

《 淋巴癌抗癌藥物治療指引 》

Hodgkin Lymphoma (Age ≥ 18 years)

Classical Hodgkin 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 HS	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

6. 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 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, Al-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		

GVD + Pembrolizumab (Transplant eligible patients)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Pembrolizumab	200 mg	1	Q3W	2-4	28
Gemcitabine	1000	1, 8	Q3W		
Vinorelbine	20	1, 8	Q3W		
Lipo-Doxorubicin	15	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		

ICE + Brentuximab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Brentuximab	1.5 mg/kg*	1, 8	Q3W		29
Etoposide	100	1-3	Q3W		
Carboplatin	AUC 5	2	Q3W		
Ifosfamide	5000	2	Q3W		

*capped at 150 mg

ICE + Nivolumab (bridging most patients to AHCT)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Nivolumab	240 mg	1	Q2W	Up to 6	30
Etoposide	100	1-3	Q3W		
Carboplatin	AUC 5	2	Q3W		
Ifosfamide	5000	2	Q3W		

ICE + Pembrolizumab (eligible for an autologous stem cell transplant)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Pembrolizumab	200 mg	1	Q3W		34
Etoposide	100	1-3	Q3W		
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	1 st 2 nd ~4 th	24
Nivolumab	3 mg/kg	8	Q3W		
Nivolumab	3 mg/kg	1	Q3W		

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

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Pembrolizumab	200 mg	1	Q2W		31, 32

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Vinblastine	0.1 mg/kg	1	Q2W		33

Bendamustine + Carboplatin + Etoposide (CD20(+)) + Rituximab 375 mg/m²)

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		

* capped at 800 mg

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		

Rituximab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Rituximab	375	1	QW	4	35

R-Bendamustine

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Bendamustine	90	1, 2	Q3W		27
Rituximab	375	1			

*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.
27. Prusila REI, Haapasaari KM, Marin K, et al. R-Bendamustine in the treatment of nodular lymphocyte-predominant Hodgkin lymphoma. *Acta Oncol* 2018;57:1265-1267.
28. Moskowitz AJ, Shah G, Schöder H, et al. Phase II trial of pembrolizumab plus gemcitabine, vinorelbine, and liposomal doxorubicin as second-line therapy for relapsed or refractory classical Hodgkin lymphoma. *J Clin Oncol* 2021;39:3109-3117.
29. Lynch RC, Cassaday RD, Smith SD, et al. Dose-dense brentuximab vedotin plus ifosfamide, carboplatin, and etoposide for

- second-line treatment of relapsed or refractory classical Hodgkin lymphoma: a single centre, phase 1/2 study. *Lancet Haematol* 2021;8:e562-e571.
30. Mei MG, Lee HJ, Palmer J, et al. Response-adapted anti-PD1-based salvage therapy for Hodgkin lymphoma with nivolumab alone or in combination with ICE. *Blood* 2022;139:3605-3616.
 31. Kuruvilla J, Ramchandren R, Santoro A, et al. Pembrolizumab versus brentuximab vedotin in relapsed or refractory classical Hodgkin lymphoma (KEYNOTE-204): an interim analysis of a multicentre, randomised, open-label, phase 3 study. *Lancet Oncol.* 2021 Apr;22(4):512-524.
 32. Chen R, Zinzani PL, Fanale MA, et al. Phase II study of the efficacy and safety of pembrolizumab for relapsed/refractory classic Hodgkin lymphoma. *J Clin Oncol* 2017;35:2125-2132.
 33. Neoplastic disease. Treatment with vinblastine. A cooperative study. *Arch Intern Med* 1965;116:856-852.
 34. Bryan LJ, Casulo C, Allen PB, et al. Pembrolizumab added to ifosfamide, carboplatin, and etoposide chemotherapy for relapsed or refractory classic Hodgkin lymphoma: A multi-institutional phase 2 investigator-initiated nonrandomized clinical trial. *JAMA Oncol* 2023;9:683-691.
 35. Mature Results of a Phase II Study of Rituximab Therapy for Nodular Lymphocyte–Predominant Hodgkin Lymphoma. DOI: 10.1200/JCO.2013.53.2069 *Journal of Clinical Oncology* 32, no. 9 (March 20, 2014) 912-918.

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

Brentuximab vedotin followed by AVD, conditionally followed by brentuximab vedotin in responding patients with CR or PR

The first lead-in phase

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	2	8

The second phase

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Doxorubicin	25	1, 15	Q4W	6	8
Vinblastine	6	1, 15	Q4W	6	
Dacarbazine	375	1, 15	Q4W	6	

The third phase

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	4	8

#Stage I-II unfavorable or III-IV

Brentuximab vedotin + DTIC (dacarbazine) (for low EF patient)

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	12	9, 10
Dacarbazine	375	1	Q3W	12	
Followed by Brentuximab vedotin	1.8 mg/kg	1	Q3W	13-16 or more	

#Stage I-II unfavorable or III-IV

Relapsed or Refractory Disease

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Bendamustine	120	1, 2	Q4W		11

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	12	12

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		13, 14

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		15

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.
8. Evens AM, Advani RH, Helenowski IB, et al. Multicenter phase II study of sequential brentuximab vedotin and doxorubicin, vinblastine, and dacarbazine chemotherapy for older patients with untreated classical Hodgkin lymphoma. *J Clin Oncol* 2018;36:3015-3022.
9. Friedberg JW, Forero-Torres A, Bordoni RE, et al. Frontline brentuximab vedotin in combination with dacarbazine or bendamustine in patients aged ≥ 60 years with HL. *Blood* 2017;130:2829-2837
10. Friedberg JW, Forero-Torres A, Holkova B, et al. Long-term follow-up of brentuximab vedotin $\pm$ dacarbazine as first line therapy in elderly patients with Hodgkin lymphoma [abstract]. *J Clin Oncol* 2018;36 (Suppl 15): Abstract 7542.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.

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	

Pola-R-CHP (Polatuzumab vedotin-piiq, Rituximab, Cyclophosphamide, Doxorubicin, Prednisone)

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Polatuzumab	1.8 mg/kg	1	Q3W	8	33
Rituximab	375	1	Q3W	6	
Cyclophosphamide	750	1	Q3W	6	
Doxorubicin	50	1	Q3W	6	
Prednisone	100 mg	1-5	Q3W	6	

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		23, 24
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
± Rituximab	375	1	Q3-4W		12
Cisplatin	100	1	Q3-4W		
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
± Rituximab	375	1	Q3W		25
Oxaliplatin	100	1	Q3W		
Cytarabine	2000 Q12H	2	Q3W		
Dexamethasone	40 mg	1-4	Q3W		

DHAX (dexamethasone, cytarabine, Carboplatin) ± rituximab

藥品名*	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
± Rituximab	375	1	Q3W		32
Carboplatin	AUC5	1	Q3W		
Cytarabine	2000 Q12H	2	Q3W		
Dexamethasone	40 mg	1-4	Q3W		

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		19
Gemcitabine	1000	1, 8	Q3W		
Dexamethasone	40 mg	1-4	Q3W		
Cisplatin	75	1	Q3W		

GDP (Gemcitabine, Dexamethasone, Carboplatin) ± 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, 22
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)

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		18
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		19
Gemcitabine	1000	1, 8	Q3W		
Dexamethasone	40 mg	1-4	Q3W		
Cisplatin	75	1	Q3W		

GDP (Gemcitabine, Dexamethasone, Carboplatin) ± 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		20
Gemcitabine	1000-1200	1	Q2W		
Oxaliplatin	100-120	2	Q2W		

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		26
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		21

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	28
Bendamustine	90	1, 2	Q3W	6	
Rituximab	375	1	Q3W	6	

Brentuximab for CD30+ disease

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
Brentuximab	1.8 mg/kg	1	Q3W		27

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		29

Anti-CD19 CAR T-cell therapy (only after ≥ 2 prior chemoimmunotherapy regimens)

Tisagenlecleucel *

Second-line Therapy (relapsed disease <12 mo or primary refractory disease)

DHAP (Dexamethasone, Cisplatin, Cytarabine) ± 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		12
Cisplatin	100	1	Q3-4W		
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
± Rituximab	375	1	Q3W		25
Oxaliplatin	100	1	Q3W		
Cytarabine	2000 Q12H	2	Q3W		
Dexamethasone	40 mg	1-4	Q3W		

DHAX (dexamethasone, cytarabine, Carboplatin) ± rituximab

藥品名	劑量 mg/m ²	給藥日	頻率	週期	參考文獻
± Rituximab	375	1	Q3W		32
Carboplatin	AUC5	1	Q3W		
Cytarabine	2000 Q12H	2	Q3W		
Dexamethasone	40 mg	1-4	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		19
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		15, 23
Gemcitabine	1000-1200	1	Q2W		
Oxaliplatin	100-120	2	Q2W		

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		

Bendamustine, Polatuzumab vedotin-piiq, ± Rituximab

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	28, 34
Bendamustine	90	1, 2	Q3W	6	
± Rituximab	375	1	Q3W	6	

★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. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. Hiroaki A, Ippai 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.
24. 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.

25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. Neste, Andre Goy, Brian T. Hill, Catherine Thieblemont, et al. Single Agent Oral Selinexor Demonstrates Deep and Durable Responses in Relapsed/Refractory Diffuse Large B-Cell Lymphoma (DLBCL) in Both GCB and Non-GCB Subtypes: The Phase 2b Sadal Study. *Blood* 2018; 132 (Supplement 1): Abstract 1677
31. Salles G, et al. Tafasitamab plus lenalidomide in relapsed or refractory diffuse large B-cell lymphoma (L-MIND): a multicentre, prospective, single-arm, phase 2 study. *Lancet Oncol* 2020. Published online June 5, 2020.
32. Tessoulin, B., Thomare, P., Delande, E. et al. Carboplatin instead of cisplatin in combination with dexamethasone, high-dose cytarabine with or without rituximab (DHAC+/-R) is an effective treatment with low toxicity in Hodgkin's and non-Hodgkin's lymphomas. *Ann Hematol* 96, 943–950 (2017). <https://doi.org/10.1007/s00277-017-2981-2>.
33. Tilly H, Morschhauser F, Sehn L, et al. Polatuzumab vedotin in previously untreated diffuse large B-cell therapy. *N Eng J Med* 2022;386:351-363.
34. Sehn LH, Herrera AF, Flowers CR, et al. Polatuzumab vedotin in relapsed or refractory diffuse large B-cell lymphoma. *J Clin Oncol* 2020;38:155-165.