

淋巴癌診療指引

一、參院參與討論同仁

| | | |
|--------|--------------|--------------|
| 主席 | 趙祖怡副院長 | |
| 台北癌症中心 | 趙祖怡副院長 | |
| 附設醫院 | 曾慧恩血液腫瘤科主治醫師 | 蔡佳叡血液腫瘤科主治醫師 |
| | 吳庠螢癌症中心個管師 | |
| 萬芳醫院 | 胡名宏血液腫瘤科主治醫師 | 陳淑玲癌症中心個管師 |
| 雙和醫院 | 謝耀宇血液腫瘤科主治醫師 | 劉惠文血液腫瘤科主治醫師 |
| | 王緯婷癌症中心個管師 | |

二、討論日期：109年10月21日

三、校稿人員：蔡佳叡醫師 / 吳庠螢個管師

110 年版與上一版差異：

| 109 年 修訂版 | 110 年 修訂版 |
|--|--|
| <p>何杰金氏症 (Hodgkin lymphoma)</p> <p>原 1. 臨床檢查：PET-CT 或頭頸部 + 胸部 + 腹部 + 骨盆腔電腦斷層 (擇一)</p> <p>原 2. 預後不良因子：bulky tumor(>10 cm)</p> | <p>何杰金氏症 (Hodgkin's lymphoma)</p> <p>修改 1. 臨床檢查：PET-CT 或電腦斷層</p> <p>修改 2. 預後不良因子：bulky tumor(≥ 10 cm)</p> |
| <p>何杰金氏症 (Hodgkin lymphoma)</p> <p>組織型態：Classic Hodgkin's Lymphoma- 早期預後良好分類</p> <p>原 1. 重新評估</p> <p>原 2. 重新評估</p> <p>原 3. PET</p> | <p>何杰金氏症 (Hodgkin's lymphoma)</p> <p>組織型態：Classic Hodgkin's Lymphoma- 早期預後良好分類</p> <p>修改 1. 重新評估 (PET-CT)</p> <p>修改 2. 重新評估 (consider)</p> <p>修改 3. PET-CT</p> |
| <p>何杰金氏症 (Hodgkin lymphoma)</p> <p>組織型態：Classic Hodgkin's Lymphoma- 早期非預後良好分類</p> <p>原 1. ABVD 4 個療程</p> <p>原 2. 重新評估</p> <p>原 3. 再加 ABVD2 個療程</p> <p>原 4. PET</p> <p>原 5. 巨大腫瘤意指 bulky mediastinal disease or >10 cm.</p> | <p>何杰金氏症 (Hodgkin's lymphoma)</p> <p>組織型態：Classic Hodgkin's Lymphoma- 早期非預後良好分類</p> <p>修改 1. *ABVD(備註 * 化學治療至少 2-4 次再進行重新評估 (PET-CT))</p> <p>修改 2. 重新評估 (PET-CT)</p> <p>修改 3. ** 再加 ABVD(備註 ** 總共 6 個療程)</p> <p>修改 4. PET-CT</p> <p>修改 5. 巨大腫瘤意指 bulky mediastinal disease or ≥ 10 cm.</p> |

109 年 修訂版

何杰金氏症 (Hodgkin lymphoma)**組織型態：Classic Hodgkin's Lymphoma- 第 III- IV 期**

原 1. ABVD2 個療程

原 2. 重新評估

原 3. 再加 ABVD 4 個療程

原 4. PET

原 5. 巨大腫瘤意指 bulky mediastinal disease or >10 cm.

何杰金氏症 (Hodgkin lymphoma)**組織型態：Nodular lymphocyte-predominant Hodgkin's Lymphoma**

原 1. 第 IB, IIB 期或第 IA/IIA 期 (bulky)

原 2. 化學治療

原 3. 重新評估

濾泡淋巴瘤 (Follicular Lymphoma) Grade 1-2

原 1. 臨床檢查：PET-CT 或頭頸部 + 胸部 + 腹部 + 骨盆腔電腦斷層 (擇一)

原 2. 第 I-II 期

原 3. 第 II 期巨大腫塊 (7cm 以上) 第 III-IV 期

原 4. Rituximab 持續性治療每三個月施打一次，持續 2 年，僅適用於濾泡性淋巴瘤 (Gr. I-II)

110 年 修訂版

何杰金氏症 (Hodgkin's lymphoma)**組織型態：Classic Hodgkin's Lymphoma- 第 III- IV 期**

修改 1.* ABVD (備註 * 化學治療至少 2 次再進行重新評估 (PET-CT))

修改 2. 重新評估 (PET-CT)

修改 3. ** 再加 ABVD(備註 ** 總共 6 個療程)

修改 4. PET-CT

修改 5. 巨大腫瘤意指 bulky mediastinal disease or ≥ 10 cm.**何杰金氏症 (Hodgkin's lymphoma)****組織型態：Nodular lymphocyte-predominant Hodgkin's Lymphoma**

修改 1. 第 IB, IIB 期或 IA (Bulky)/IIA (Bulky or non- contiguous)

修改 2. 加上備註 * 化學治療至少 2 次再進行重新評估 (PET-CT)

修改 3. 重新評估 (PET-CT)

濾泡淋巴瘤 (Follicular Lymphoma) Grade 1-2

修改 1. 臨床檢查：PET-CT 或電腦斷層

修改 2. 第一期或連續性第二期

修改 3. 不連續性第 II 期；第 III-IV 期

修改 4. *Rituximab 持續性治療每三個月施打一次，持續 2 年，僅適用於濾泡性淋巴瘤 (Gr. I-III)

109 年 修訂版

瀰漫性大 B 細胞淋巴瘤 / 濾泡性淋巴瘤 Gr.III(DLBCL/FL Gr.III)

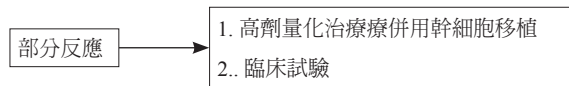
原 1. 臨床檢查：PET-CT 或頭頸部 + 胸部 + 腹部 + 骨盆腔電腦斷層 (擇一)

原 2. 救援性化學治療

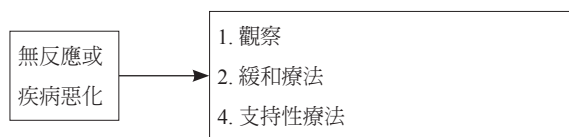
原 3.* Rituximab 持續性治療每三個月施打一次，持續 2 年，僅適用於濾泡性淋巴瘤 (Gr. I-II)

濾泡淋巴瘤轉型成瀰漫性大 B 細胞淋巴瘤 (FL → DLBCL)

原 1. 無化學治療 +/- 免疫標靶



原 2. 無救援性化學治療 +/- 免疫標靶



110 年 修訂版

瀰漫性大 B 細胞淋巴瘤 / 濾泡性淋巴瘤 Gr.III(DLBCL/FL Gr.III)

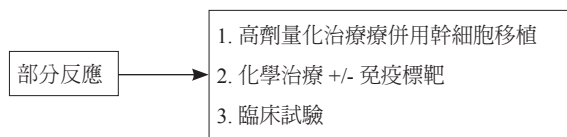
修改 1. 臨床檢查：PET-CT 或電腦斷層

修改 2. 救援性化學治療 +/- 免疫標靶

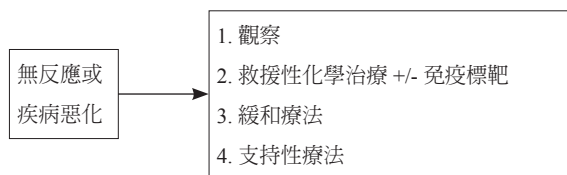
修改 3. *Rituximab 持續性治療每三個月施打一次，持續 2 年，僅適用於濾泡性淋巴瘤 (Gr. I-III)

濾泡淋巴瘤轉型成瀰漫性大 B 細胞淋巴瘤 (FL → DLBCL)

新增 1. 新增化學治療 +/- 免疫標靶



新增 2. 新增救援性化學治療 +/- 免疫標靶

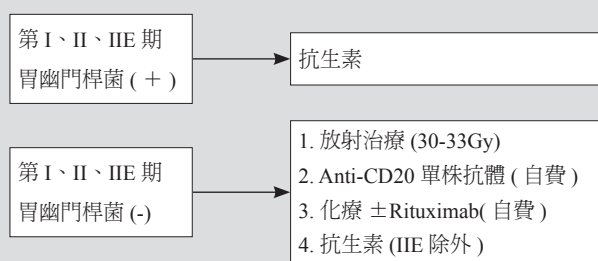


109 年 修訂版

胃黏膜淋巴組織相關淋巴瘤 (Gastric MALT lymphoma)

原 1. 抗生素

原 2. 抗生素 (IIE 除外)



T 細胞淋巴瘤 《(Cutaneous T-cell lymphoma and T-immunoblastic lymphoma are not included)

原 1. 臨床檢查：PET-CT 或頭頸部 + 胸部 + 腹部 + 骨盆腔電腦斷層 (擇一)

原 2. 無 Chidamide(標靶治療)

原 3. 持續性照護

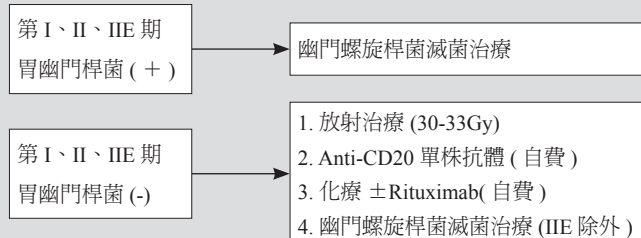
1. 化學治療
2. Crizotinib(optional)
3. Anti-CD30 單株抗體 (if CD30(+))
4. 持續性照護

110 年 修訂版

胃黏膜淋巴組織相關淋巴瘤 (Gastric MALT lymphoma)

修改 1. 幽門螺旋桿菌滅菌治療

修改 2. 幽門螺旋桿菌滅菌治療 (IIE 除外)



T 細胞淋巴瘤 《(Cutaneous T-cell lymphoma and T-immunoblastic lymphoma are not included)

修改 1. 臨床檢查：PET-CT 或電腦斷層

新增 2. Chidamide(標靶治療)

修改 3. 緩和性照護

1. 化學治療
2. Crizotinib (optional)
3. Anti-CD30 單株抗體 (if CD30(+))
4. 標靶治療 (Chidamide)
5. 緩和性照護

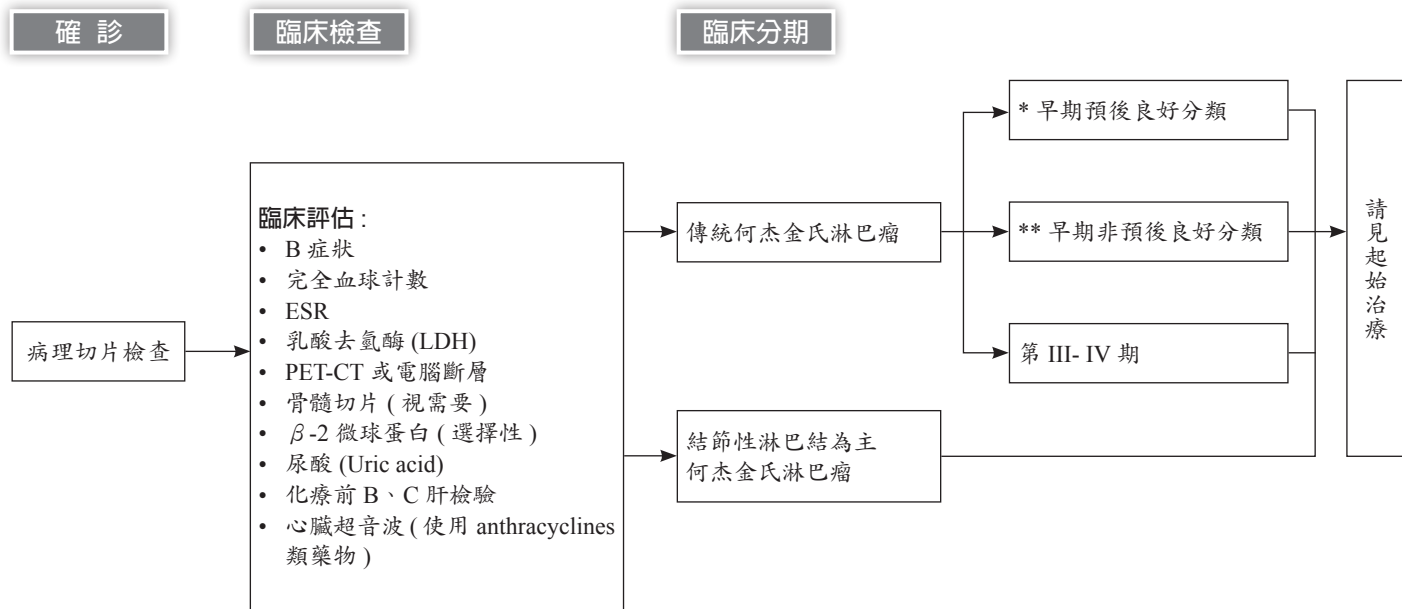
109 年 修訂版

1. NCCN clinical practice guidelines in oncology-Hodgkin Lymphoma. version 2.2019.
2. NCCN clinical practice guidelines in oncology-B-cell Lymphoma. Version 4.2019.
3. NCCN clinical practice guidelines in oncology-T-cell Lymphoma. Version 2.2019.
4. NCCN clinical practice guidelines in oncology-Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma. Version 4.2019

110 年 修訂版

1. NCCN clinical practice guidelines in oncology-Hodgkin Lymphoma. version 2.2020.
2. NCCN clinical practice guidelines in oncology-B-cell Lymphoma. Version 4.2020.
3. NCCN clinical practice guidelines in oncology-T-cell Lymphoma. Version 1.2021.
4. NCCN clinical practice guidelines in oncology-Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma. Version 1.2021

《淋巴瘤診治共識》—何杰金氏症淋巴瘤 (Hodgkin's lymphoma)



* 早期預後良好定義 :1.Age< 50 y/o 2.ESR normal 3.Stage I~II 4.No B symptoms 5.No bulky disease

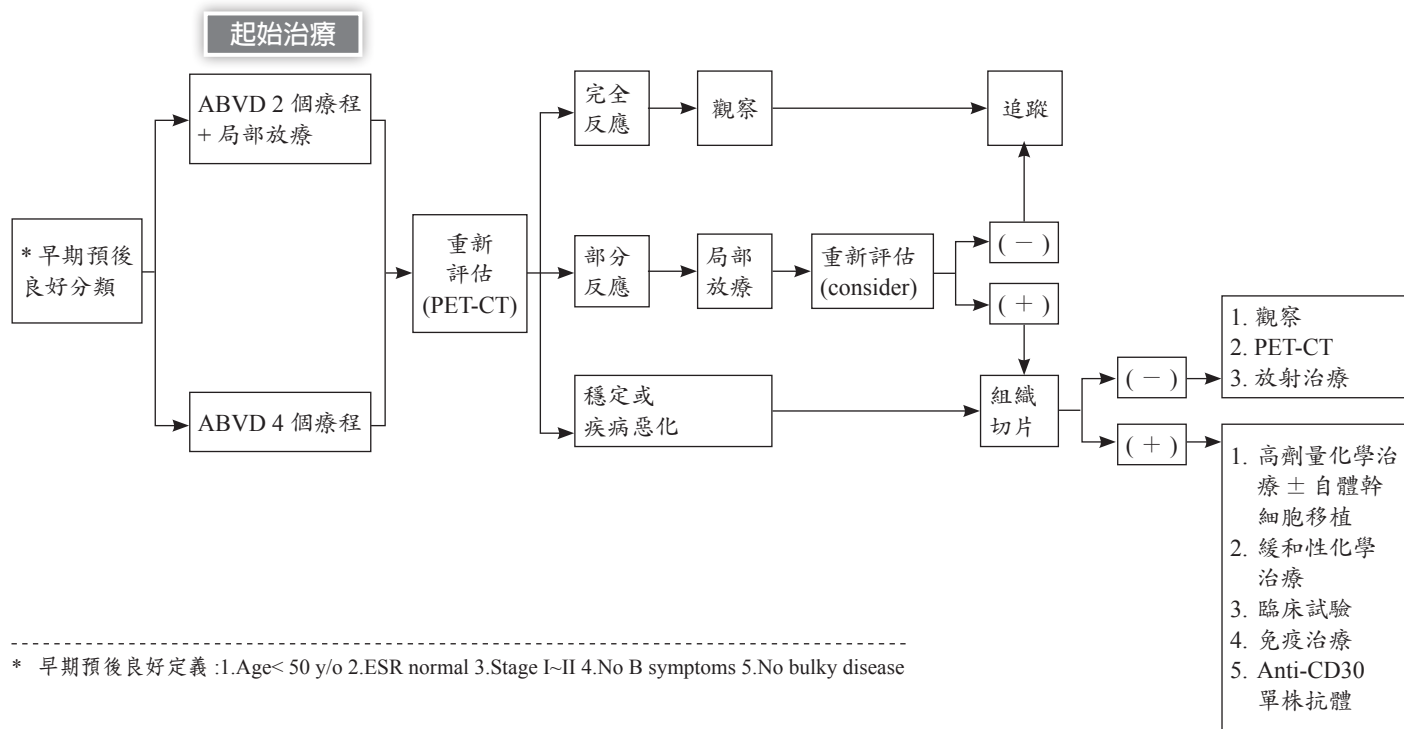
** 預後不良因子 :ESR>50, B symptoms, Nodal sites >3. bulky tumor(≥ 10 cm) or large mediastinum lesion(MMR>0.33).

《淋巴瘤診治共識》—CLASSICAL HODGKIN's LYMPHOMA(CHL) 臨床分期

| Clinical Stage | Bulky Disease (mediastinal or peripheral) | Number of nodal sites | Erythrocyte sedimentation rate (ESR) |
|---------------------------------------|--|-----------------------|---|
| I-IIA ± extralymphatic (E) lesions | NO | <4 | <50 |
| | NO | ≥ 4 | Any |
| | NO | Any | ≥ 50 |
| | YES | Any | Any |
| IB/IIB ± E lesions | NO | Any | Any |
| | YES | Any | Any |
| III-IV | YES/NO | Any | Any |

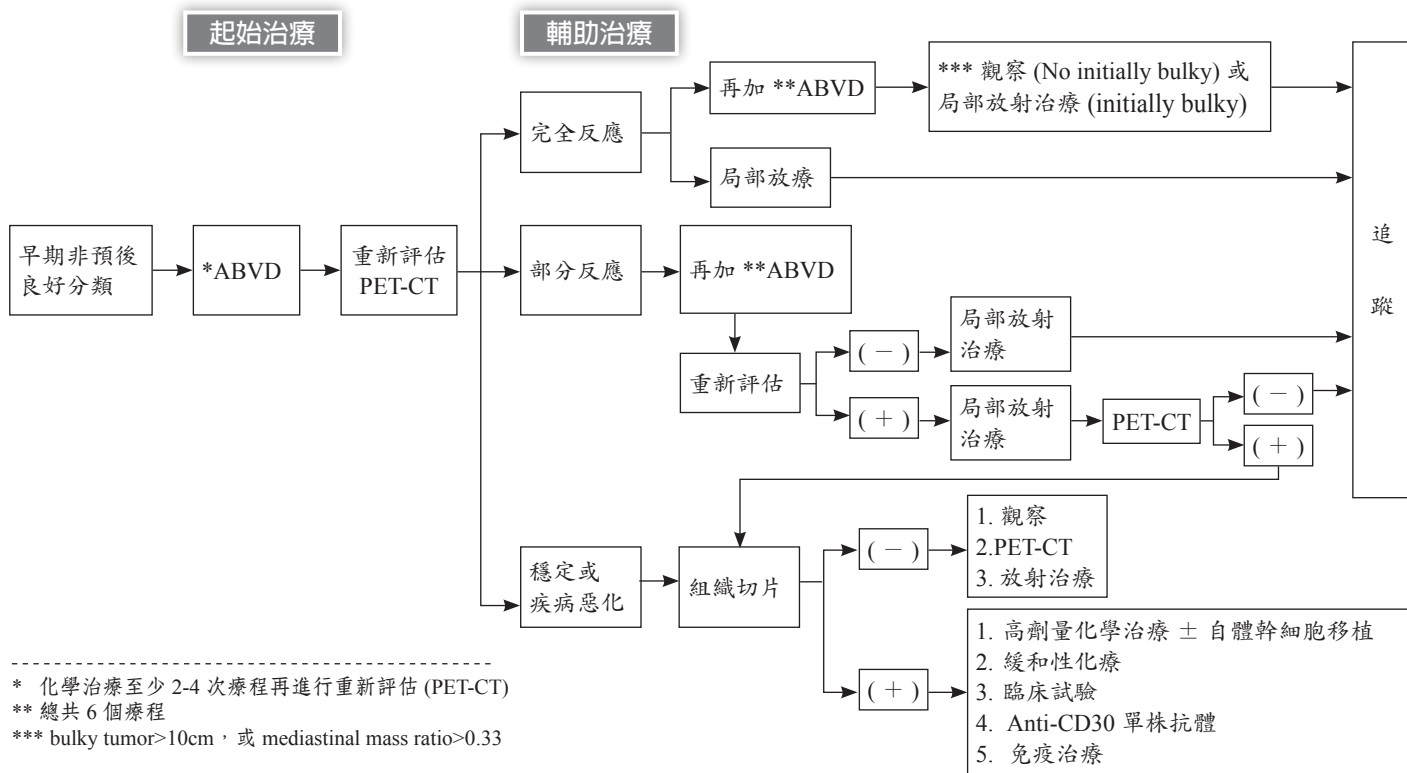
《淋巴瘤診治共識》—何杰金氏症 (Hodgkin lymphoma)

《組織型態：Classical Hodgkin's Lymphoma》



《淋巴瘤診治共識》—何杰金氏症 (Hodgkin lymphoma)

《組織型態：Classical Hodgkin's Lymphoma》



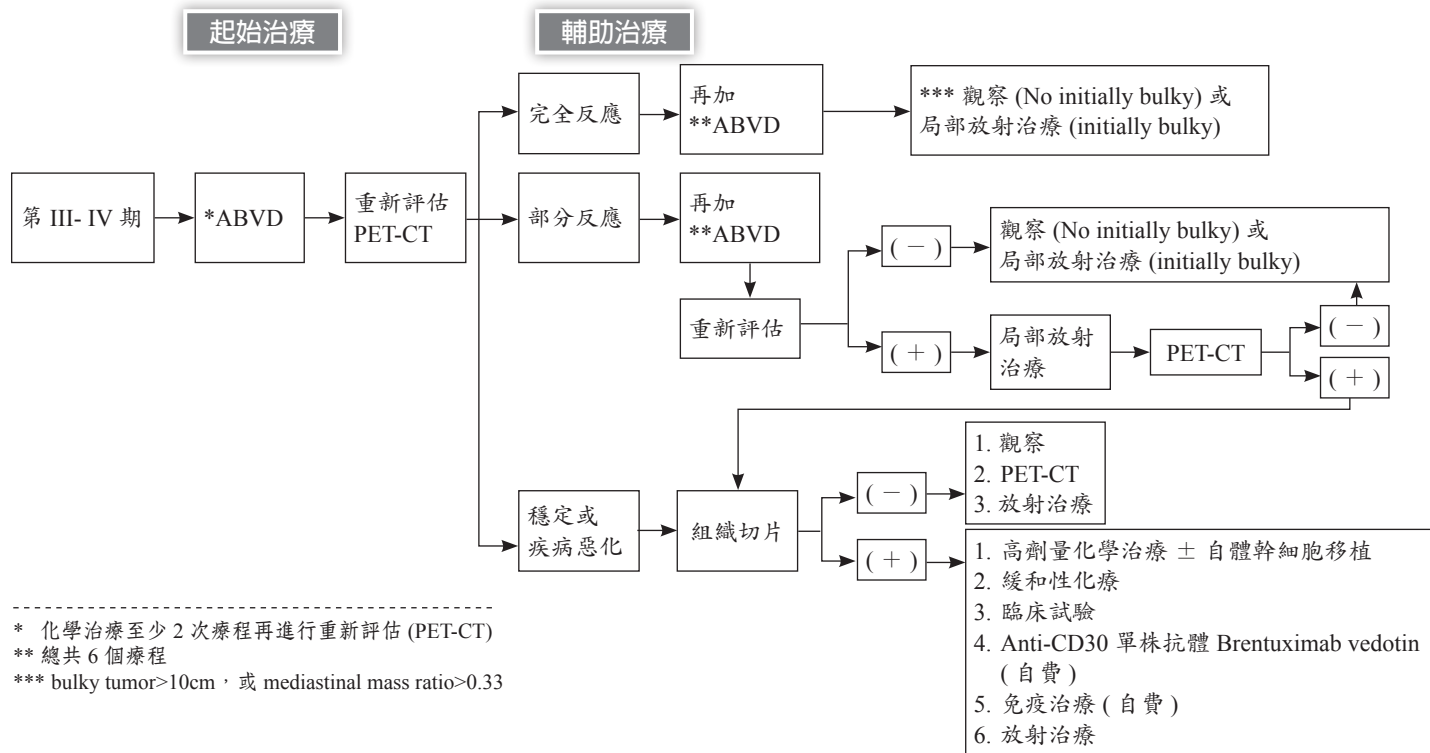
* 化學治療至少 2-4 次療程再進行重新評估 (PET-CT)

** 總共 6 個療程

*** bulky tumor>10cm，或 mediastinal mass ratio>0.33

《淋巴瘤診治共識》—何杰金氏症淋巴瘤 (Hodgkin's lymphoma)

《組織型態：Classical Hodgkin's Lymphoma》



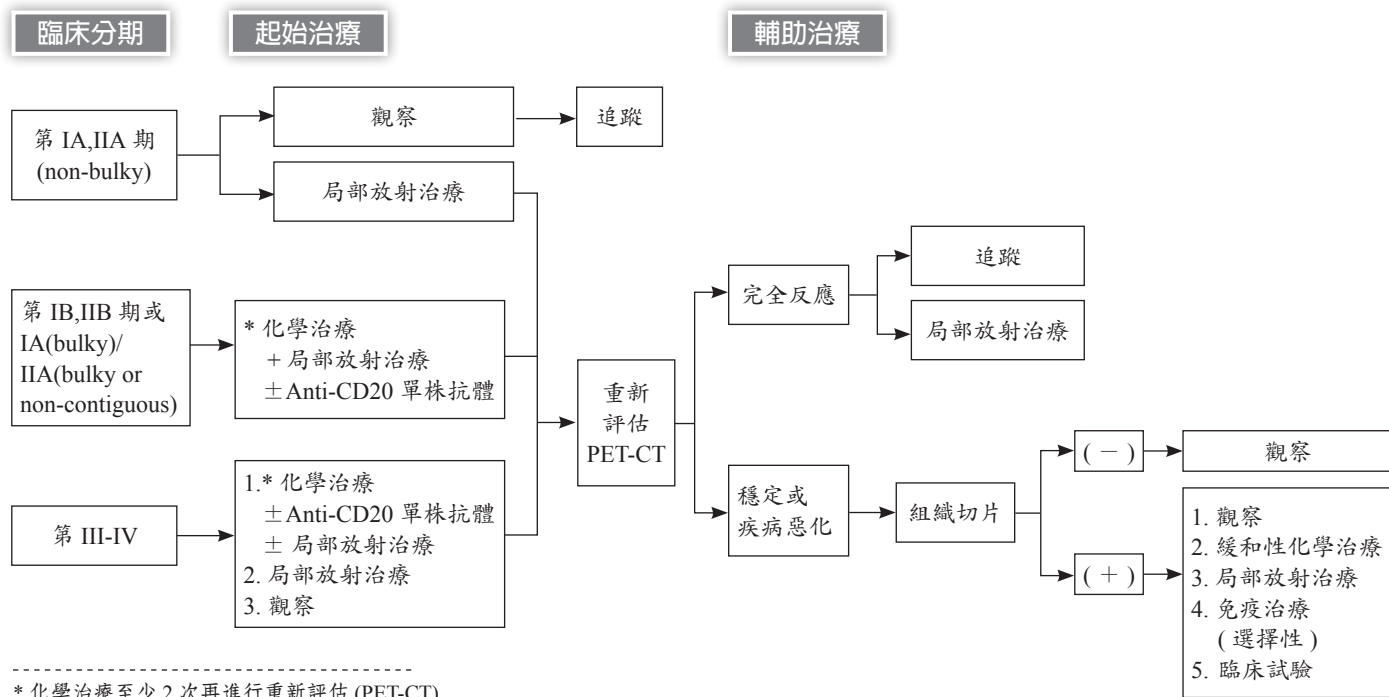
* 化學治療至少 2 次療程再進行重新評估 (PET-CT)

** 總共 6 個療程

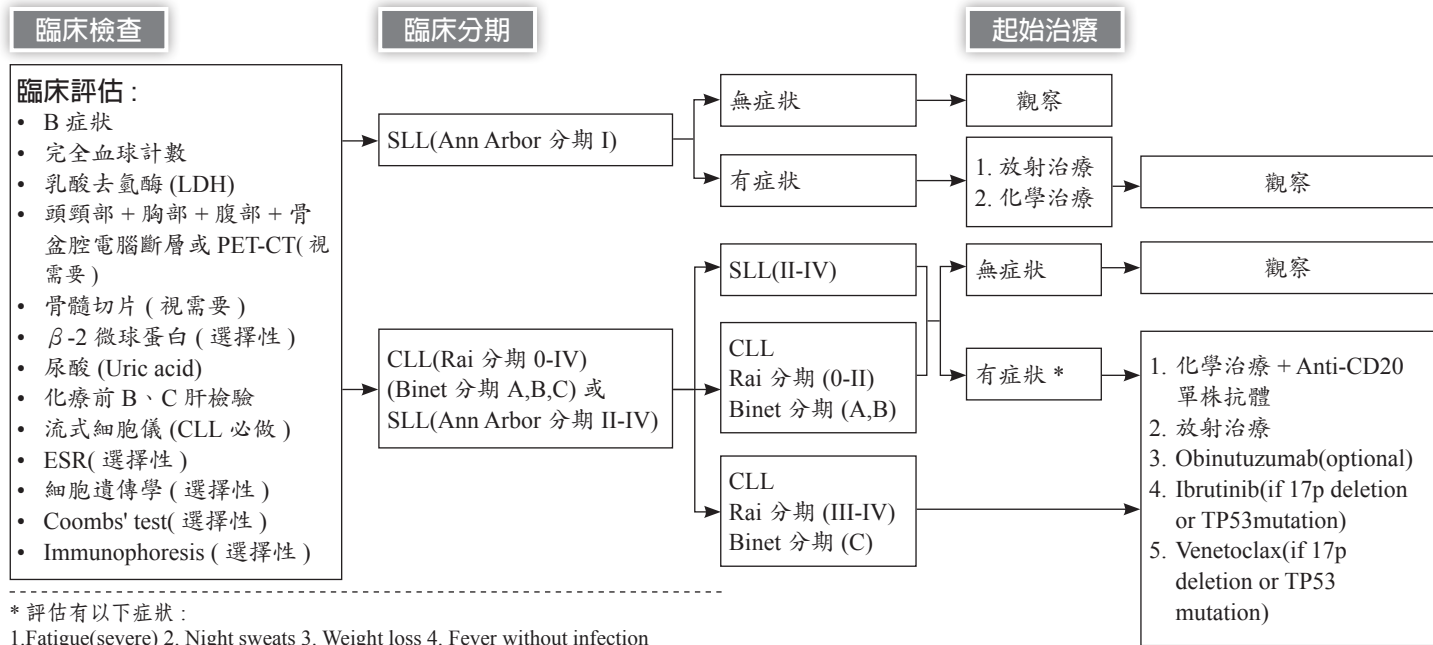
*** bulky tumor>10cm，或 mediastinal mass ratio>0.33

《淋巴瘤診治共識》—何杰金氏症淋巴瘤 (Hodgkin's Lymphoma)

《組織型態：Nodular lymphocyte-predominant Hodgkin's Lymphoma》



《淋巴瘤診治共識》—慢性淋巴細胞白血病 (CLL)/ 小淋巴細胞淋巴瘤 (SLL)



* 評估有以下症狀：

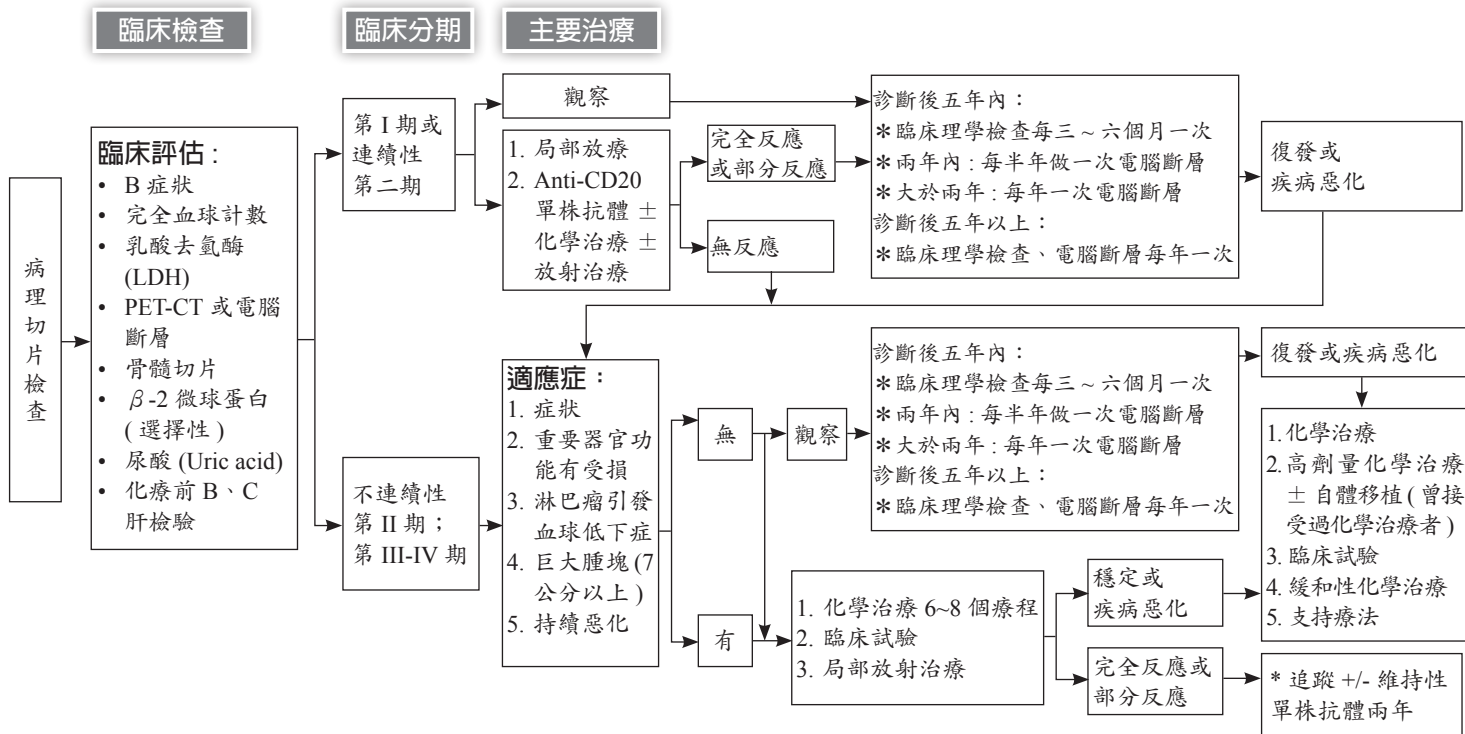
1. Fatigue (severe) 2. Night sweats 3. Weight loss 4. Fever without infection

* Threatened end-organ function

* Progressive bulky disease (spleen > 6cm below costal margin, lymph nodes > 10cm)

* Progressive anemia

* Progressive thrombocytopenia



* Rituximab 持續性治療每三個月施打一次，持續 2 年，僅適用於濾泡性淋巴瘤 (Gr. I-III)

《淋巴瘤診治共識》—瀰漫性大 B 細胞淋巴瘤 / 濾泡性淋巴瘤 Gr.III(DLBCL/FL Gr.III)

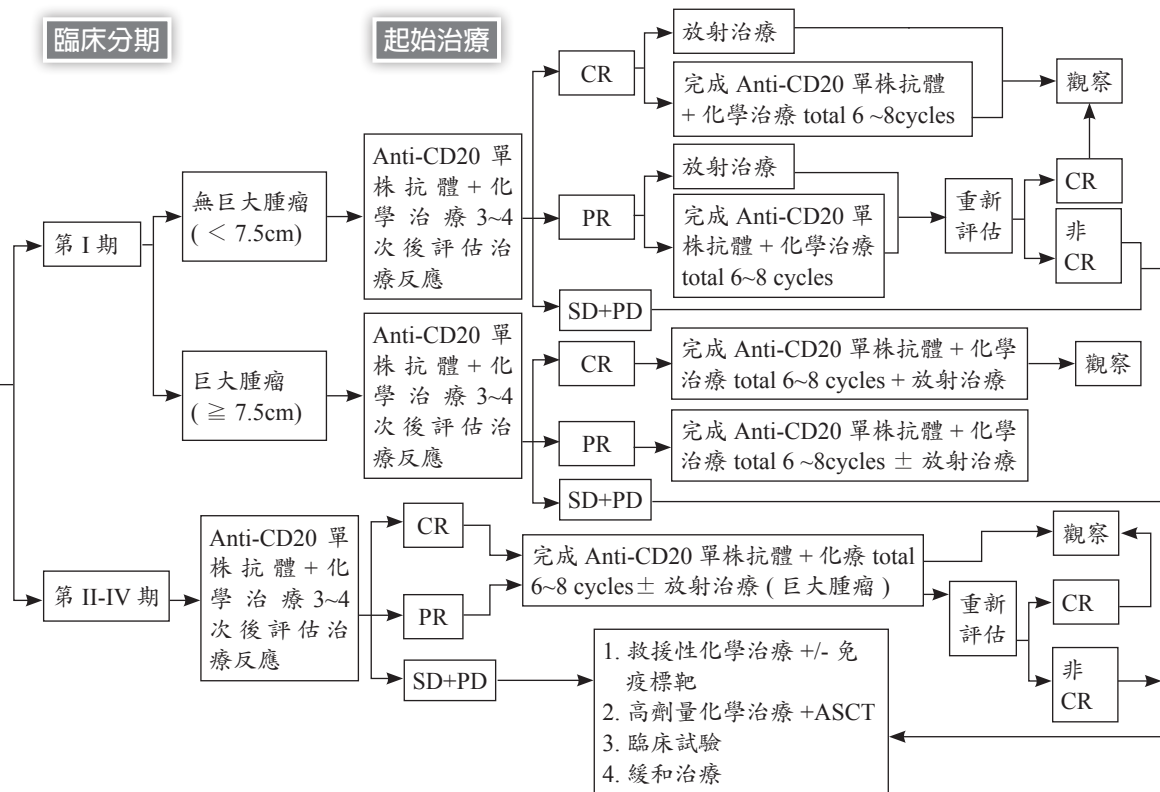
臨床檢查

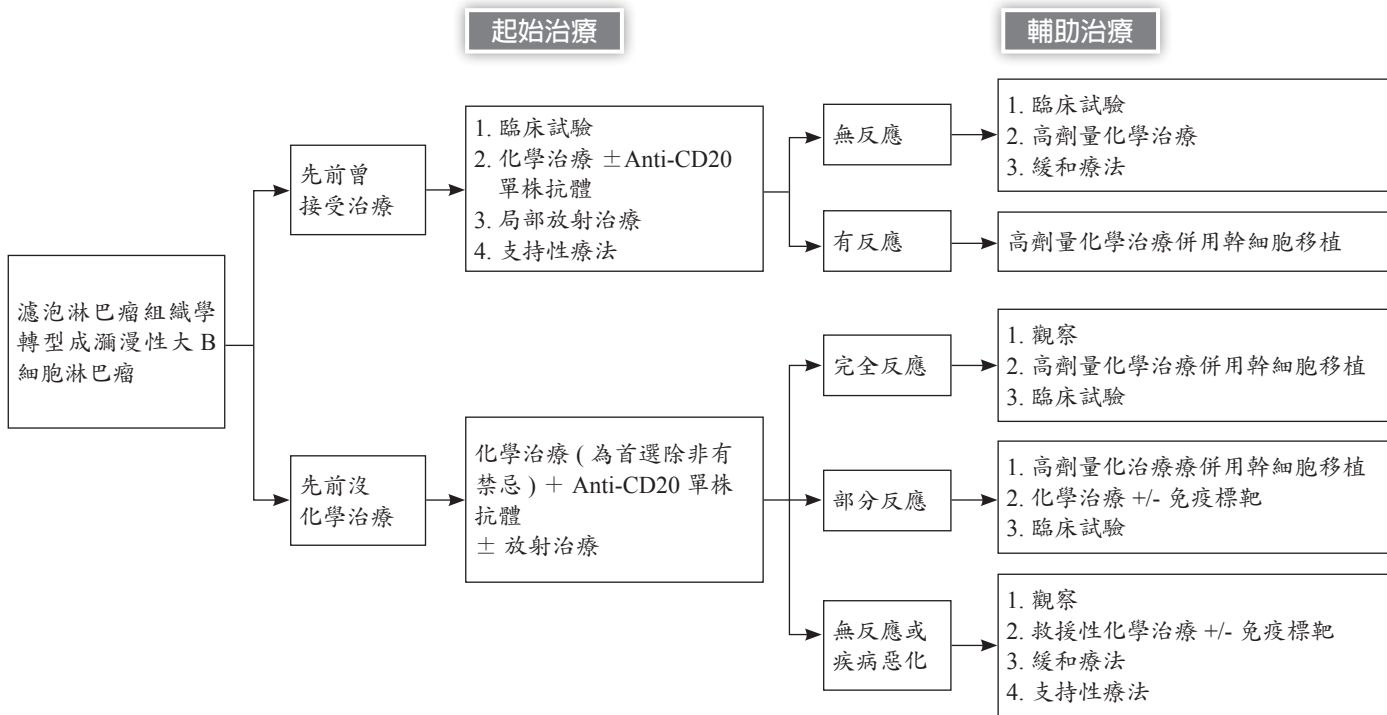
臨床分期

起始治療

臨床評估：

- B 症狀
- 完全血球計數
- 乳酸去氫酶 (LDH)
- PET-CT 或電腦斷層
- 骨髓切片 (選擇性)
- β -2 微球蛋白 (選擇性)
- 尿酸 (Uric acid)
- 化療前 B、C 肝檢驗
- 心臟超音波 (使用 anthracyclines 類藥物)

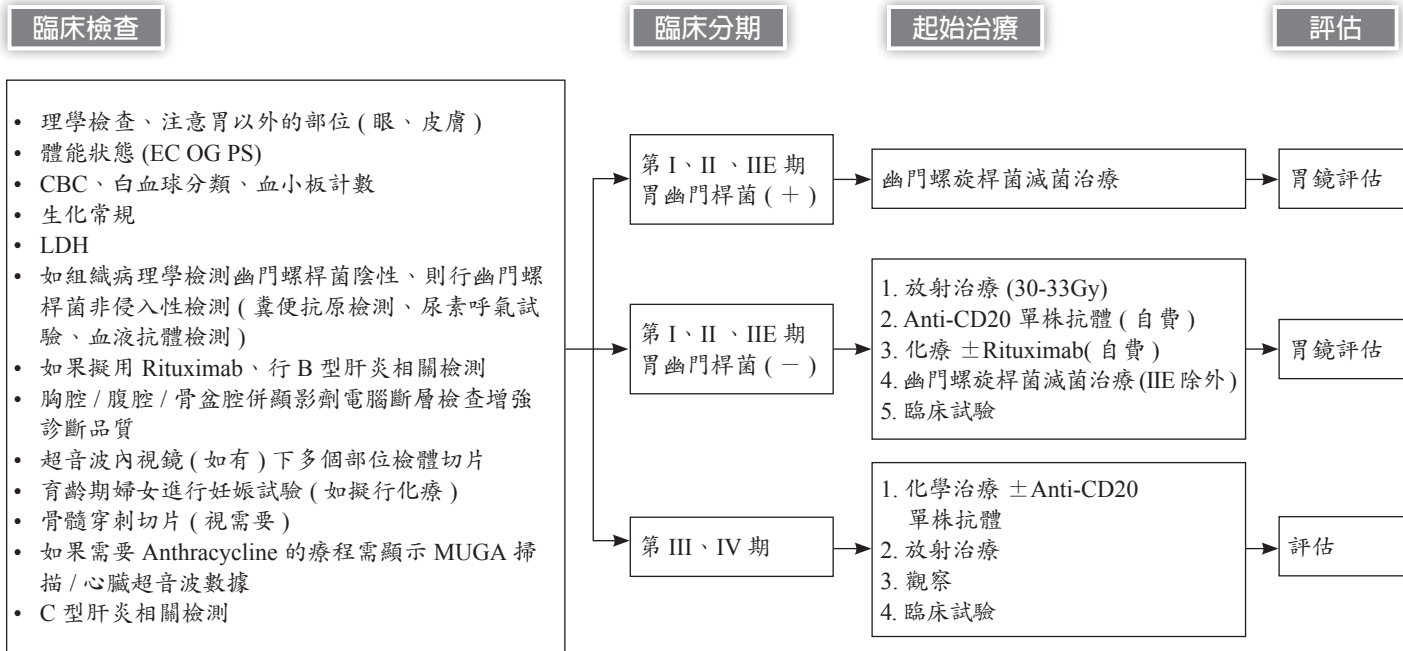




《 淋巴癌診治共識 》 — 胃黏膜淋巴組織相關淋巴癌 (Gastric MALT lymphoma) Lugano Staging

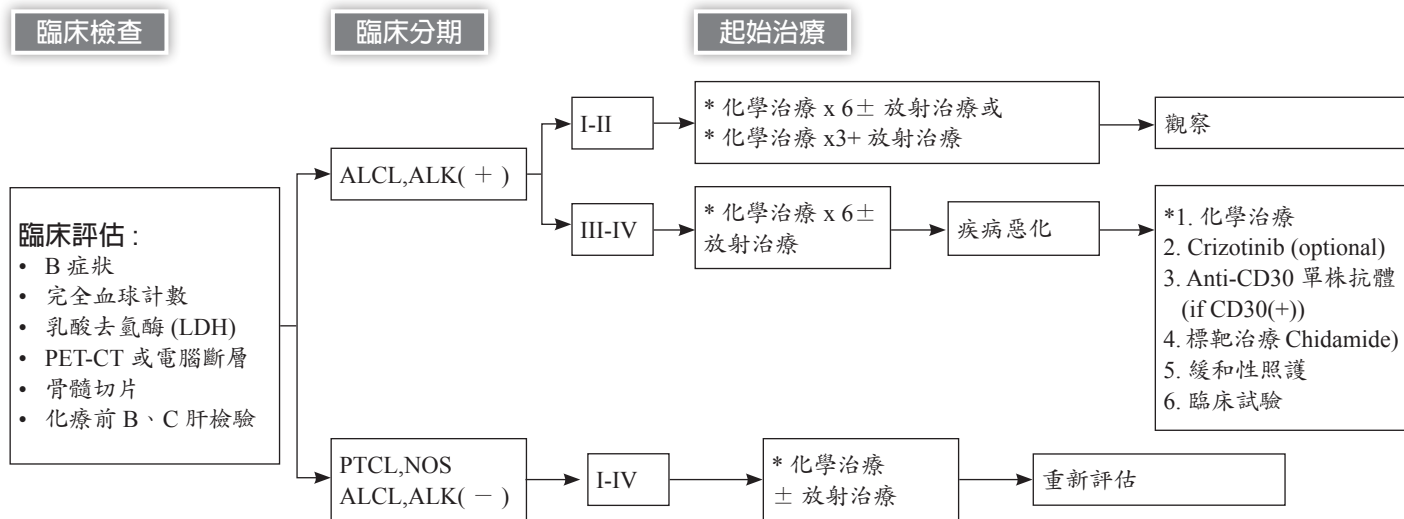
| Lugano Staging System for Gastrointestinal Lymphomas | Lugano Modification of Ann Arbor Staging System | TNM Staging System Adapted for Gastric Lymphoma | Tumor Extension | |
|--|---|---|-----------------|---|
| | Confined to GI tract ^a | | | |
| Stage I | I ₁ = mucosa, submucosa | I _E | T1 N0 M0 | Mucosa, submucosa |
| | I ₂ = muscularis propria, serosa | I _E | T2 N0 M0 | Muscularis propria |
| | | I _E | T3 N0 M0 | Serosa |
| | Extending into abdomen | | | |
| Stage II | II ₁ = local nodal involvement | II _E | T1-3 N1 M0 | Perigastric lymph nodes |
| | II ₂ = distant nodal involvement | II _E | T1-3 N2 M0 | More distant regional lymph nodes |
| Stage IIE | Penetration of serosa to involve adjacent organs or tissues | II _E | T4 N0 M0 | Invasion of adjacent structures |
| Stage IV ^b | Disseminated extranodal involvement or concomitant supradiaphragmatic nodal involvement | | T1-4 N3 M0 | Lymph nodes on both sides of the diaphragm/ distant metastases (eg, bone marrow or additional extranodal sites) |
| | | IV | T1-4 N0-3 M1 | |

《淋巴癌診治共識》—胃黏膜淋巴組織相關淋巴癌 (Gastric MALT lymphoma)



《淋巴瘤診療共識》—T 細胞淋巴瘤

《(Cutaneous T-cell lymphoma and T-immunoblastic lymphoma are not included)》



* Treatment as diffuse large B cell lymphoma without rituximab.

《參考文獻》

1. NCCN clinical practice guidelines in oncology-Hodgkin Lymphoma. version 2.2020.
2. NCCN clinical practice guidelines in oncology-B-cell Lymphoma. Version 4.2020.
3. NCCN clinical practice guidelines in oncology-T-cell Lymphoma. Version 1.2021.
4. NCCN clinical practice guidelines in oncology-Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma. Version 1.2021
5. Cheson BD, Fisher RI, Barrington SF, et al. Recommendations for initial evaluation, staging, and response assessment of Hodgkin and non-Hodgkin lymphoma: the Lugano classification. *J Clin Oncol* 2014;32:3059-3068.
6. Cunningham D, Hawkes EA, Jack A, et al. Rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisolone in patients with newly diagnosed diffuse large B-cell non-Hodgkin lymphoma: a phase 3 comparison of dose intensification with 14-day versus 21-day cycles. *Lancet* 2013;381:1817-1826.
7. Eichhorst B, Fink AM, Busch R, et al. Frontline chemoimmunotherapy with fludarabine (F), cyclophosphamide (C), and rituximab (R) (FCR) shows superior efficacy in comparison to bendamustine (B) and rituximab (BR) in previously untreated and physically fit patients (pts) with advanced chronic chronic lymphocytic leukemia (CLL): Final analysis of an international, randomized study of the German CLL Study Group (GCLLSG) (CLL10 Study)[abstract]. *Blood* 2014;124:Abstract 19.
8. Flinn IW, van der Jagt R, Kahl BS, et al. Open-label, randomized, noninferiority study of bendamustine-rituximab or R-CHOP/R-CVP in first-line treatment of advanced indolent NHL or MCL: the BRIGHT study. *Blood* 2014;123:2944-2952.
9. Rummel MJ, Niederle N, Maschmeyer G, et al. Bendamustine plus rituximab versus CHOP plus rituximab as first-line treatment for patients with indolent and mantle-cell lymphomas: an open-label, multicentre, randomised, phase 3 non-inferiority trial. *Lancet* 2013;381:1203-1210. Flinn IW, van der Jagt R, Kahl BS, et al. Open-label, randomized, noninferiority study of bendamustine-rituximab or R-CHOP/R-CVP in first-line treatment of advanced indolent NHL or MCL: the BRIGHT study. *Blood* 2014;123:2944-2952.
10. Salles, G, Seymour JF, Feugier P, et al. Updated 6 year follow-up of the PRIMA study confirms the benefit of 2-year rituximab maintenance in follicular lymphoma patients responding to frontline immunochemotherapy [abstract]. *Blood* 2013;122:Abstract 509.
11. Radford J, et al. Involved field radiotherapy versus no further treatment in patients with clinical stages IA and IIA Hodgkin Lymphoma and a negative

- PET scan after 3 cycles of ABVD. results of the UK NCRI RAPID Trial [abstract]. *Blood* 2012; 120:Abstract 547.
12. Fischer K, Cramer P, Busch R, et al. Bendamustine in combination with rituximab for previously untreated patients with chronic lymphocytic leukemia: A multicenter phase II trial of the German Chronic Lymphocytic Leukemia Study Group. *J Clin Oncol* 2012;30:3209-3216. Knauf WU, Lissichkov T, Aldaoud A, et al. Phase III randomized study of bendamustine
 13. Meyer R, Gospodarowicz M, Connors J, et al. ABVD alone versus radiation-based therapy in limited-stage Hodgkin's lymphoma. *N Engl J Med* 2012;366:399-408.
 14. Salles GA, Seymour JF, Offner F, et al. Rituximab maintenance for 2 years in patients with high tumour burden follicular lymphoma responding to rituximab plus chemotherapy (PRIMA): A phase 3, randomised controlled trial. *The Lancet* 2011;377:42-51.
 15. Salles GA, Seymour JF, Offner F, et al. Rituximab maintenance for 2 years in patients with high tumour burden follicular lymphoma responding to rituximab plus chemotherapy (PRIMA): A phase 3, randomised controlled trial. *The Lancet* 2011;377:42-51.
 16. Coiffier B, Thieblemont C, Van Den Neste E, et al. Long-term outcome of patients in the LNH-98.5 trial, the first randomized study comparing rituximab-CHOP to standard CHOP chemotherapy in DLBCL patients: a study by the Groupe d'Etudes des Lymphomes de l'Adulte. *Blood* 2010;116:2040-2045.
 17. Gisselbrecht C, Glass B, Mounier N, et al. Salvage regimens with autologous transplantation for relapsed large B-cell lymphoma in the rituximab era. *J Clin Oncol* 2010;28:4184-4190.
 18. WHO classification of tumours of haematopoietic and lymphoid tissues. In: Swerdlow SH, Campo E, Harris NL, et al., eds (ed 4). Lyon, France: IARC; 2008
 19. Fernández de Larrea C, Martínez C, et al. Salvage chemotherapy with alternating MINE- ESHAP regimen in relapsed or refractory Hodgkin's lymphoma followed by autologous stem cell transplantation. *Ann Oncol* 2010;21(6):1211-1216.
 20. Feugier P, Van Hoof A, Sebban C, et al. Long-term results of the R-CHOP study in the treatment of elderly patients with diffuse large B-cell lymphoma: a study by the Groupe d'Etude des Lymphomes de l'Adulte. *J Clin Oncol* 2005;23:4117-4126.

《 淋巴癌抗癌藥物治療指引 》

Hodgkin's Lymphoma (Age ≥ 18 years)

Classical Hodgkin's Lymphoma

ABVD (Doxorubicin, Bleomycin, Vinblastine, Dacarbazine) ± ISRT

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|------------------------|-------|-----|----|------|
| Doxorubicin | 25 | 1, 15 | Q4W | 4 | 1-4 |
| Bleomycin | 10 unit/m ² | 1, 15 | Q4W | 4 | |
| Vinblastine | 6 | 1, 15 | Q4W | 4 | |
| Dacarbazine | 375 | 1, 15 | Q4W | 4 | |

Escalated BEACOPP (Bleomycin, Etoposide, Doxorubicin, Cyclophosphamide, Vincristine, Procarbazine, Prednisone) followed by ABVD with ISRT10

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|------------------------|------|-----|-------|------|
| Bleomycin | 10 unit/m ² | 8 | Q2W | 2 + 2 | 5-6 |
| Etoposide | 200 | 1-3 | Q2W | 2 + 2 | |
| Doxorubicin | 35 | 1 | Q2W | 2 + 2 | |
| Cyclophosphamide | 1200 | 1 | Q2W | 2 + 2 | |
| Vincristine | 1.4 | 8 | Q2W | 2 + 2 | |
| Procarbazine | 100 QHS | 1-7 | Q2W | 2 + 2 | |
| Prednisone | 40 PO QD | 1-14 | Q2W | 2 + 2 | |

Brentuximab vedotin+AVD (doxorubicin+ vinblastine+ dacarbazine)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------------|----------------------|-------|-----|----|------|
| Brentuximab vedotin | 1.2 mg/kg | 1, 15 | Q4W | 6 | 7 |
| Doxorubicin | 25 | 1, 15 | Q4W | 6 | |
| Vinblastine | 6 | 1, 15 | Q4W | 6 | |
| Dacarbazine | 375 | 1, 15 | Q4W | 6 | |

*三院有個別版本

參考文獻

1. Eich HT, Diehl V, Gorgen H, et al. Intensified chemotherapy and dose-reduced involved-field radiotherapy in patients with early unfavorable Hodgkin's lymphoma: final analysis of the German Hodgkin Study Group HD 11 trial. *J Clin Oncol* 2010;28:4199-4206.
2. Engert A, Plutschow A, Eich HT, et al. Reduced treatment intensity in patients with early-stage Hodgkin's lymphoma. *N Engl J Med* 2010;363:640-652.
3. Raemaekers JM, André MP, Federico M, et al. Omitting radiotherapy in early positron emission tomography-negative stage I/II Hodgkin lymphoma is associated with an increased risk of early relapse: clinical results of the preplanned interim analysis of the randomized EORTC/LYSA/FIL H10 trial. *J Clin Oncol* 2014;32:1188-1194.
4. Radford J, Illidge T, Counsell N, et al. Results of a trial of PET-directed therapy for early-stage Hodgkin's lymphoma. *N Engl J Med* 2015;372:1598-1607.
5. Twelves C, Wong A, Nowacki MP, et al. Capecitabine as adjuvant treatment for stage III colon cancer. *N Engl J Med* 2005;352:2696-2704.
6. Engert A, Haverkamp H, Cobe C, et al. Reduced-intensity chemotherapy and PET-guided radiotherapy in patients with advanced stage Hodgkin's lymphoma (HD 15 trial): a randomized, open-label, phase 3 non-inferiority trial. *Lancet* 2012; 379(9828): 1791-1799
7. von Tresckow B, Plutschow A, Fuches M, et al. Dose-intensification in early unfavorable Hodgkin's lymphoma: final analysis of the German Hodgkin Study Group HD14 trial. *J Clin Oncol* 2012; 30: 907-913.

7. Connors JM, Jurczak W, Straus DJ, et al. Brentuximab Vedotin with Chemotherapy for Stage III or IV Hodgkin's Lymphoma. *New England Journal of Medicine*. 2018;378(4):331-344.

Nodular Lymphocyte-Predominant Hodgkin's Lymphoma

ABVD (Doxorubicin, Bleomycin, Vinblastine, Dacarbazine) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|------------------------|-------|-----|----|------|
| Doxorubicin | 25 | 1, 15 | Q4W | | 1, 2 |
| Bleomycin | 10 unit/m ² | 1, 15 | Q4W | | |
| Vinblastine | 6 | 1, 15 | Q4W | | |
| Dacarbazine | 375 | 1, 15 | Q4W | | |
| ± Rituximab | 375 | 1 | Q4W | | |

CHOP (Cyclophosphamide, Doxorubicin, Vincristine, Prednisone) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Cyclophosphamide | 750 | 1 | Q3W | | 3 |
| Doxorubicin | 50 | 1 | Q3W | | |
| Vincristine | 1.4 | 1 | Q3W | | |
| Prednisone | 40 | 1-5 | Q3W | | |
| ± Rituximab | 375 | 1 | Q3W | | |

CVP (Cyclophosphamide, Vinblastine, Prednisone) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|------|-------|----|------|
| Cyclophosphamide | 500 | 1 | Q2-3W | | 4 |
| Vinblastine | 6 | 1, 8 | Q2-3W | | |
| Prednisone | 40 | 1-7 | Q2-3W | | |
| ± Rituximab | 375 | 1 | Q2-3W | | |

Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-----------|----------------------|-----|----|----|------|
| Rituximab | 375 | 1 | QW | | 5-9 |

參考文獻

1. Savage KJ, Skinnider B, AI-Mansour M, et al. Treating limited stage nodular lymphocyte predominant Hodgkin lymphoma similarly to classical Hodgkin lymphoma with ABVD may improve outcome. *Blood* 2011;118:4585-4590.
2. Canellos GP, Mauch P. What is the appropriate systemic chemotherapy for lymphocyte-predominant Hodgkin's Lymphoma? *J Clin Oncol* 2010;28:e8.
3. Fanale MA, Lai C-M, McLaughlin P, et al. Outcomes of Nodular Lymphocyte Predominant Hodgkin's Lymphoma (NLPHL) Patients Treated with R-CHOP. *ASH Annual Meeting Abstracts* 2010;116:2812.
4. Shankar A, Hall GW, Gorde-Grosjean S, et al. Treatment outcome after low intensity chemotherapy [CVP] in children and adolescents with early stage nodular lymphocyte predominant Hodgkin's lymphoma - an Anglo-French collaborative report. *Eur J Cancer* 2012;48:1700-1706.
5. Advani RH, Hoppe RT. How I treat nodular lymphocyte predominant Hodgkin lymphoma. *Blood* 2013;122:4182-4188.
6. Advani RH, Horning SJ, Hoppe RT, et al. Mature results of a phase II study of rituximab therapy for nodular lymphocyte-predominant Hodgkin lymphoma. *J Clin Oncol* 2014;32:912-918.
7. Schulz H, Rehwald U, Morschhauser F, et al. Rituximab in relapsed lymphocyte-predominant Hodgkin lymphoma: long-term results of a phase 2 trial by the German Hodgkin Lymphoma Study Group (GHSg). *Blood* 2008;111(1):109-111.
8. Eichenauer DA, Fuchs M, Plutschow A, et al. Phase 2 study of rituximab in newly diagnosed stage IA nodular lymphocyte-predominant Hodgkin lymphoma: a report from the German Hodgkin Study Group. *Blood* 2011;118:4363-4365.
9. Eichenauer DA, Plutschow A, Fuchs M, et al. Long-Term Course of Patients With Stage IA Nodular Lymphocyte-Predominant Hodgkin Lymphoma: A Report From the German Hodgkin Study Group. *J Clin Oncol* 2015;33:2857-2862.

Systemic therapy for relapsed or refractory disease

Second-Line or Subsequent Therapy Options

CHL

DHAP (Dexamethasone, Cisplatin, high-dose Cytarabine)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|-----|-------|----|------|
| Dexamethasone | 40 mg QD | 1-4 | Q3-4W | | 1, 2 |
| Cisplatin | 100 | 1 | Q3-4W | | |
| Cytarabine | 2000 Q12H | 2 | Q3-4W | | |

ESHAP (Etoposide, Methylprednisolone, Cisplatin, high-dose Cytarabine)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------------|----------------------|-----|-------|----|---------|
| Etoposide | 40 | 1-4 | Q3-4W | | 3, 4, 5 |
| Methylprednisolone | 500 | 1-4 | Q3-4W | | |
| Cisplatin | 25 | 1-4 | Q3-4W | | |
| Cytarabine | 2000 | 5 | Q3-4W | | |

Gemcitabine/Bendamustine/Vinorelbine

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| Gemcitabine | 800 | 1, 4 | Q3W | 4 | 22 |
| Bendamustine | 100 | 2, 3 | Q3W | 4 | |
| Vinorelbine | 20 | 1 | Q3W | 4 | |
| Prednisolone | 100 mg PO | 1-4 | Q3W | 4 | |

GCD (Gemcitabine, Carboplatin, Dexamethasone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|------|-----|----|------|
| Gemcitabine | 1000 | 1, 8 | Q3W | | 6, 7 |
| Carboplatin | AUC 5 | 1 | Q3W | | |
| Dexamethasone | 40 mg | 1-4 | Q3W | | |

GVD (Gemcitabine, Vinorelbine, Lipo-Doxorubicin)

1. For transplant- naïve patients

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|------|-----|----|------|
| Gemcitabine | 1000 | 1, 8 | Q3W | | 8 |
| Vinorelbine | 20 | 1, 8 | Q3W | | |
| Lipo-Doxorubicin | 15 | 1, 8 | Q3W | | |

2. For post-transplant patients

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|------|-----|----|------|
| Gemcitabine | 800 | 1, 8 | Q3W | | 8 |
| Vinorelbine | 15 | 1, 8 | Q3W | | |
| Lipo-Doxorubicin | 10 | 1, 8 | Q3W | | |

ICE (Ifosfamide, Carboplatin, Etoposide)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|-----|----|-------|
| Etoposide | 100 | 1-3 | Q3W | | 9, 10 |
| Carboplatin | AUC 5 | 2 | Q3W | | |
| Ifosfamide | 5000 | 2 | Q3W | | |

IGEV (Ifosfamide, Gemcitabine, Vinorelbine, Prednisolone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| Ifosfamide | 2000 | 1-4 | Q3W | | 11 |
| Gemcitabine | 800 | 1, 4 | Q3W | | |
| Vinorelbine | 20 | 1 | Q3W | | |
| Prednisolone | 100 mg | 1-4 | Q3W | | |

Mini-BEAN (Carmustine, Cytarabine, Etoposide, Mephalan)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------|----------------------|-----|-------|----|--------|
| Carmustine | 60 | 1 | Q4-6W | | 12, 13 |
| Cytarabine | 100 | 2-5 | Q4-6W | | |
| Etoposide | 75 | 2-5 | Q4-6W | | |
| Mephalan | 30 | 6 | Q4-6W | | |

MINE (Etoposide, Ifosfamide, Mesna, Mitoxantrone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|-----|-------|----|------|
| Mesna | 1300 | 1-3 | Q3-4W | | 14 |
| Ifosfamide | 1300 | 1-3 | Q3-4W | | |
| Mitoxantrone | 8 | 1 | Q3-4W | | |
| Etoposide | 65 | 1-3 | Q3-4W | | |

Brentuximab vedotin (only for CHL)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|----------------------|----------------------|-----|-----|----|------|
| Brentuximab vedotin* | 1.8 mg/kg | 1 | Q3W | | 15 |

*alone or in combination with the second-line regimens below

Brentuximab vedotin + Bendamustine

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|----------------------|----------------------|------|-----|----|------|
| Brentuximab vedotin* | 1.8 mg/kg | 1 | Q3W | | 23 |
| Bendamustine | 90 (70-90) | 1, 2 | Q3W | | |

Brentuximab vedotin + Nivolumab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|----------------------|----------------------|-----|-----|----------------------------------|------|
| Brentuximab vedotin* | 1.8 mg/kg | 1 | Q3W | | 24 |
| Nivolumab | 3 mg/kg | 8 | Q3W | 1 st | |
| Nivolumab | 3 mg/kg | 1 | Q3w | 2 nd ~4 th | |

Additional Therapy Options: (only for CHL)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| Bendamustine | 120 | 1, 2 | Q4W | | 16 |

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------|----------------------|-----|----|----|------|
| Everolimus | 10 mg PO QD | | | | 17 |

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| Lenalidomide | 25 mg PO QD | 1-21 | Q4W | | 18 |

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-----------|----------------------|-----|-----|----|--------|
| Nivolumab | 3 mg/kg | 1 | Q2W | | 19, 20 |

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|-----|-----|----|------|
| Pembrolizumab | 10 mg/kg | 1 | Q2W | | 21 |

Bendamustine + Carboplatin + Etoposide*

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| Bendamustine | 60-120 | 1, 2 | Q3W | | 25 |
| Carboplatin | AUC 5 | 1 | Q3W | | |
| Etoposide | 100 | 1-3 | Q3w | | |

*CD20(+) + Rituximab 375 mg/m²

GEMOX (Gemcitabine, Oxaliplatin)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|------------|----|------|
| Gemcitabine | 1000 | 1 | Q2W or Q3W | | 26 |
| Oxaliplatin | 100 | 1 | Q2W or Q3W | | |

NLPHL

DHAP (Dexamethasone, Cisplatin, high-dose Cytarabine) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|-----|-------|----|------|
| ± Rituximab | 375 | 1 | | | 1, 2 |
| Dexamethasone | 40 mg QD | 1-4 | Q3-4W | | |
| Cisplatin | 100 | 1 | Q3-4W | | |
| Cytarabine | 2000 Q12H | 2 | Q3-4W | | |

ESHAP (Etoposide, Methylprednisolone, Cisplatin, high-dose Cytarabine) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------------|----------------------|-----|-------|----|---------|
| ± Rituximab | 375 | 1 | | | 3, 4, 5 |
| Etoposide | 40 | 1-4 | Q3-4W | | |
| Methylprednisolone | 500 | 1-4 | Q3-4W | | |
| Cisplatin | 25 | 1-4 | Q3-4W | | |
| Cytarabine | 2000 | 5 | Q3-4W | | |

ICE (Ifosfamide, Carboplatin, Etoposide) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|-----|----|-------|
| ± Rituximab | 375 | 1 | | | 9, 10 |
| Etoposide | 100 | 1-3 | Q3W | | |
| Carboplatin | AUC 5 | 2 | Q3W | | |
| Ifosfamide | 5000 | 2 | Q3W | | |

IGEV (Ifosfamide, Gemcitabine, Vinorelbine, Prednisolone) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 1 | | | 11 |
| Ifosfamide | 2000 | 1-4 | Q3W | | |
| Gemcitabine | 800 | 1, 4 | Q3W | | |
| Vinorelbine | 20 | 1 | Q3W | | |
| Prednisolone | 100 mg | 1-4 | Q3W | | |

*三院有個別版本

參考文獻

1. Josting A, Rudolph C, Reiser M, et al. Time-intensified dexamethasone/cisplatin/cytarabine: an effective salvage therapy with low toxicity in patients with relapsed and refractory Hodgkin's disease. *Ann Oncol* 2002;13(10):1628-1635.
2. Abali H, Urün Y, Oksüzoğlu B, Budakoğlu B, et al. Comparison of ICE (ifosfamide-carboplatin-etoposide) versus DHAP (cytosine arabinoside-cisplatin-dexamethasone) as salvage chemotherapy in patients with relapsed or refractory lymphoma. *Cancer Invest* 2008;26(4):401-406.
3. Aparicio J, Segura A, Garcera S, et al. ESHAP is an active regimen for relapsing Hodgkin's disease. *Ann Oncol* 1999;10(5):593-595.
4. Fernández de Larrea C, Martínez C, et al. Salvage chemotherapy with alternating MINEESHAP regimen in relapsed or

- refractory Hodgkin's lymphoma followed by autologous stem cell transplantation. *Ann Oncol* 2010;21(6):1211-1216.
5. Labrador J, Cabrero-Calvo M, Perez-Lopez E, et al. ESHAP as salvage therapy for relapsed or refractory Hodgkin's lymphoma. *Ann Hematol* 2014;93:1745-1753.
 6. Crump M, Kuruvilla J, Couban S, et al. Randomized comparison of gemcitabine, dexamethasone, and cisplatin versus dexamethasone, cytarabine, and cisplatin chemotherapy before autologous stem-cell transplantation for relapsed and refractory aggressive lymphomas: NCIC-CTG LY.12. *J Clin Oncol* 2014;32:3490-3496.
 7. Gopal AK, Press OW, Shustov AR, et al. Efficacy and safety of gemcitabine, carboplatin, dexamethasone, and rituximab in patients with relapsed/refractory lymphoma: a prospective multicenter phase II study by Puget Sound Oncology Consortium. *Leuk Lymphoma* 2010;51:1523-1529.
 8. Bartlett N, Niedzwiecki D, Johnson J, et al. Gemcitabine, vinorelbine, and pegylated liposomal doxorubicin (GVD), a salvage regimen in relapsed Hodgkin's lymphoma: CALGB 59804. *Ann Oncol* 2007;18(6):1071-1079.
 9. Moskowitz CH, Nimer SD, Zelenetz AD, et al. A 2-step comprehensive high-dose chemoradiotherapy second-line program for relapsed and refractory Hodgkin disease: analysis by intent to treat and development of a prognostic model. *Blood* 2001;97(3):616-623.
 10. Abali H, Urün Y, Oksüzoğlu B, Budakoğlu B, et al. Comparison of ICE (ifosfamide-carboplatin-etoposide) versus DHAP (cytosine arabinoside-cisplatin-dexamethasone) as salvage chemotherapy in patients with relapsed or refractory lymphoma. *Cancer Invest* 2008;26(4):401-406.
 11. Santoro A, Magagnoli M, Spina M, et al. Ifosfamide, gemcitabine, and vinorelbine: a new induction regimen for refractory and relapsed Hodgkin's lymphoma. *Haematologica* 2007;92(1):35-41.
 12. Colwill R, Crump M, Couture F, et al. Mini-BEAM as salvage therapy for relapsed or refractory Hodgkin's disease before intensive therapy and autologous bone marrow transplantation. *J Clin Oncol* 1995;13:396-402.
 13. Martín A, Fernández-Jiménez MC, Caballero MD, et al. Long-term follow-up in patients treated with Mini-BEAM as salvage therapy for relapsed or refractory Hodgkin's disease. *Br J Haematol* 2001;113(1):161-171.
 14. Rodriguez MA, Cabanillas FC, Hagemester FB, et al. A phase II trial of mesna/ifosfamide, mitoxantrone and etoposide for refractory lymphomas. *Ann Oncol* 1995;6(6):609-611.

15. Younes A, Gopal AK, Smith SE, et al. Results of a pivotal phase II study of brentuximab vedotin for patients with relapsed or refractory Hodgkin's lymphoma. *J Clin Oncol* 2012;30:2183-2189.
16. Moskowitz AJ, Hamlin PA, Perales M-A, et al. Phase II study of bendamustine in relapsed and refractory Hodgkin lymphoma. *J Clin Oncol* 2013;31:456-460.
17. Johnston PB, Inwards DJ, Colgan JP, et al; A Phase II trial of the oral mTOR inhibitor everolimus in relapsed Hodgkin lymphoma. *Am J Hematol.* 2010;85(5):320-4.
18. Fehniger TA, Larson S, Trinkaus K, et al; A phase 2 multicenter study of lenalidomide in relapsed or refractory classical Hodgkin lymphoma. *Blood* 2011;118(19):5119-25.
19. Ansell SM, Lesokhin AM, Borrello I, et al. PD-1 Blockade with nivolumab in relapsed or refractory Hodgkin's lymphoma. *N Engl J Med* 2015;372:311-9.
20. Timmerman J, Armand P, Lesokhin AM, et al. Nivolumab in patients with relapsed or refractory lymphoid malignancies and classical Hodgkin lymphoma: Updated results of a phase 1 study (CA 209-039) [abstract]. *Hematol Oncol* 2015;33:Abstract 010.
21. Moskowitz CH, Ribrag V, Michot J-M, et al. PD-1 blockade with the monoclonal antibody pembrolizumab (MK-3475) in patients with classical Hodgkin lymphoma after brentuximab vedotin failure: preliminary results from a phase 1b study (KEYNOTE-013) [abstract]. *Blood* 2014;124:Abstract 290.
22. Santoro A, Mazza R, Pulsoni A, et al. Bendamustine in Combination With Gemcitabine and Vinorelbine Is an Effective Regimen As Induction Chemotherapy Before Autologous Stem-Cell Transplantation for Relapsed or Refractory Hodgkin Lymphoma: Final Results of a Multicenter Phase II Study. *J Clin Oncol* 2016;34:3293-3299.
23. O'Connor OA, Lue JK, et al. Brentuximab vedotin plus bendamustine in relapsed or refractory Hodgkin's lymphoma: an international, multicentre, single-arm, phase 1-2 trial. *Lancet Oncol* 2018; 19: 257-66.
24. Herrera AF, Moskowitz AJ, et al. Interim results of brentuximab vedotin in combination with nivolumab in patients with relapsed or refractory Hodgkin lymphoma. *Blood* (2018) 131 (11): 1183-1194.
25. Budde LE, Wu D, Martin DB, et al. Bendamustine with rituximab, etoposide and carboplatin (T(R)EC) in relapsed or refractory aggressive lymphoma: a prospective multicentre phase 1/2 clinical trial. *Br J Haematol* 2018;183:601-607.
26. Gutierrez A, Rodriguez J, Martinez-Serra J, et al. Gemcitabine and oxaliplatin: an effective regimen in patients with refractory and relapsing Hodgkin lymphoma. *Onco Targets Ther* 2014;7:2093-2100

Hodgkin's Lymphoma (Age > 60 years)

A(B)VD ± ISRT

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|------------------------|-------|-----|----|--------|
| Doxorubicin | 25 | 1, 15 | Q4W | # | 1-4, 7 |
| Bleomycin* | 10 unit/m ² | 1, 15 | Q4W | # | |
| Vinblastine | 6 | 1, 15 | Q4W | # | |
| Dacarbazine | 375 | 1, 15 | Q4W | # | |

* Bleomycin should be used with caution as it may not be tolerated in older adults.

A(B)VD (2 cycles) followed by AVD (4 cycles), if PET scan is negative after 2 cycles of ABVD.

If stage I-II unfavorable, consider a total of 4 cycles

CHOP ± ISRT

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Cyclophosphamide | 750 | 1 | Q3W | * | 5 |
| Doxorubicin | 50 | 1 | Q3W | * | |
| Vincristine | 1.4 | 1 | Q3W | * | |
| Prednisone | 40 | 1-5 | Q3W | * | |

* Stage I-II favorable disease: 4; Stage I-II favorable or III-IV: 6

PVAG (Prednisone, Vinblastine, Doxorubicin, Gemcitabine)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|-----|----|------|
| Prednisone | 40 | 1-5 | Q3W | 6 | 6 |
| Vinblastine | 6 | 1 | Q3W | 6 | |
| Doxorubicin | 50 | 1 | Q3W | 6 | |
| Gemcitabine | 1000 | 1 | Q3W | 6 | |

參考文獻

1. Engert A, Plutschow A, Eich HT, et al. Reduced treatment intensity in patients with early-stage Hodgkin's lymphoma. *N Engl J Med* 2010;363:640-652.
2. Stamatoullas A, Brice P, Bouabdallah R, et al. Outcome of patients older than 60 years with classical Hodgkin lymphoma treated with front line ABVD chemotherapy: frequent pulmonary events suggest limiting the use of bleomycin in the elderly. *Br J Haematol* 2015;170:179-184.
3. Behringer K, Goergen H, Hitz F, et al. Omission of dacarbazine or bleomycin, or both, from the ABVD regimen in treatment of early-stage favourable Hodgkin's lymphoma (GHSG HD13): an open-label, randomised, non-inferiority trial. *Lancet* 2015;385:1418-1427.
4. Johnson P, Federico M, Fossa A, et al. Response-adapted therapy based on interim FDG-PET scans in advanced Hodgkin lymphoma: first analysis of the safety of de-escalation and efficacy of escalation in the international RATHL study (CRUK/07/033) [abstract]. *Hematol Oncol* 2015;33 (Suppl S1):Abstract 008.
5. Kolstad A, Nome O, Delabie J, et al. Standard CHOP-21 as first line therapy for elderly patients with Hodgkin's lymphoma. *Leuk Lymphoma* 2007;48:570-576.
6. Boll B, Bredenfeld H, Gorgen H, et al. Phase 2 study of PVAG (prednisone, vinblastine, doxorubicin, gemcitabine) in elderly patients with early unfavorable or advanced stage Hodgkin lymphoma. *Blood* 2011;118:6292-6298.
7. Johnson P, Federico M, Fossa A, et al. Response-adapted therapy based on interim FDG-PET scans in advanced Hodgkin lymphoma: first analysis of the safety of de-escalation and efficacy of escalation in the international RATHL study (CRUK/07/033) [abstract]. *Hematol Oncol* 2015;33 (Suppl S1): Abstract 008.

Non-Hodgkin's Lymphoma

Diffuse Large B-Cell Lymphoma

First-line Therapy

RCHOP (Rituximab, Cyclophosphamide, Doxorubicin, Vincristine, Prednisone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Rituximab | 375 | 1 | Q3W | 6 | 1-3 |
| Cyclophosphamide | 750 | 1 | Q3W | 6 | |
| Doxorubicin | 50 | 1 | Q3W | 6 | |
| Vincristine | 1.4 | 1 | Q3W | 6 | |
| Prednisone | 100 mg | 1-5 | Q3W | 6 | |

Dose-dense RCHOP 14

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Rituximab | 375 | 1 | Q2W | 6 | 4 |
| Cyclophosphamide | 750 | 1 | Q2W | 6 | |
| Doxorubicin | 50 | 1 | Q2W | 6 | |
| Vincristine | 1.4 | 1 | Q2W | 6 | |
| Prednisone | 100 mg | 1-5 | Q2W | 6 | |

Dose-adjusted EPOCH + Rituximab**(Etoposide, Prednisone, Vincristine, Cyclophosphamide, Doxorubicin) + Rituximab**

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|-----|------|
| Rituximab | 375 | 1 | Q3W | 6-8 | 5, 6 |
| Etoposide | 50 | 1-4 | Q3W | 6-8 | |
| Doxorubicin | 10 | 1-4 | Q3W | 6-8 | |
| Vincristine | 0.4 | 1-4 | Q3W | 6-8 | |
| Cyclophosphamide | 750 | 5 | Q3W | 6-8 | |
| Prednisone | 60 | 1-5 | Q3W | 6-8 | |

First-line Therapy for Patients with Poor Left Ventricular Function**CDOP (Cyclophosphamide, Lipo-Doxorubicin, Vincristine, Prednisone) + Rituximab**

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|-----|------|
| Rituximab | 375 | 1 | Q3W | 6-8 | 7, 8 |
| Cyclophosphamide | 750 | 1 | Q3W | 6-8 | |
| Lipo-Doxorubicin | 30 | 1 | Q3W | 6-8 | |
| Vincristine | 1.4 | 1 | Q3W | 6-8 | |
| Prednisone | 60 | 1-5 | Q3W | 6-8 | |

RGCVP (Rituximab, Gemcitabine, Cyclophosphamide, Vincristine, Prednisone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Rituximab | 375 | 1 | Q3W | 6 | 10 |
| Cyclophosphamide | 750 | 1 | Q3W | 6 | |
| Gemcitabine | 750-1000 | 1,8 | Q3W | 6 | |
| Vincristine | 1.4 | 1 | Q3W | 6 | |
| Prednisone | 100 mg | 1-5 | Q3W | 6 | |

DA-EPOCH (Etoposide, Prednisone, Vincristine, Cyclophosphamide, Doxorubicin) + Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|-----|------|
| Rituximab | 375 | 1 | Q3W | 6-8 | 5, 6 |
| Etoposide | 50 | 1-4 | Q3W | 6-8 | |
| Doxorubicin | 10 | 1-4 | Q3W | 6-8 | |
| Vincristine | 0.4 | 1-4 | Q3W | 6-8 | |
| Cyclophosphamide | 750 | 5 | Q3W | 6-8 | |
| Prednisone | 60 | 1-5 | Q3W | 6-8 | |

RCEOP (Rituximab, Cyclophosphamide, Etoposide, Vincristine, Prednisone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|------|-----|----|------|
| Rituximab | 375 | 1 | Q3W | * | 9 |
| Cyclophosphamide | 750 | 1 | Q3W | * | |
| Etoposide | 50 | 1 | Q3W | * | |
| Etoposide | 100 PO | 2, 3 | Q3W | * | |
| Vincristine | 1.4 | 1 | Q3W | * | |
| Prednisone | 100 mg | 1-5 | Q3W | * | |

*limited stage: 3-4, advanced stage: 6

TREC (Rituximab, Bendamustine, Etoposide, Carboplatin)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|-----|-----|----|------|
| Rituximab | 375 | 1 | Q3W | 2 | 15 |
| Bendamustine | 90-120 | 1-2 | Q3W | 2 | |
| Etoposide | 100 | 1-3 | Q3W | 2 | |
| Carboplatin | AUC 5 | 1 | Q3W | 2 | |

Patients >80years of age with comorbidities**R-mini-CHOP**

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Rituximab | 375 | 1 | Q3W | 6 | 11 |
| Cyclophosphamide | 400 | 1 | Q3W | 6 | |
| Doxorubicin | 25 | 1 | Q3W | 6 | |
| Vincristine | 1 mg | 1 | Q3W | 6 | |
| Prednisone | 40 | 1-5 | Q3W | 6 | |

R-COP

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|-------|
| Rituximab | 375 | 1 | Q3W | | 24-25 |
| Cyclophosphamide | 750 | 1 | Q3W | | |
| Vincristine | 1.4 mg | 1 | Q3W | | |
| Prednisone | 100 | 1-5 | Q3W | | |

RGCVP (Rituximab, Gemcitabine, Cyclophosphamide, Vincristine, Prednisolone)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|------|-----|----|------|
| Rituximab | 375 | 1 | Q3W | 6 | 10 |
| Cyclophosphamide | 750 | 1 | Q3W | 6 | |
| Gemcitabine | 750 | 1, 8 | Q3W | 6 | |
| Vincristine | 1.4 | 1 | Q3W | 6 | |
| Prednisone | 100 mg | 1-5 | Q3W | 6 | |

CDOP (Cyclophosphamide, Lipo-Doxorubicin, Vincristine, Prednisone) + Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|-----|------|
| Rituximab | 375 | 1 | Q3W | 6-8 | 7, 8 |
| Cyclophosphamide | 750 | 1 | Q3W | 6-8 | |
| Lipo-Doxorubicin | 30 | 1 | Q3W | 6-8 | |
| Vincristine | 1.4 | 1 | Q3W | 6-8 | |
| Prednisone | 60 | 1-5 | Q3W | 6-8 | |

Concurrent presentation with CNS disease

Parenchymal

3 g/m² or more of systemic Methotrexate given on Day 15 of a 21-day RCHOP cycle that has been supported by growth factors.

Leptomeningeal

IT methotrexate/cytarabine, consider Ommaya reservoir placement and/or systemic methotrexate (3-3.5 g/m²)

Second-line Therapy and Subsequent Therapy (intention to proceed to high-dose therapy)

DHAP (Dexamethasone, Cisplatin, Cytarabine) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|-----|-------|----|------|
| Cisplatin | 100 | 1 | Q3-4W | | 12 |
| Cytarabine | 2000 Q12H | 2 | Q3-4W | | |
| Dexamethasone | 40 mg | 1-4 | Q3-4W | | |

DHAX (dexamethasone, cytarabine, oxaliplatin) ± rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|-----|-------|----|------|
| Oxaliplatin | 100 | 1 | Q3-4W | | 26 |
| Cytarabine | 2000 Q12H | 2 | Q3-4W | | |
| Dexamethasone | 40 mg | 1-4 | Q3-4W | | |

ESHAP (Etoposide, Methylprednisolone, Cytarabine, Cisplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------------|----------------------|-----|-------|----|------|
| ± Rituximab | 375 | 1 | Q3-4W | | 13 |
| Etoposide | 40 | 1-4 | Q3-4W | | |
| Methylprednisolone | 500 mg | 1-4 | Q3-4W | | |
| Cytarabine | 2000 | 5 | Q3-4W | | |
| Cisplatin | 25 | 1-4 | Q3-4W | | |

GDP (Gemcitabine, Dexamethasone, Cisplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 8 | Q3W | | 20 |
| Gemcitabine | 1000 | 1, 8 | Q3W | | |
| Dexamethasone | 40 mg | 1-4 | Q3W | | |
| Cisplatin | 75 | 1 | Q3W | | |

GDP (Gemcitabine, Dexamethasone, Cisplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 8 | Q3W | | 14 |
| Gemcitabine | 1000 | 1, 8 | Q3W | | |
| Dexamethasone | 40 mg | 1-4 | Q3W | | |
| Carboplatin | AUC 5 | 1 | Q3W | | |

GemOx (Gemcitabine, Oxaliplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|-------|----|--------|
| ± Rituximab | 375 | 1 | Q2-3W | | 15, 23 |
| Gemcitabine | 1000 | 2 | Q2-3W | | |
| Oxaliplatin | 100 | 2 | Q2-3W | | |

ICE (Ifosfamide, Carboplatin, Etoposide) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|-----|----|------|
| ± Rituximab | 375 | 1 | Q2W | | 12 |
| Etoposide | 100 | 1-3 | Q2W | | |
| Carboplatin | AUC 5 | 2 | Q2W | | |
| Ifosfamide | 5000 | 2 | Q2W | | |

MINE (Mesna, Ifosfamide, Mitoxatrone, Etoposide) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|-----|-------|----|------|
| ± Rituximab | 375 | 1 | Q3-4W | | 17 |
| Mesna | 1330 | 1-3 | Q3-4W | | |
| Ifosfamide | 1330 | 1-3 | Q3-4W | | |
| Mitoxantrone | 8 | 1 | Q3-4W | | |
| Etoposide | 65 | 1-3 | Q3-4W | | |

Second-line Therapy (non-candidates for high-dose therapy)

Bendamustine ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|-----|-----|----|------|
| ± Rituximab | 375 | 1 | Q3W | | 18 |
| Bendamustine | 120 | 1-2 | Q3W | | |

CEOP (Cyclophosphamide, Etoposide, Vincristine, Prednisone) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| ± Rituximab | 375 | 1 | Q3W | | 16 |
| Cyclophosphamide | 750 | 1 | Q3W | | |
| Etoposide | 50 | 1 | Q3W | | |
| Etoposide | 100 PO | 2-3 | Q3W | | |
| Vincristine | 1.4 | 1 | Q3W | | |
| Prednisone | 100 | 1-5 | Q3W | | |

DA-EPOCH (Etoposide, Prednisone, Vincristine, Cyclophosphamide, Doxorubicin) + Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|------------------|----------------------|-----|-----|----|------|
| Rituximab | 375 | 1 | Q3W | | 19 |
| Etoposide | 50 | 1-4 | Q3W | | |
| Doxorubicin | 10 | 1-4 | Q3W | | |
| Vincristine | 0.4 | 1-4 | Q3W | | |
| Cyclophosphamide | 750 | 5 | Q3W | | |
| Prednisone | 60 | 1-5 | Q3W | | |

GDP (Gemcitabine, Dexamethasone, Cisplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 8 | Q3W | | 20 |
| Gemcitabine | 1000 | 1, 8 | Q3W | | |
| Dexamethasone | 40 mg | 1-4 | Q3W | | |
| Cisplatin | 75 | 1 | Q3W | | |

GDP (Gemcitabine, Dexamethasone, Cisplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|---------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 8 | Q3W | | 14 |
| Gemcitabine | 1000 | 1, 8 | Q3W | | |
| Dexamethasone | 40 mg | 1-4 | Q3W | | |
| Carboplatin | AUC 5 | 1 | Q3W | | |

GemOx (Gemcitabine, Oxaliplatin) ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|-----|-----|----|------|
| ± Rituximab | 375 | 1 | Q2W | | 21 |
| Gemcitabine | 1000-1200 | 1 | Q2W | | |
| Oxaliplatin | 100-120 | 2 | Q2W | | |

Gemcitabine, Vinorelbine ± Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 1 | Q3W | 6 | 28 |
| Gemcitabine | 1000 | 1, 8 | Q3W | 6 | |
| Vinorelbine | 30 | 1, 8 | Q3W | 6 | |

Lenalidomide ± Rituximab (non-GCB DLBCL)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|------|-----|----|------|
| ± Rituximab | 375 | 1 | Q4W | | 27 |
| Lenalidomide | 20 | 1-21 | Q4W | | |

Rituximab

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-----------|----------------------|-----|----|----|------|
| Rituximab | 375 | 1 | QW | | 22 |

Bendamustine, Rituximab, Polatuzumab vedotin-piiq

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------------------|----------------------|------|-----|----|------|
| Polatuzumab vedotin-piiq | 1.8 mg/kg | 1 | Q3W | 6 | 30 |
| Bendamustine | 90 | 1, 2 | Q3W | 6 | |
| Rituximab | 375 | 1 | Q3W | 6 | |

Bendamustine vedotin for CD30+ disease

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|--------------|----------------------|-----|-----|----|------|
| Bendamustine | 1.8 mg/kg | 1 | Q3W | | 29 |

Ibrutinib (non GCB-DLBCL)

| 藥品名 | 劑量 mg/m ² | 給藥日 | 頻率 | 週期 | 參考文獻 |
|-----------|----------------------|-----|-----|----|------|
| Ibrutinib | 560 mg PO QD | 1 | Q3W | | 31 |

★三院有個別版本

參考文獻

1. Coiffier B, Thieblemont C, Van Den Neste E, et al. Long-term outcome of patients in the LNH-98.5 trial, the first randomized study comparing rituximab-CHOP to standard CHOP chemotherapy in DLBCL patients: a study by the Groupe d'Etudes des Lymphomes de l'Adulte. *Blood* 2010;116:2040-2045.
2. Feugier P, Van hoof A, Sebban C, et al. Long-term results of the R-CHOP study in the treatment of elderly patients with diffuse large B-cell lymphoma: a study by the Groupe d'Etude des Lymphomes de l'Adulte. *J Clin Oncol* 2005;23:4117-4126.
3. Pfreundschuh M, Trumper L, Osterborg A, et al. CHOP-like chemotherapy plus rituximab versus CHOP-like chemotherapy alone in young patients with good-prognosis diffuse large-B-cell lymphoma: a randomized controlled trial by the MabThera International Trial (MInT) Group. *Lancet Oncol* 2006; 7:379-391.
4. Pfreundschuh M, Schubert J, Ziepert M, et al. Six versus eight cycles of bi-weekly CHOP-14 with or without rituximab in elderly patients with aggressive CD20+ B-cell lymphomas: a randomized controlled trial (RICOVER-60). *Lancet Oncol* 2008;9:105-116.
5. Purroy N, Bergua J, Gallur L, et al. Long-term follow-up of dose-adjusted EPOCH plus rituximab (DA-EPOCH-R) in untreated patients with poor prognosis large B-cell lymphoma. A phase II study conducted by the Spanish PETHEMA Group. *Br J Haematol* 2015;169:188-198.
6. EPOCH-rituximab in untreated diffuse large B-cell lymphoma with analysis of outcome by molecular subtype. *Haematologica* 2012;97:758-765.
7. Martino R, Perea G, Caballero MD, et al. Cyclophosphamide, pegylated liposomal doxorubicin (Caelyx), vincristine and prednisone (CCOP) in elderly patients with diffuse large B-cell lymphoma: Results from a prospective phase II study. *Haematologica* 2002;87:822-827.

8. Zaja F, Tomadini V, Zaccaria A, et al. CHOP-rituximab with pegylated liposomal doxorubicin for the treatment of elderly patients with diffuse large B-cell lymphoma. *Leuk Lymphoma* 2006; 47:2174-2180.
9. Moccia A, Schaff K, Hoskins P, et al. R-CHOP with etoposide substituted for doxorubicin (R-CEOP): Excellent outcome in diffuse large B cell lymphoma for patients with a contraindication to anthracyclines [abstract]. *Blood* 2009;114:Abstract 408.
10. Fields PA, Townsend W, Webb A, et al. De novo treatment of diffuse large B-cell lymphoma with rituximab, cyclophosphamide, vincristine, gemcitabine, and prednisolone in patients with cardiac comorbidity: a United Kingdom National Cancer Research Institute trial. *J Clin Oncol* 2014;32:282-287.
11. Peyrade F, Jardin F, Thieblemont C, et al. Attenuated immunochemotherapy regimen (R-miniCHOP) in elderly patients older than 80 years with diffuse large B-cell lymphoma: a multicentre, single-arm, phase 2 trial. *Lancet Oncol* 2011;12:460-468.
12. Gisselbrecht C, Glass B, Mounier N, et al. Salvage regimens with autologous transplantation for relapsed large B-cell lymphoma in the rituximab era. *J Clin Oncol* 2010;28:4184-4190.
13. Martin A, Conde E, Arnan M, et al. R-ESHAP as salvage therapy for patients with relapsed or refractory diffuse large B-cell lymphoma: the influence of prior exposure to rituximab on outcome. A GEL/TAMO study. *Haematologica* 2008;93:1829-1836.
14. Gopal AK, Press OW, Shustov AR, et al. Efficacy and safety of gemcitabine, carboplatin, dexamethasone, and rituximab in patients with relapsed/refractory lymphoma: a prospective multicenter phase II study by the Puget Sound Oncology Consortium. *Leuk Lymphoma* 2010;51:1523-1529.
15. Lopez A, Gutierrez A, Palacios A, et al. GEMOX-R regimen is a highly effective salvage regimen in patients with refractory/relapsing diffuse large-cell lymphoma: a phase II study. *Eur J Haematol* 2008;80:127-132.
16. Gisselbrecht C, Glass B, Mounier N, et al. Salvage regimens with autologous transplantation for relapsed large B-cell lymphoma in the rituximab era. *J Clin Oncol* 2010;28:4184-4190.
17. Rodriguez MA, Cabanillas FC, Hagemester FB, et al. A phase II trial of mesna/ ifosfamide, mitoxantrone and etoposide for refractory lymphomas. *Ann Oncol* 1995;6(6):609-611.
18. Vacirca JL, Acs PI, Tabbara IA, et al. Bendamustine combined with rituximab for patients with relapsed or refractory diffuse large B cell lymphoma. *Ann Hematol* 2014;93:403 409.

19. Wilson WH, Jung SH, Porcu P, et al. A Cancer and Leukemia Group B multi-center study of DAEPOCH- rituximab in untreated diffuse large B-cell lymphoma with analysis of outcome by molecular subtype. *Haematologica* 2012;97:758-765.
20. Crump M, Baetz T, Couban S, et al. Gemcitabine, dexamethasone, and cisplatin in patients with recurrent or refractory aggressive histology B-cell non-Hodgkin lymphoma: a Phase II study by the National Cancer Institute of Canada Clinical Trials Group (NCIC-CTG). *Cancer* 2004;101:1835-1842.
21. Corazzelli G, Capobianco G, Arcamone M, et al. Long-term results of gemcitabine plus oxaliplatin with and without rituximab as salvage treatment for transplant-ineligible patients with refractory/relapsing B-cell lymphoma. *Cancer Chemother Pharmacol* 2009;64:907-916.
22. Maloney DG, Grillo= Lopez AJ, White CA, et al. IDEC-C2B8 (Rituximab) Anti-CD20 Monoclonal Antibody Therapy in Patients With Relapsed Low-Grade Non-Hodgkin's Lymphoma. *Blood* 1997;90(6):2188-2195.
23. El Gnaoui T, Dupuis J, Belhadj K, et al. Rituximab, gemcitabine and oxaliplatin: An effective salvage regimen for patients with relapsed or refractory B-cell lymphoma not candidates for high-dose therapy. *Ann Oncol* 2007;18:1363-1368.
24. Hiroaki A, Ipei S, Yasufumi M, et al. 3A Comparison between R-THP-COP and R-CHOP Regimens for the Treatment of Diffuse Large B-cell Lymphoma in Old Patients: A Single-institution Analysis. *Intern Med* August 21, 2017.
25. Laribi K, Denizon N, Bolle D, et al. R-CVP regimen is active in frail elderly patients aged 80 or over with diffuse large B cell lymphoma. *Ann Hematol.* 2016;95(10):1705–1714.
26. Julie Lignon, David Sibon,, et al. Rituximab, Dexamethasone, Cytarabine, and Oxaliplatin (R-DHAX) Is an Effective and Safe Salvage Regimen in Relapsed/Refractory B-Cell Non-Hodgkin Lymphoma. *Clinical Lymphoma, Myeloma & Leukemia*, Vol. 10, No. 4, 262-269, 2010.
27. Wang M, Fowler N, Wagner-Bartak N, et al. Oral lenalidomide with rituximab in relapsed or refractory diffuse large cell, follicular, and transformed lymphoma: a phase II clinical trial. *Leukemia.* 2013;27:1902-1909.
28. Papageorgiou ES, Tsirigotis P, Dimopoulos M, et al. Combination chemotherapy with gemcitabine and vinorelbine in the treatment of relapsed or refractory diffuse large B-cell lymphoma: a phase-II trial by the Hellenic Cooperative Oncology Group. *Eur J Hematol.* 2005;75:124-129.
29. Jacobsen ED, Sharman JP, Oki Y, et al. Brentuximab vedotin demonstrates objective responses in a phase 2 study of relapsed/refractory DLBCL with variable CD30 expression. *Blood* 2015;125:1394-1402.

30. Sehn LH, Herrera AF, Matasar MJ, et al. Polatuzumab vedotin (Pola) plus bendamustine (B) with rituximab (R) or obinutuzumab (G) in relapsed/refractory (R/R) Diffuse Large B-Cell Lymphoma (DLBCL): Updated results of a phase (Ph) Ib/II study [abstract]. Blood 2018;132: Abstract 1683.
31. Wilson WH, Young RM, Schmitz R, et al. Targeting B cell receptor signaling with ibrutinib in diffuse large B cell lymphoma. Nat Med 2015;21:922-926.

《淋巴瘤放射治療共識》

一、治療範圍

1. 淋巴腫瘤
2. 淋巴腫瘤侵犯高風險範圍

二、治療劑量 / 次數

1. 總劑量

▲何杰金氏淋巴瘤：

- (1) 非局部大型腫瘤：劑量：20-30 Gy, 次數：10-20 次, 單次劑量 1.5-2.0 Gy
- (2) 局部大型腫瘤：30-36Gy, 次數：15-24 次, 單次劑量 1.5-2.0 Gy
- (3) 化療後部分反應：36-45Gy, 次數：18-30 次 單次劑量 1.5-2.0 Gy

▲非何杰金氏淋巴瘤：

濾泡淋巴瘤

- (1) 劑量：24-30 Gy, 次數：10-20 次, 單次劑量 1.5-2.0 Gy

早期被套細胞淋巴瘤

- (1) 劑量：24-36 Gy, 次數：12-24 次, 單次劑量 1.5-2.0 Gy

邊緣區型淋巴瘤

- (1) 胃部：劑量：30 Gy, 次數：15-20 次, 單次劑量 1.5-2.0 Gy
- (2) 其他淋巴外處：劑量：24-30Gy, 次數：12-20 次, 單次劑量 1.5-2.0 Gy
- (3) Nodal MZL：劑量：24-36Gy, 次數：12-24 次, 單次劑量 1.5-2.0 Gy

瀰漫性大型 B 細胞淋巴瘤

- (1) 化療後完全反應：劑量：30-36 Gy, 次數：10-20 次
- (2) 化療後部分反應：劑量：40-50Gy, 次數：20-34 次
- (3) 對化療反應不佳或不適合化療：劑量：30-55Gy, 次數：15-37 次
- (4) 與 stem cell transplantation 合併：劑量：20-36Gy, 次數：10-24 次

NK/T 細胞淋巴瘤

- (1) 單獨使用 RT：劑量：50-55 Gy, 次數：25-31 次,
- (2) RT 合併其他治療：劑量：45-56Gy, 次數：22-32 次

周邊 T 細胞淋巴瘤

- (1) 化療後完全反應：劑量：30-36 Gy, 次數：15-20fx
- (2) 化療後部分反應：劑量：40-50Gy, 次數：20-34fx
- (3) 對化療反應不佳或不適合化療：劑量：40-55Gy, 次數：20-37fx
- (4) 與 HCT 合併：劑量：20-36Gy, 次數：10-24fx

PCMZL & PCFCL

- (1) 單獨使用 RT：劑量：24-30 Gy, 次數：12-17fx

MF & SS

- (1) Individual plaque and tumor lesions：劑量：8-12 Gy, 次數：1-6fx
- (2) Unilesional MF：劑量：40-50Gy, 次數：20-34fx
- (3) TSEBT：劑量：12-36Gy, 次數：2-9fx, general 4-6 Gy per week

Primary cutaneous ALCL

- (1) 治癒性劑量：劑量：24-36 Gy, 次數：12-24fx

三、治療方式：

使用強度調控放射治療技術，包含弧形及螺旋放射規畫，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. 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.
2. Emami B, et al: Tolerance of normal tissue to therapeutic irradiation. Int J Radiat Oncol Biol Phys 1991, 21:109-22.
3. Bentzen SM, Constine LS, Deasy JO, et al. Quantitative Analyses of Normal Tissue Effects in the Clinic (QUANTEC): an introduction to the scientific issues. International journal of radiation oncology, biology, physics 2010; 76(3 Suppl): S3-9.
4. NCCN clinical practice guidelines in oncology for Hodgkin lymphoma, version 2.2020, website: www.nccn.org
5. NCCN clinical practice guidelines in oncology for B-Cell lymphomas, version 4.2020, website: www.nccn.org
6. NCCN clinical practice guidelines in oncology for Primary Cutaneous Lymphomas, version 1.2020, website: www.nccn.org
7. NCCN clinical practice guidelines in oncology for T-Cell lymphomas, version 1.2021, website: www.nccn.org

