LONDON CANCER ALLIANCE West and South

Lung Pathway Group – Gemcitabine in Non-Small Cell Lung Cancer (NSCLC)

Indication:	Advanced or metastatic NSCLC for patients unsuitable for platinum based treatment regimen, performance status 2 or significant co-morbidities.
Regimen details:	Gemcitabine *1000 mg/m^2 IV Days 1, 8 and 15 *Dose can be increased to 1250mg/m^2 if well tolerated
Administration:	Gemcitabine in 250-500ml Sodium Chloride 0.9% IV over 30 minutes
Frequency:	Gemcitabine on days 1, 8 and 15, every 21 days for 4 to 6 cycles.
Pre-medication:	Not routinely required
Anti- emetics:	Low emetogenicity Follow local anti-emetic policy
Supportive medication:	Mouthcare as per local policy
Extravasation:	Non-vesicant
Regular investigations:	Prior to Cycle 1: FBC Day 1 (within 14 days) LFTs Day 1 (within 14 days) U&Es Day 1 (within 14 days) CT scan Baseline Prior to Day 8 and Day 15 (all cycles): FBC Day 8 and 15 (within 48 hours)

Version: 1.0 Supersedes: all other versions	Approved by LCA Lung Pathway Chemotherapy Lead: Dr Rohit Lal
Reason for Update: LCA Protocol Development	Approved by LCA Joint Delivery Subgroup Co-Chairs: Pauline McCalla & Rebecca Johl
Prepared by: Lisa Yuen	Approved by LCA Medicines & Chemotherapy Steering Group Chair: Jamie Ferguson
Second check by: Laura Cameron	Date prepared: November 2014 Review Date: November 2016

Prior to Day 1 (all cycles):	
FBC	Day 1 (within 72 hours)
LFTs	Day 1 (within 72 hours)
U&Es	Day 1 (within 72 hours)
CT scan	After 3 cycles

Toxicities: Myelosuppression, nausea, vomiting, diarrhoea, stomatitis, proteinuria and haematuria, flu-like syndrome, elevation of transaminases, peripheral oedema, dyspnoea, allergic skin rash often associated with pruritus, alopecia (mild)

DOSE MODIFICATIONS

Haematological Toxicity

Prior to Day 1

Neutrophils (x 10^9/L)		Platelets (x 10^9/L)	Dose
≥ 1.0	**&**	≥ 100	100% dose
< 1.0	**or**	< 100	Delay for 1 week. Repeat FBC, if recovered to above this levels, give 100% dose.

If neutrophils < 0.5 x 10^9/L for more than 5 days or < 1.0 x 10^9/L for more than 3 days,
or platelets < 25 x 10^9/L ,
or febrile neutropenia is diagnosed,
or toxicity related delay is > 1 week
- gemcitabine dose should be reduced to 75% from previous dose (do not escalate for subsequent cycles).

Prior Day 8 and 15

Neutrophils (x 10^9/L)		Platelets (x 10^9/L)	Gemcitabine Dose
≥ 1.0	**&**	≥ 100	Give 100% dose
0.5 – 0.9	**or**	50 - 99	Give 75% dose Dose can be re-escalated providing the FBC has returned to normal limits.
< 0.5	**or**	< 50	Omit

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Non-haematological Toxicities

Renal Impairment

Creatinine Clearance (ml/min)	Gemcitabine Dose
≥ 30	Give 100% dose
< 30	Use with caution, no specific dosing recommendations available

Hepatic Impairment

Use gemcitabine with caution in the presence of hepatic dysfunction.
In clinical trials, gemcitabine was associated with transient elevations of serum transaminases in approximately 70% of patients. However, there is no evidence that longer duration of gemcitabine exposure or greater total cumulative gemcitabine dose increases hepatic toxicity. Administration of gemcitabine in patients with concurrent liver metastases or a pre-existing medical history of hepatitis, alcoholism, or liver cirrhosis may lead to exacerbation of the underlying hepatic insufficiency.

Bilirubin (µmol/L)		**ALT or ALP**	**Gemcitabine Dose**
> 27 and ≤ 30			Give 800mg/m^2
> 30	**or**	> 3 x ULN (or > 5 x ULN if liver metastases present)	Withhold and seek Consultant advice – high risk of sepsis

Dose modifications for other toxicities as appropriate

For any Grade 3 – 4 toxicity, treatment should be deferred until recovery, and then restarted with an appropriate dose reduction - discuss with Consultant

Location of regimen: delivery — Outpatient setting

Comments:

Haemolytic anaemia
Gemcitabine should be discontinued at the first signs of any evidence of micro-angiopathic haemolytic anaemia, such as rapidly falling haemoglobin with concomitant thrombocytopenia, elevation of serum bilirubin, serum creatinine, blood urea nitrogen, or LDH, which may indicate development of haemolytic uraemic syndrome. Renal failure may not be reversible, even with discontinuation of therapy, and dialysis may be required

Women of childbearing potential must use effective contraception during treatment.

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Sexually mature males are advised not to father a child during the treatment, and up to 6 months thereafter. If appropriate, male patients should be advised to seek counselling on sperm storage before starting treatment.

Drug interactions: Gemcitabine is a radiosensitiser
Warfarin - increased anticoagulant effect of warfarin

References:

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