clin Oncol* 29(15_suppl):Abstract 1025.
 12. Burris HA, 3rd. Single-agent docetaxel(Taxotere) in randomized phase III trials, *Semin Oncol* 1999;26:1-6.
 13. Harvey V, Mouridsen H, Semiglazov V, et al. Phase III Trial Comparing Three Doses of Docetaxel for Second-Line Treatment of Advanced Breast Cancer. *J Clin Oncol* 2006;24(31):4963-70.
 14. Rivera E, Mejia JA, Arun BJ, et al. Phase 3 study comparing the use of docetaxel on an every-3-week versus weekly schedule in the treatment of metastatic breast cancer. *Cancer* 2008 Apr 1;112(7):1455-61.
 15. Gradishar WJ, Tjulandin S, Davidson N, et al. Phase III Trial of Nanoparticle Albumin-Bound Paclitaxel Compared With Polyethylated Castor Oil-Based Paclitaxel in Women With Breast Cancer. *J Clin Oncol* 2005;23:7794-7803.
 16. Gradishar W, Dimitry K, Sergey C, et al. Significantly Longer Progression-Free Survival With nab-Paclitaxel Compared With Docetaxel As First-Line Therapy for Metastatic Breast Cancer. *J Clin Oncol* 2009;27(22):3611-9.
 17. Silver DP, Richardson AL, Eklund AC, et al. Efficacy of Neoadjuvant Cisplatin in Triple-Negative Breast Cancer. *J Clin Oncol* 2010;28(7):1145-53.
 18. Bastholt L, Dalmark M, Gjedde SB, 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;14:1146-1155.

19. Bull JM, Tormey DC, Li SH, et al. A randomized comparative trial of adriamycin versus methotrexate in combination drug therapy. *Cancer* 1978;41:1649-1657.
20. Hortobagyi GN, Gutterman JU, Blumenschein GR, et al. Combination chemioimmunotherapy of metastatic breast cancer with 5-fluorouracil, adriamycin, cyclophosphamide, and BCG. *Cancer* 1979;43:1225-33.
21. Ackland SP, Anton A, Breitbach GP, et al. Dose-Intensive Epirubicin-Based Chemotherapy Is Superior to an Intensive Intravenous Cyclophosphamide, Methotrexate, and Fluorouracil Regimen in Metastatic Breast Cancer: A Randomized Multinational Study. *J Clin Oncol* 2001;19:943-953.
22. Nabholz JM, Falkson C, Campos D, 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(6):968-75.
23. Langley RE, Camichel J, Jones AL, et al. Phase III Trial of Epirubicin Plus Paclitaxel Compared With Epirubicin Plus Cyclophosphamide As First-Line Chemotherapy for Metastatic Breast Cancer: United Kingdom National Cancer Research Institute. *J Clin Oncol* 2005;23:8322-8330.
24. Bonadonna G, Brusamolino E, Valagussa P, et al. Combination Chemotherapy as an Adjuvant Treatment in Operable Breast Cancer. *N Engl Med* 1976;294:405-410.
25. Mavroudis D, Papakotoulas P, Ardavanis A, et al. Randomized phase III trial comparing docetaxel plus epirubicin versus docetaxel plus capecitabine as first-line treatment in women with advanced breast cancer. *Ann Oncol* 21:48(2010).
26. Albain KS, Nag S, Calderillo-Ruiz G, et al. Gemcitabine Plus Paclitaxel Versus Paclitaxel Monotherapy in Patients With Metastatic Breast Cancer and Prior Anthracycline Treatment. *J Clin Oncol* 2008;26(24):3950-7.
27. O'Shaughnessy J, Schwartzberg LS, Danso MA, et al. A randomized phase III study of iniparib (BSI-201) in combination with gemcitabine/carboplatin (G/C) in metastatic triple-negative breast cancer (TNBC). [abstract]. *J Clin Oncol* 2011;29(Suppl_15):Abstract 1007.
28. Miller K, Wang M, Gralow J, et al. Paclitaxel plus Bevacizumab versus Paclitaxel Alone for Metastatic Breast Cancer. *N Engl J Med* 2007;357:2666-2676.

29. 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.
30. Phase II study of pertuzumab, trastuzumab, and weekly paclitaxel in patients with HER2-overexpressing metastatic breast cancer [abstract]. *Cancer Research* 2012;72:Abstract P5-18-20.
31. Leyland-Jones B, Gelmon K, Ayoub JP, et al. Pharmacokinetics, Safety, and Efficacy of Trastuzumab Administered Every Three Weeks in Combination With Paclitaxel. *J Clin Oncol* 2003;21:3965-3971.
32. Perez EA, Suman VJ, Rowland KM, et al. Two Concurrent Phase II Trials of Paclitaxel/Carboplatin/Trastuzumab (Weekly or Every-3-Week Schedule) as First-Line Therapy in Women with HER2-Overexpressing Metastatic Breast Cancer: NCCTG Study 983252. *Clin Breast Cancer* 2005;6:425-432.
33. Slamon DJ, Leyland-Jones B, Shak S, et al. Use of Chemotherapy plus a Monoclonal Antibody against HER2 for Metastatic Breast Cancer That Overexpresses HER2. *N Engl J Med* 2001;344:783-792.
34. Seidman A, Berry DA, Cirincione C, 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;26:1642-1649.
35. Marty M, Cognetti F, Maraninchi D, et al. Randomized Phase II Trial of the Efficacy and Safety of Trastuzumab Combined With Docetaxel in Patients With Human Epidermal Growth Factor Receptor 2–Positive Metastatic Breast Cancer Administered As First-Line Treatment: The M77001 Study Group. *J Clin Oncol* 2005;23:4265-4274.
36. Esteva FJ, Valero V, Booser D, et al. Phase II Study of Weekly Docetaxel and Trastuzumab for Patients With HER-2–Overexpressing Metastatic Breast Cancer. *J Clin Oncol* 2002;20:1800-1808.
37. Burstein HJ, Keshaviah A, Baron AD, et al. Trastuzumab plus vinorelbine or taxane chemotherapy for HER2-overexpressing metastatic breast cancer: The trastuzumab and vinorelbine or taxane study. *Cancer* 2007;110:965-972.
38. von Minckwitz G, du Bois A, Schmidt M, et al. Trastuzumab Beyond Progression in Human Epidermal Growth Factor Receptor 2–Positive Advanced Breast Cancer: A German Breast Group 26/Breast International Group 03-05 Study. *J Clin Oncol* 2009;27:1999-2006.
39. Cobleigh MA, Vogel CL, Tripathy D, 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;17:2639-2648.
40. Verma S, Miles D, Gianni L, et al. Trastuzumab Emtansine for HER2-Positive Advanced Breast Cancer [Supplementary appendix available online]. *N Engl J Med* 2012;367:1783-1791.
 41. Geyer C, Forster J, Lindquist D, et al. Lapatinib plus Capecitabine for HER2-Positive Advanced Breast Cancer. *N Engl J Med* 2006;355:2733-2743.
 42. Bartsch R, Wenzel C, Altorjai G, et al. Capecitabine and Trastuzumab in Heavily Pretreated Metastatic Breast Cancer. *J Clin Oncol* 2007;25:3853-3858.
 43. Blackwell KL, Burstein H, et al. Randomized Study of Lapatinib Alone or in Combination With Trastuzumab in Women With ErbB2-Positive, Trastuzumab-Refractory Metastatic Breast Cancer. *J Clin Oncol* 2010;28(7):1124-30.
 44. Kun-Ming Rau, Shan-Hsuan Li ,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.
 45. Jin Hyun Park, Seock-Ah Im,,et al.Cyclophosphamide, Methotrexate, and 5-Fluorouracil as Palliative Treatment for Heavily Pretreated Patients with Metastatic Breast Cancer: A Multicenter Retrospective Analysis.*J Breast Cancer*. 2017 Dec; 20(4): 347–355.
 46. Mark Robson, Seock-Ah Im, Elzbieta Senkus, et al. Olaparib for Metastatic Breast Cancer in Patients with a Germline BRCA Mutation. *N Engl J Med* 2017; 377:523-533.
 47. Litton J, Rugo H, Ettl J, et al. Talazoparib in patients with advanced breast cancer and a germline BRCA mutation. *N Engl J Med* 2018;379:753-63.
 48. Schmid P, Adams S, Rugo HS, et al. Atezolizumab and Nab-Paclitaxel in Advanced Triple-Negative Breast Cancer. [supplementary appendix appears online]. *N Engl J Med*. 2018 Nov 29;379:2108-2121.
 49. Pathological Response and Survival in Triple-Negative Breast Cancer Following Neoadjuvant Carboplatin plus Docetaxel.*Clin Cancer Res* December 1 2018 (24) (23) 5820-5829.
 50. A Phase II Trial of Docetaxel and Carboplatin as First-Line Chemotherapy for Metastatic Breast Cancer: NCCTG Study N9932.*Oncology* 2005;69:117–121.

ENDOCRINE THERAPY REGIMENS FOR RECURRENT OR METASTATIC BREAST CANCER

Premenopausal

SERM

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Tamoxifen	20-40 mg PO QD				1

Ovarian ablation or suppression

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Goserelin Acetate	3.6 mg SC		Q4W		5

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Leuprolide Acetate	3.75 mg SC		Q4W		6

Postmenopausal

Aromatase inhibitor

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Exemestane	25 mg PO QD				2

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Anastrozole	1 mg PO QD				3

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Letrozole	2.5 mg PO QD				4

SERD

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Fulvestrant	500 IM		Q4W		7

CDK4/6 inhibitor+AI (for Her2-negative)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Palbociclib	125 mg PO QD	1-21	Q4W		8
Letrozole	2.5 mg PO QD	1-21	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Palbociclib	125 mg PO QD	1-21	Q4W		8
Anastrozole	1 mg PO QD	1-21	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Palbociclib	125 mg PO QD	1-21	Q4W		8
Exemestane	25 mg PO QD	1-21	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Ribociclib	600 mg PO QD	1-21	Q4W		9
Letrozole	2.5 mg PO QD	1-21	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Ribociclib	600 mg PO QD	1-21	Q4W		9
Anastrozole	1 mg PO QD	1-21	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Ribociclib	600 mg PO QD	1-21	Q4W		9
Exemestane	25 mg PO QD	1-28	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Abemaciclib	150 mg PO BID				14
Letrozole	2.5 mg PO QD				

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Abemaciclib	150 mg PO BID				14
Anastrozole	1 mg PO QD				

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Abemaciclib	150 mg PO BID				14
Exemestane	25 mg PO QD				

CDK4/6 inhibitor + SERD

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Palbociclib	125 mg PO QD	1-21	Q4W		10
Fulvestrant	500 IM	1, 15 → 1	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Palbociclib	600 mg PO QD	1-21	Q4W		11
Fulvestrant	500 IM	1, 15 → 1	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Abemaciclib	150 mg PO BID				15
Fulvestrant	500 IM	1, 15 → 1	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Everolimus	10 mg PO QD				12
Exemestane	25 mg PO QD				

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Everolimus	10 mg PO QD		Q4W		12
Fulvestrant	500 IM	1, 15 → 1	Q4W		

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Everolimus	10 mg PO QD				13
Tamoxifen	20-40 mg PO QD				

Fulvestrant + Alpelisib for PIK3CA-mutated tumors

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Alpelisib	300 mg PO QD				16
Fulvestrant	500 IM	1, 15 → 1	Q4W		

USEFUL IN CERTAIN CIRCUMSTANCES

Ribociclib + Tamoxifen

藥品名	劑量 mg/m2	給藥日	頻率	週期	參考文獻
Ribociclib	600 mg PO QD	1-21	Q4W		17
Tamoxifen	20-40 mg PO QD				

(first line therapy with ovarian suppression or ablation for premenopausal patients with hormone-receptor positive, HER2-negative metastatic breast cancer)

Abemaciclib

藥品名	劑量 mg/m2	給藥日	頻率	週期	參考文獻
Abemaciclib	200 mg PO BID				18

參考文獻

1. Product Information: tamoxifen citrate oral tablets, tamoxifen citrate oral tablets. Watson Laboratories (per manufacturer), Corona, CA, 2011.
2. Product Information: AROMASIN(R) oral tablets, exemestane oral tablets. Pharmacia & Upjohn Company (per FDA), New York, NY, 2013.
3. Product Information: ARIMIDEX(R) oral tablet, anastrozole oral tablet. AstraZeneca Pharmaceuticals LP, Wilmington, DE, 2009.
4. Product Information: Femara oral tablets, letrozole oral tablets. Novartis Pharmaceuticals Corporation, East Hanover, NJ, 2010.
5. Product Information: ZOLADEX(R) implant 3.6mg, goserelin acetate implant implant 3.6mg. AstraZeneca, Wilmington, DE, 2009.
6. Boccardo F, Rubagotti A, Amoroso D, et al: Endocrinological and clinical evaluation of two depot formulations of leuprolide acetate in pre- and perimenopausal breast cancer patients. Cancer Chemother Pharmacol 1999; 43:461-466.

7. Rita S. Mehta, M.D., William E. Barlow, Ph.D., et al. Combination Anastrozole and Fulvestrant in Metastatic Breast Cancer.
8. Turner NC, Ro J, Andre F, et al. Palbociclib in Hormone-Receptor-Positive Advanced Breast Cancer. *N Engl J Med* 2015;373:209-219.
9. Gribble N, Hortobagyi, M.D., Salomon M, Stemmer, M.D., et al. Ribociclib as First-Line Therapy for HR-Positive, Advanced Breast Cancer, *N Engl J Med* 375;18 November 3, 2016
10. Massimo Cristofanilli, Nicholas C Turner, et al. Fulvestrant plus palbociclib versus fulvestrant plus placebo for treatment of hormone-receptor-positive, HER2-negative metastatic breast cancer that progressed on previous endocrine therapy (PALOMA-3): final analysis of the multicentre, double-blind, phase 3 randomised controlled trial. *Lancet Oncol* 2016; 17: 425–39.
11. Dennis J. Slamon, Patrick Neven, et al. Phase III Randomized Study of Ribociclib and Fulvestrant in Hormone Receptor–Positive, Human Epidermal Growth Factor Receptor 2–Negative Advanced Breast Cancer: MONALEESA-3. *J Clin Oncol* 36:2465-2472.
12. Noah Kornblum, Fengmin Zhao, et al. Randomized Phase II Trial of Fulvestrant Plus Everolimus or Placebo in Postmenopausal Women With Hormone Receptor–Positive, Human Epidermal Growth Factor Receptor 2–Negative Metastatic Breast Cancer Resistant to Aromatase Inhibitor Therapy: Results of PrE0102. *J Clin Oncol* 36:1556-1563.
13. Thomas Bachelot, Céline Bourcier, et al. Randomized Phase II Trial of Everolimus in Combination With Tamoxifen in Patients With Hormone Receptor–Positive, Human Epidermal Growth Factor Receptor 2–Negative Metastatic Breast Cancer With Prior Exposure to Aromatase Inhibitors: A GINECO Study. *J Clin Oncol* 30:2718-2724.
14. Goetz MP, Toi M, et al. MONARCH 3: Abemaciclib As Initial Therapy for Advanced Breast Cancer. *J Clin Oncol*. 2017;35(32):3638-3646.
15. Sledge GW Jr, Toi M, et al. The Effect of Abemaciclib Plus Fulvestrant on Overall Survival in Hormone Receptor–Positive, ERBB2-Negative Breast Cancer That Progressed on Endocrine Therapy—MONARCH 2. *AMA Oncol*. 2020;6(1):116-124.
16. André F, Ciruelos E, et al. Alpelisib for PIK3CA-Mutated, Hormone Receptor–Positive Advanced Breast Cancer. *N Engl J Med* 2019; 380:1929-1940.

17. Tripathy D, Im SA, et al. Ribociclib plus endocrine therapy for premenopausal women with hormone-receptor-positive, advanced breast cancer (MONALEESA-7): a randomised phase 3 trial. *Lancet Oncol.* 2018 Jul;19(7):904-915.
18. Dickler MN, Tolaney SM, et al. MONARCH 1, a phase 2 study of abemaciclib, a CDK4 and CDK6 inhibitor, as a single agent, in patients with refractory HR+/HER2- metastatic breast cancer. *Clin Cancer Res.* 2017; 23(17): 5218–5224.

《 乳癌放射治療共識 》

一、治療範圍

1. 患側乳房 (侵襲癌或原位癌經乳房保留手術術後)
2. 患側胸壁
3. 患側高風險淋巴轉移範圍
4. 淋巴引流區可包涵內乳淋巴結

二、治療劑量 / 次數

1. 乳房保留術後輔助治療
 患側乳房 / 高風險淋巴轉移範圍 (劑量：50-50.4Gy / 次數：25-28 次)
 或 (劑量：40-42.5Gy / 次數：15-16 次)
 原位癌 / 腫瘤原發部位 / 高風險淋巴轉移範圍追加劑量：10-16 Gy / 次數：4-8 次
 分次劑量：1.8~2.0Gy 或 2.6~2.7Gy
2. 改良型乳房根除術後輔助治療
 患側胸壁 / 高風險淋巴轉移：45-50.4Gy / 次數：25-28 次
 腫瘤原發部位 / 高風險淋巴轉移範圍 追加劑量：8-12Gy / 次數：4-6 次
3. 術中單次放射線治療 (IORT)
 基底部位：20~21Gy / 次數：1 次

三、治療方式：

使用斜角對照配合強度調控放射治療技術，包含弧形及螺旋放射規劃，可考慮搭配影像導引治療，治療選擇可使用同步照射高與低危險部位的方式或先給予整個照射部位部份劑量照射後，再針對高危險部位加強劑量

四、參考文獻：

1. NCCN clinical practice guidelines in oncology-Breast cancer. version 3.2019
2. International Commission on Radiation Units and Measurements. ICRU Report No 62: Prescribing, Recording and Reporting Photon Beam Therapy (Supplement to ICRU Report 50) . Bethesda, MD: ICRU Publications 1999.
3. Radiation therapy for the whole breast: Executive summary of an American Society for Radiation Oncology (ASTRO) evidence-based guideline, Practical Radiation Oncology, 2018; 8:145-152

