Adjuvant Gemcitabine (pancreas)

Indication
Adjuvant therapy following surgery for operable pancreatic cancer.

ICD-10 codes
Codes pre-fixed with C25

Regimen details

Day	Drug	Dose	Route
1, 8, 15	Gemcitabine	1000 mg/m²	IV infusion

Cycle frequency
28 days (3 weeks on and 1 week off)

Number of cycles
6

Administration
Gemcitabine is administered in 250-500mL sodium chloride 0.9% over 30 minutes.

Pre-medication
None

Emetogenicity
This regimen has moderate-low emetic potential.

Additional supportive medication
None

Extravasation
Gemcitabine – neutral (Group 1)

Investigations – pre first cycle

Investigation	**Validity period** (or as per local policy)
FBC	14 days
U+E (including creatinine)	14 days
LFTs	14 days

Investigations – pre subsequent cycles

Investigation	**Validity period** (or as per local policy)
FBC	96 hours (pre day 1) 24 hours (pre all other treatment days)
U+E (including creatinine)	7 days (pre day 1)
LFTs	7 days (pre day 1)

Standard limits for administration to go ahead

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

Investigation	Limit
Neutrophils	≥1.0 x 10^9/L
Platelets	≥100 x 10^9/L
Bilirubin	≤1.5 x ULN
Creatinine Clearance (CrCl)	≥ 30 mL/min

Dose modifications

Each dose in a cycle is assessed independently and should resort to starting dose for the cycle, or be modified as below, based on the current blood test results.

- **Haematological toxicity**

Neutrophils (x 10^9/L)		Platelets (x 10^9/L)	Gemcitabine dose
≥ 1.0	and	> 100	100%
0.5 – 1.0	or	50-100	75%
< 0.5	or	< 50	omit

If febrile neutropenia (neutrophils < 0.5 x 10^9/L and fever requiring IV antibiotics) – reduce gemcitabine dose to 75% for all subsequent doses.

- **Renal impairment**

If CrCl < 30mL/min consider dose reduction (consultant decision).

- **Hepatic impairment**

Lack of information available on the use of gemcitabine in patients with hepatic impairment, therefore, used with caution. If bilirubin > 1.5 x ULN, consider reducing dose to 800mg/m^2 (consultant decision).

- **Other toxicities**

For all other toxicities, including stomatitis and diarrhoea, manage as per the following table:

Toxicity grade	Gemcitabine dose
1	100%
2	Delay until ≤ grade 1 then 100%
3	Delay until ≤ grade 1 then 75%
4	Delay until ≤ grade 1 then 50%

*Gemcitabine should be discontinued at the first sign of microangiopathic haemolytic anaemia (such as rapidly falling haemoglobin with concomitant thrombocytopenia, elevated bilbirubin, creatinine, blood urea nitrogen or LDH. Renal failure may not be reversible with discontinuation of therapy, dialysis may be required.

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

- **Rare or serious side effects**

Myelosuppression
Infertility
Haemolytic uraemic anaemia/ microangiopathic haemolytic anaemia
Interstitial pneumonitis, ARDS
Cardiotoxicity
Hepatotoxicity

- **Frequently occurring side effects**

Nausea and vomiting
Myelosuppression
Mucositis, stomatitis
Diarrhoea, constipation
Peripheral neuropathy
Oedema
Haematuria
Influenza like symptoms
Rash
Peripheral neuropathy

- **Other side effects**

Raised transaminases
Headache
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 warfarin monitor the INR at least once a week and adjust dose accordingly.

Gemcitabine is a radiosensitiser.

Additional comments

Nil

References

- Summary of Product Characteristics Gemcitabine (Lilly) accessed 25 June 2014 via www.medicines.org.uk
- Oettle H1, Neuhaus P, Hochhaus A, et al Adjuvant chemotherapy with gemcitabine and long-term outcomes among patients with resected pancreatic cancer: the CONKO-001 randomized trial. JAMA. 2013 Oct 9;310(14):1473-81
- Allwood M, Stanley A, Wright P, editors. The cytotoxics handbook. 4th ed. Radcliffe Medical Press. 2002.

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