BEP 3 day (metastatic)

INDICATION (ICD10) C62

1. Good prognosis metastatic non-seminomatous germ cell tumour. PS 0, 1, 2

REGIMEN

Day 1	Prehydration			
	CISPLATIN	50mg/m^2	IV infusion	#ml sodium chloride 0.9% over 2 hours
	ETOPOSIDE	167mg/m^2	IV infusion	#ml sodium chloride 0.9% over 60 minutes
	Post hydration			
Day 2	Prehydration			
	CISPLATIN	50mg/m^2	IV infusion	#ml sodium chloride 0.9% over 2 hours
	ETOPOSIDE	167mg/m^2	IV infusion	#ml sodium chloride 0.9% over 60 minutes
	Hydrocortisone	100mg	IM	
	BLEOMYCIN	30000units	IM	in 3ml lidocaine 1%
	Post hydration			
Day 3	**ETOPOSIDE**	167mg/m^2	IV infusion	#ml sodium chloride 0.9% over 60 minutes
Day 9	Hydrocortisone	100mg	IM	
	BLEOMYCIN	30000units	IM*	in 3ml lidocaine 1%
Day 16	Hydrocortisone	100mg	IM	
	BLEOMYCIN	30000units	IM*	in 3ml lidocaine 1%

*consider switching to 50-100ml sodium chloride 0.9% IV infusion over 30 minutes for patients with platelets <50

diluent and diluent volume for dose prescribed as per national standardised product specification

CYCLE FREQUENCY AND NUMBER OF CYCLES

Every 21 days for 3 cycles only

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
Cisplatin	Ensure adequate pre and post hydration. If urine output is <100ml/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 including Mg^{++} (>0.4) and LFTs Neutrophils $x10^9$/L ≥1.0 (days 9 and 16 >0.8 for gynae patients Platelets $x10^9$/L ≥100 (days 9 and 16 >75 for gynae patients)	baseline and every cycle FBC days 9 and 16
Ideally EDTA GFR or calculated CrCl at consultant's discretion.	baseline and every cycle
Serum creatinine	baseline and every cycle
Pulmonary function tests (including transfer factor)	before cycle 1 (if over 35 and a smoker gynae patients)
Virology	before cycle 1 if not previously checked
Weight	baseline and every cycle

MAIN TOXICITES 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. Cisplatin 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 <$50x10^9$/L consider switching IM bleomycin to 100ml sodium chloride 0.9% IV infusion over 30 minutes

Non-haematological

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

Hepatic impairment

Bleomycin
No need for dose adjustment is expected

Cisplatin
No need for dose adjustment is expected

Etoposide

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

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 50-59ml/min	give 75% dose
CrCl 40-49ml/min	give 50% dose (curative intent) not recommended (palliative intent)
CrCl <40ml/min	not recommended

Etoposide

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

REFERENCES

ASSESSSMENTS

	Pre	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Ongoing
Clinical assessment	X		Pre cycle		Pre cycle	Pre-C2, then every 6 weeks (every 2 cycles), or team discretion
SACT assessment (PS and toxicities)	X	X	X	X	X	Every cycle
FBC	X	X	X	X	X	Every SACT
U&E, calcium, & LFT	X	X	X	X	X	Every cycle
CrCl	X	X	X	X	X	Every cycle
Pulmonary function tests	X					
CT scan	X					At clinician's discretion, Inform consultant team if not booked
Informed consent	X					Verbal each cycle
Height	X					
Weight recorded	X	X	X	X	X	Every cycle