GEMCITABINE AND CARBOPLATIN

Advanced or metastatic bladder cancer, ureteric cancer or renal pelvis carcinoma, where renal function poor or patient not fit for cisplatin
Neo-adjuvant or adjuvant use in transitional cell carcinoma in high-risk patients not suitable for cisplatin-based treatment

Drug / Dosage:	Gemcitabine 1000mg/m^2	IV	Day 1 and Day 8
	Carboplatin AUC 5	IV	Day 1

Administration: Gemcitabine diluted in 250 ml 0.9% sodium chloride and infused over 30 minutes
Carboplatin diluted in 250 ml 5% glucose and infused over 30 - 60 minutes

Frequency: 3 weekly cycle
Neo-adjuvant use: 3 – 4 cycles
Palliative use: 6 cycles
Adjuvant use: up to 6 cycles, at discretion of Consultant

Main Toxicities: myelosuppression; erythematous rash; flu-like syndrome; peripheral oedema (mild-moderate & reversible); infertility / ovarian failure

Anti- emetics: Day 1: highly emetogenic
Day 8: mildly emetogenic

Extravasation: non-vesicants

Regular Investigations:	FBC	Day 1 and Day 8
	U&Es	Day 1
	LFTs	Day 1
	EDTA	Prior to 1st cycle
	HCG, CEA, CA125, CA153, CA199	} Prior to Cycle 1, then repeat at each cycle **only if raised at baseline**

Comments: Carboplatin dose should be calculated using the Calvert formula:
Dose = Target AUC x (25 + GFR)

Cycle 1 may be given using the Cockcroft and Gault formula to predict creatinine clearance if the EDTA is not yet available. When using C&G, a “cap” of 125 ml/min should be used for carboplatin dose calculations.

Carboplatin dose should be re-calculated using the EDTA result for subsequent cycles (do not “cap”). EDTA should only be repeated if there is a 30% change in serum creatinine.

Reason for Update: indications and no of cycles reviewed	Approved by Consultant: Dr J Money-Kyrle
Version: 4	Approved by Lead Chemotherapy Nurse: P Deery
Supersedes: Version 3	Date: 30.1.14
Prepared by: S Taylor	Checked by: C Tucker

Dose Modifications

Haematological Toxicity:

Day 1:

Neutrophils < 1.5 x 10^9/l
or
Platelets < 100 x 10^9/l

Delay treatment for 1 week. Repeat FBC and, if normal, proceed with treatment*.

*Reduce the gemcitabine dose to 75% of the original cycle initiation dose (and do not increase this dose again) if any of the following have occurred:

- Neutrophils < 0.5 x 10^9/l for > 5 days
- Neutrophils < 0.1 x 10^9/l for > 3 days
- Febrile neutropenia
- Platelets < 25 x 10^9/l
- Cycle delay of more than one week due to toxicity

Day 8:

Neutrophils		Platelets	Gemcitabine
> 1.5 x 10^9/l	and	≥ 100 x 10^9/l	Give 100% of the Day 1 dose
1.0 – 1.5 x 10^9/l	or	75 – 100 x 10^9/l	Give 50% of the Day 1 dose
< 1.0 x 10^9/l	or	< 75 x 10^9/l	Omit **(do not defer)**

If a dose reduction to 50% of the Day 1 dose has been made on Day 8, the dose should be increased to 100% again on Day 1 of the next cycle, providing the FBC has returned to normal limits.

Renal Impairment: Carboplatin is contra-indicated if GFR < 20 ml/min.

If CrCl < 30ml/min, consider gemcitabine dose reduction – clinical decision

Hepatic Impairment: If bilirubin > 27 µmol/L, initiate treatment with gemcitabine 800mg/m^2

References:

Bamias, A et al; Cancer 2006; 106 (2): 297 – 303
Linardou, H et al; Urology 2004; 64 (3): 479 - 484
Dogliotti, L et al; Eur Urol 2007; 52 (1):134 – 41
Haematological dose modifications advice in line with Gemzar SPC