

Carboplatin & gemcitabine (Nasopharyngeal carcinoma)

Indication

Recurrent or metastatic 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

3 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

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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	$\geq 1.5 \times 10^9/\text{L}$ (but see "Dose modifications" below)
Platelet count	$\geq 100 \times 10^9/\text{L}$ (but see "Dose modifications" below)
Creatinine clearance	$\geq 30 \text{ mL/min}$ (recalculate carboplatin dose if serum creatinine changes by $>20\%$)
Bilirubin	$\leq 1.5 \times \text{ULN}$
AST	$< 1.5 \times \text{ULN}$ (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 $> 1.5 \times \text{ULN}$, 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

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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 AntiOncology 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%20pubmed

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