

5 day BEP (Bleomycin, etoposide, cisplatin)

Indication

Germ cell tumours with intermediate/poor prognosis

Regimen details

Day	Drug	Fluid	Time
1	Etoposide 100mg/m ²	1 litre sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
	Cisplatin 20mg/m ²	500ml sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
2	Hydrocortisone 200mg	IV bolus	
	Bleomycin 30,000 units	250ml sodium chloride 0.9%	30 min
	Etoposide 100mg/m ²	1 litre sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
	Cisplatin 20mg/m ²	500ml sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
3	Etoposide 100mg/m ²	1 litre sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
	Cisplatin 20mg/m ²	500ml sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
4	Etoposide 100mg/m ²	1 litre sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
	Cisplatin 20mg/m ²	500ml sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
5	Etoposide 100mg/m ²	1 litre sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
	Cisplatin 20mg/m ²	500ml sodium chloride 0.9%	1 hour
	Potassium chloride 20mmol and magnesium sulphate 10mmol	1 litre sodium chloride 0.9%	2 hours
8	Hydrocortisone 200mg	IV bolus	
	Bleomycin 30,000 units	250ml sodium chloride 0.9%	30 min
15	Hydrocortisone 200mg	IV bolus	
	Bleomycin 30,000 units	250ml sodium chloride 0.9%	30 min

Cycle frequency

Every 21 days

Number of cycles

4 cycles (Omit bleomycin days 8 & 15 on cycle 4)

Administration

DAY 1-5 to be given as Inpatients
Strict fluid balance
Consider Frusemide 20-40mg po/iv if >1000ml positive balance

Do not wait for results of FBC prior to giving day 8, 15 treatments unless patient looks unwell or is pyrexial

Pre-medication

Give 200mg hydrocortisone before bleomycin

Emetogenicity

Highly emetogenic

Additional supportive medication

If bulky disease give allopurinol 300mg OD during 1st cycle of chemotherapy and monitor for tumour lysis syndrome

If patients required admission for treatment of febrile neutropenia, they should be prescribed filgrastim starting 24-48 hours after completion of inpatient chemotherapy

Investigations – pre first cycle

Calculated creatinine clearance
CT thorax/abdo/pelvis
Pulmonary function tests (Spirometry, Diffusion capacity)
Audiometry
Sperm banking
FBC, U&E, LFT incl. LDH, Uric Acid, Mg, Ca, AFP, βHCG

Investigations –pre subsequent cycles

Weekly:
FBC, U&E, LFT incl LDH, Uric Acid, Mg, Ca, AFP, βHCG

Day 1 only:
Chest X-ray (if metastases present)
Repeat GFR only if calculated clearance <60 ml/min (Cockcroft formula)

Do not wait for results of FBC prior to giving day 8, 15 treatments unless patient looks unwell or is pyrexial

Standard limits for administration to go ahead

ANY DEFERRAL NEEDS TO BE DISCUSSED WITH CONSULTANT AS TREATMENT DELAYS HAVE NEGATIVE EFFECT ON OUTCOME

Do not wait for results of FBC prior to giving day 8, 15 treatments unless patient looks unwell or is pyrexial

Investigation	Limit
Neutrophil count	$\geq 0.5 \times 10^9/L$
Platelet count	$\geq 50 \times 10^9/L$
HB	Any (transfuse if <90g/l)
Creatinine clearance	$\geq 50 \text{ mL/min}$
Bilirubin	$\leq 1.5 \times \text{ULN}$
AST	$< 1.5 \times \text{ULN}$

Dose modifications

GFR < 50ml/min or Neurotoxicity > grade 2 - replace Cisplatin with Carboplatin AUC 6

Bleomycin rash/lung toxicity - omit Bleomycin

Patients over 40 years of age who are heavy smokers (or have been until recently) consider omitting Bleomycin from chemotherapy

Adverse effects - for full details consult product literature/ reference texts

Nausea/vomiting

Alopecia

Infertility (some reversibility within 2 years of treatment)

Mucositis

Cough/SOB (watch out for Bleomycin pneumonitis!)

Skin rash

Peripheral neuropathy

Ototoxicity (tinnitus/deafness)

Renal toxicity, electrolyte disturbance (especially Magnesium loss)

Myelosuppression

THIS PROTOCOL HAS BEEN DIRECTED BY DR BIRTLE, DESIGNATED LEAD CLINICIAN FOR GERM CELL TUMOURS

RESPONSIBILITY FOR THIS PROTOCOL LIES WITH THE HEAD OF SERVICE

Date: June 2020

Review: June 2022

VERSION: 10