

[Regimen Name Drug Regimen](#) | [Cycle Frequency](#) | [Premedication & Supportive Measures](#) | [Dose Modifications](#) | [Adverse Effects](#) | [Interactions](#) | [Drug Administration & Special Precautions](#) | [Clinical Monitoring](#) | [Administrative Information](#) | [Key References](#) | [Other Notes](#)

A		
REGIMEN NAME	ETOPOSIDE-METHYLPREDNISOLONE-CYTARABINE (High Dose) - CISPLATIN (ESHAP) Chemotherapy	
Cancer	Non-Hodgkin's Lymphoma (Salvage Therapy- Advanced Stage)	Palliative Intent
Regimen Category	Core: Standard therapy endorsed by the Disease Site Group and a regimen widely used by most integrated cancer programs in this disease site.	
Indication and Rationale	Salvage therapy for aggressive histology lymphoma	

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B			
DRUG REGIMEN			
<u>ETOPOSIDE</u> (Round to nearest 10mg)	40-60mg/m ²	IV	Days 1 to 4
METHYLPREDNISOLONE	500mg	IV	Days 1 to 5
<u>CISPLATIN</u> (Round to nearest 1mg)	25mg/m ² /d	CIV	Continuous infusion for 4 days Starting Day 1
<u>CYTARABINE</u>	2g/m ²	IV over 2 hours	Day 5 only

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C	
CYCLE FREQUENCY	
REPEAT EVERY 28 DAYS	

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D	
PREMEDICATION AND SUPPORTIVE MEASURES	
ANTIEMETIC REGIMEN: <u>MODERATE</u>	<ul style="list-style-type: none"> • <i>Ensure good urinary output during chemotherapy visit</i> • <i>Oral hydration is strongly encouraged; poorly hydrated patients may need more IV hydration</i>

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E**DOSE MODIFICATIONS**

Doses should be modified according to the protocol by which the patient is being treated. The following recommendations are in use at some centres.

Hematologic Toxicities

See [Appendix 6](#) for general recommendations.

Renal FailureCreatinine Clearance

0.5-1.0mL/sec

% usual dose
REDUCE Cisplatin* to **50%** dose

0.2-0.8mL/sec

REDUCE Etoposide to **75%** dose

< 0.5mL/min

OMIT Cisplatin dose

< 0.2mL/sec

REDUCE Etoposide to **50%** dose

* Upon the discretion of the prescriber, less dose reduction may be suggested. See section E of [CISPLATIN](#) drug monograph. (Dosage reduction)

Hepatic DysfunctionBilirubin ($\mu\text{mol/L}$)

1-2 x ULN

% usual dose
REDUCE Etoposide to **50%** dose

2-4 x ULN

REDUCE Etoposide to **25%** dose

> 4 x ULN

OMIT Etoposide dose

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F**ADVERSE EFFECTS**

Refer to the Etoposide, Methylprednisolone, Cisplatin and Cytarabine monographs for full details of adverse effects.

Most frequently occurring adverse effects

- Myelosuppression
- Hyperuricemia
- Stomatitis
- Nausea and vomiting
- Hyperglycemia
- Alopecia
- Insomnia
- Hypotension
- Cerebral dysfunction
- Acute encephalopathy (including seizures)
- Pulmonary toxicity
- Pigmentation disorder
- Conjunctivitis
- Hepatotoxicity
- Neurotoxicity (Ototoxicity)
- Fatigue

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G**INTERACTIONS**

Refer to the Etoposide, Methylprednisolone, Cisplatin and Cytarabine monographs for full details.

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H**DRUG ADMINISTRATION AND SPECIAL PRECAUTIONS**

Refer to the Etoposide, Methylprednisolone, Cisplatin and Cytarabine monographs for full details.

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I	CLINICAL MONITORING
<ul style="list-style-type: none"> • Clinical toxicity assessment (including gastrointestinal, stomatitis, neurotoxicity, ototoxicity, CNS toxicity, conjunctivitis, and pulmonary toxicity). • Routine blood glucose test. • CBC before each cycle. Interim counts should be done in first cycle and repeated if dose modification necessary. • Baseline and regular liver & function tests (including magnesium and electrolytes) and urinalysis. • Baseline blood pressure at each treatment; monitor for hypotension. 	

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J	ADMINISTRATION INFORMATION												
<p><u>Complexity Value*</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Regimen</td> <td style="width: 10%; text-align: center;">232</td> <td style="width: 10%; text-align: center;">Per cycle</td> <td style="width: 20%;"></td> </tr> <tr> <td>Pharmacy</td> <td style="text-align: center;">64</td> <td style="text-align: center;">Per cycle</td> <td></td> </tr> <tr> <td>Chemo Nursing</td> <td style="text-align: center;">168</td> <td style="text-align: center;">Per cycle</td> <td></td> </tr> </table> <p>* Complexity value is the fixed time spent in minutes by nursing and pharmacy with respect to administration for each treatment cycle.</p>		Regimen	232	Per cycle		Pharmacy	64	Per cycle		Chemo Nursing	168	Per cycle	
Regimen	232	Per cycle											
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K	KEY REFERENCE(S)
<p>Cabanillas F, Rodriguez MA, Swan F. Recent trends in the management of lymphomas at M. D. Anderson Cancer Centre. Semin Oncol, 1990; 17: 28-33</p> <p>Velasquez WS, McLaughlin P, Tucker S et al. ESHAP – an effective chemotherapy regimen in refractory and relapsing lymphoma: a 4-year follow-up study. Journal of Clinical Oncology 12(6): 1169 ; 1994.</p>	

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March 2010: Modified section D