Cisplatin & gemcitabine (NSCLC regimen)

Indication

Advanced (stage IIIB/IV) non-small cell lung cancer

Regimen details

Gemcitabine	1250mg/m^2	Over 30 min IV in 250ml 0.9% sodium chloride	Day 1 and 8
		20mmol potassium chloride and 10mmol magnesium sulphate in 1litre sodium chloride 0.9% over 2 hours	Day 1
Cisplatin	80mg/m^2	1 litre 0.9% sodium chloride over 2 hours	Day 1
		20mmol potassium chloride and 10mmol magnesium sulphate in 1litre sodium chloride 0.9% over 2 hours	Day 1

Cycle frequency

Every 3 weeks

Number of cycles

4 cycles

Administration

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

Cisplatin is administered over 2 hours

Pre-medication

None given routinely

Emetogenicity

Day 1: High
Day 8: Low

Additional supportive medication

None given routinely

Extravasation

Cisplatin – exfoliant
Gemcitabine – neutral

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	≥ 50 mL/min (≥ 60ml/min prior to cycle 1)
Bilirubin	≤ 1.5 x ULN
AST	< 1.5 x ULN

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 replace Cisplatin with Carboplatin AUC5
• CTCAE grade 3+	Change to less neurotoxic regime if appropriate

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

Gemcitabine should be discontinued at the first sign of microangiopathic haemolytic anaemia (such as rapidly falling haemoglobin with concomitant thrombocytopenia, elevated bilirubin, creatinine, blood urea nitrogen or LDH).

Renal failure may not be reversible with discontinuation of therapy, dialysis may be required

- **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 cisplatin.
Diuretics: increased risk of nephrotoxicity and ototoxicity
Nephrotoxic drugs: increased nephrotoxicity ; not recommended
Ototoxic drugs: increased risk of ototoxicity
Phenytoin: cisplatin reduces absorption and efficacy of phenytoin, monitor levels and adjust dose as necessary.
Anti-gout agents: cisplatin may increase plasma concentration of uric acid therefore dose adjustments may be required to control hyperuricaemia and gout.

Additional comments

Nil

References

SWCN protocol - https://www.swagcanceralliance.nhs.uk/wp-content/uploads/2020/09/Cisplatin-Gemcitabine-NSCLC.pdf

This protocol has been reviewed by the Lancashire & South Cumbria Lung Oncology Consultants' Group and responsibility for the protocol lies with the Head of Service

Date: May 2021
Review: May 2023
VERSION: 5