Carboplatin & gemcitabine (Nasopharyngeal carcinoma)

Indication

Recurrent or metastatic nasopharyngeal carcinoma in patients unsuitable for cisplatin
Neoadjuvant or adjuvant treatment of nasopharyngeal carcinoma in patients unsuitable for cisplatin

Regimen details

DRUG	DOSE	DILUENT	ROUTE	FREQUENCY
Gemcitabine	1000mg/m^2	variable	Intravenous infusion over 30 min	Day 1 and 8
Carboplatin	AUC5	250-500ml 5% dextrose	Intravenous infusion over 30-60 min	Day 1

Cycle frequency

Every 3 weeks

Number of cycles

-Neoadjuvant or Adjuvant 3 cycles
-Recurrent or metastatic nasopharyngeal cancer upto 6 cycles

Administration

Gemcitabine is administered first over 30 minutes; volume will vary depending on product used. Longer infusion times may lead to increased toxicity

Carboplatin is given in 250ml-500ml 5% glucose over 30-60 minutes. Patients must be monitored for infusion reactions

Pre-medication

None given routinely

Emetogenicity – consult anti-emetic policy for full details

Day 1 - Moderate Risk (Category B)
Day 8 - Low Risk (Category C)

Additional supportive medication

None given routinely

Extravasation

Carboplatin	Irritant: Group 3
Gemcitabine	Neutral: Group 1

Investigations – pre first cycle

Investigation	**Validity period**
FBC	14 days
U+E (including creatinine)	14 days
LFT (including AST)	14 days
Calcium	14 days
Magnesium	14 days

Investigations –pre subsequent cycles

FBC, U+E (including creatinine), LFT (including AST), calcium, magnesium

Standard limits for administration to go ahead

If blood results not within range, authorisation to administer **must** be given by prescriber/ consultant.

Investigation	Limit
Neutrophil count	≥ 1.5 x 10^9/L (but see "Dose modifications" below)
Platelet count	≥ 100 x 10^9/L (but see "Dose modifications" below)
Creatinine clearance	≥ 30 mL/min (recalculate carboplatin dose if serum creatinine changes by >20%)
Bilirubin	≤ 1.5 x ULN
AST	< 1.5 x ULN (see under "Dose modifications" below)

Dose modifications

Dose modification for haematological toxicity

• Neutrophils > 1.5 AND Platelets >100	Proceed with full dose
• Neutrophils 1.0-1.5	Discuss with consultant
• Neutrophils < 1.0 OR Platelets < 100	Defer 1 week

Dose modification for neurological toxicity

• CTCAE grade 0-1	Proceed with full dose
• CTCAE grade 2	Defer until recovery, then consider carboplatin dose reduction
• CTCAE grade 3+	Discontinue carboplatin. Consider discontinuing carboplatin

Hepatic impairment

Use gemcitabine in caution in hepatic impairment.
Raised transaminases do not seem to cause dose limiting toxicity
If bilirubin > 1.5 x ULN, initiate gemcitabine at dose of 800 mg/m^2

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

- **Serious side effects**

Myelosuppression
Infertility
Interstitial pneumonitis, ARDS
Cardiotoxicity
Hepatotoxicity
Haemolytic uraemic syndrome
Ocular toxicity
Ototoxicity
Nephrotoxicity
Peripheral neuropathy

- **Frequently occurring side effects**

Myelosuppression
Nausea and vomiting
Mucositis, stomatitis
Diarrhoea, constipation
Oedema
Haematuria

- **Other side effects**

Raised transaminases

Alopecia
Fatigue

Significant drug interactions – for full details consult product literature/ reference texts

Warfarin/coumarin anticoagulants: increased or fluctuating anticoagulant effects. Avoid if possible, consider switching patient to a low molecular weight heparin during treatment or if the patient continues taking an oral anticoagulant monitor the INR at least once a week and adjust dose accordingly.

Cisplatin only:
Aminoglycoside antibiotics: increased risk of nephrotoxicity and ototoxicity when given within 2 weeks of carboplatin.
Diuretics: increased risk of nephrotoxicity and ototoxicity
Nephrotoxic drugs: increased nephrotoxicity; not recommended
Ototoxic drugs: increased risk of ototoxicity
Phenytoin: carboplatin reduces absorption and efficacy of phenytoin, monitor levels and adjust dose as necessary.

Additional comments

Nil

References

1. SWCN protocol - https://www.swagcanceralliance.nhs.uk/wp-content/uploads/2020/09/Cisplatin-Gemcitabine-NSCLC.pdf
2. Clatterbridge Cancer Centre Systemic Anti0Cancer Treatment Protocol Procedure Ref MPHACISGEM v1.2 https://www.clatterbridgecc.nhs.uk/application/files/3816/1659/7417/Cisplatin__Gemcitabine_Head_and_Neck_Cancer_Protocol_V1.2.pdf
3. https://www.nejm.org/doi/10.1056/NEJMoa1905287?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed