

## BEP 3 day (adjuvant)

### INDICATION (ICD10) C62

1. Adjuvant treatment for non-metastatic non-seminomatous germ cell tumour (stage 1 only) in patients with vascular or lymphatic invasion (risk of relapse up to 40% without treatment). Consider for patients who are unable to attend for intensive outpatient surveillance. PS 0, 1, 2

### REGIMEN

- Day 1 Prehydration  
 CISPLATIN 50mg/m<sup>2</sup> in 1000ml sodium chloride 0.9% IV infusion over 2 hours  
 ETOPOSIDE 120mg/m<sup>2</sup> in 1000ml\* sodium chloride 0.9% IV infusion over 60 minutes  
 Post hydration
- Day 2 Prehydration  
 CISPLATIN 50mg/m<sup>2</sup> in 1000ml sodium chloride 0.9% IV infusion over 2 hours  
 ETOPOSIDE 120mg/m<sup>2</sup> in 1000ml\* sodium chloride 0.9% IV infusion over 60 minutes  
 Hydrocortisone 100mg IM  
 BLEOMYCIN 30000units in 3ml lidocaine 1% IM Post hydration
- Day 3 ETOPOSIDE 120mg/m<sup>2</sup> in 1000ml\* sodium chloride 0.9% IV infusion over 60 minutes
- Day 8 Hydrocortisone 100mg IM  
 BLEOMYCIN 30000units in 3ml lidocaine 1% IM (consider switching to 50-100ml sodium chloride 0.9% IV infusion over 30 minutes for patients with platelets <50)
- Day 15 Hydrocortisone 100mg IM  
 BLEOMYCIN 30000units in 3ml lidocaine 1% IM (consider switching to 50-100ml sodium chloride 0.9% IV infusion over 30 minutes for patients with platelets <50)
- \*etoposide doses 48mg to 88mg in 250ml, doses 96mg to 180mg in 500ml sodium chloride 0.9%

### CYCLE FREQUENCY AND NUMBER OF CYCLES

Every 21 days for 2 cycles

### ANTI-EMETICS

High emetic risk days 1 and 2

Low emetic risk day 3

Minimal emetic risk days 9 and 16

### CONCURRENT MEDICATION REQUIRED

Bleomycin	Ensure hydrocortisone administered before bleomycin IM
Cisplatin	Ensure adequate pre and post hydration. If urine output is <100 ml/hour or if patient gains >2kg in weight during IV administration post cisplatin give 20-40mg furosemide PO/IV.
GCSF	Consider GCSF

### EXTRAVASATION AND TYPE OF LINE / FILTERS

Bleomycin – neutral

Cisplatin – exfoliant

Etoposide - irritant

Peripheral line

## INVESTIGATIONS

Blood results required before SACT administration  
 FBC, U&E and LFTs every cycle, FBC days 8 and 15  
 Neutrophils x 10<sup>9</sup>/L ≥1.0  
 Platelets x 10<sup>9</sup>/L ≥75  
 Ideally EDTA GFR should be used  
 Creatinine clearance (GFR) calculated, at the Consultants discretion  
 Serum creatinine - each cycle  
 Pulmonary function tests (including transfer factor) before cycle 1  
 Baseline weight and every cycle

## MAIN TOXICITIES AND ADVERSE REACTIONS

Bleomycin	If breathlessness or infiltrates appear not attributable to tumour or co-existence of lung disease bleomycin must be stopped immediately. Consider treatment with corticosteroids and a broad spectrum antibiotic and / referral to chest team. Investigation of choice high resolution CT chest.
Cisplatin	Nephrotoxicity – ensure adequate pre and post hydration is prescribed. Ototoxicity – assess patient for tinnitus or hearing abnormalities.

## INTERACTIONS WHICH MAY REQUIRE DOSE MODIFICATIONS (not exhaustive list check SPC/BNF/Stockleys)

Bleomycin	Cisplatin increases the risk of pulmonary toxicity.
Cisplatin	Aminoglycosides increased risk of nephrotoxicity and ototoxicity. Renal function should be well monitored and audiometric tests as required. Carboplatin can cause a decrease in phenytoin serum levels. This may lead to reappearance of seizures and may require an increase of phenytoin dosages.

## DOSE MODIFICATIONS

Bleomycin maximum lifetime dose =400000units in patients under 60 years

### Haematological

Platelets <50x10<sup>9</sup>/L consider switching IM bleomycin to 50-100ml sodium chloride 0.9% IV infusion

### Non-haematological

If patient complains of tinnitus, tingling of fingers and/or toes, discuss with SpR or Consultant before administration.

### Hepatic impairment

Etoposide

Bilirubin ≥50micromol/L or decreased albumin	give 50% dose
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### Renal impairment

Bleomycin

CrCl >50ml/min	give 100% dose
CrCl 10-50ml/min	give 75% dose
CrCl <10ml/min	give 50% dose

### Cisplatin

CrCl >60ml/min	give 100% dose
CrCl 45-60ml/min	give 75% dose
CrCl <45ml/min	not recommended

### Etoposide

CrCl >50ml/min	give 100% dose
CrCl 15-50ml/min	give 75% dose
CrCl <15ml/min	further dose reduction

### REFERENCES