

Lancashire & South Cumbria Cancer Network

Systemic Anticancer Treatment Protocol

DRUG REGIMEN

Pembrolizumab, cisplatin and pemetrexed

Indication for use

Untreated, metastatic non-squamous non-small-cell lung cancer (NSCLC)

Regimen

Pembrolizumab	200mg	100ml 0.9% sodium chloride	IV over 30 minutes
Pemetrexed	500mg/m ²	100ml 0.9% sodium chloride	IV over 10 minutes
Potassium chloride Magnesium sulphate	20mmol 10mmol	1 litre 0.9% sodium chloride	IV over 2 hours
Cisplatin	75 mg/m ²	1 litre 0.9% sodium chloride	IV over 2 hours
Potassium chloride Magnesium sulphate	20mmol 10mmol	1 litre 0.9% sodium chloride	IV over 2 hours

Every 3 weeks for a maximum of 4 cycles

Then continue pembrolizumab and pemetrexed every 3 weeks for 2 years (for a total of 35 cycles) or until disease progression or intolerable toxicity (whichever occurs first)

Please note patients require folic acid and vitamin B12 supplementation – see specific information on administration section

Investigation prior to initiating treatment

FBC, U&E, LFT, Ca²⁺

Creatinine clearance (Cockcroft Gault)

Baseline radiology investigations as appropriate (to assess response)

Serum samples for HIV, Hep C antibody and HBsAg if risk factors present

Pregnancy test (if applicable)

Weight and vital signs

Cautions

Patients should be on the lowest clinically effective dose of systemic steroids

Investigations and consultations prior to each cycle

ECOG performance status

FBC, U&Es, LFTs

TFTs ALTERNATE DOSES or each cycle if abnormal

Acceptable levels for treatment to proceed (if outside these levels contact consultant)

Neutrophils >1.0, Platelets >100, LFTs within normal range

Creatinine clearance – 50ml/min (60ml/min prior to cycle 1, 45ml/min on maintenance pemetrexed)

Side Effects

Nausea and vomiting, mucositis, diarrhoea, bone marrow suppression, hearing loss, neuropathy, raised LFTs, neurotoxicity, renal failure, immunological toxicities

Dose Modification Criteria

Reduce dose of cisplatin and/or pemetrexed following repeated delays due to toxicity, discontinue if necessary.

Reduce pemetrexed by 50% in the event of grade 3+ mucositis

Consider replacing cisplatin with carboplatin (see separate protocol) if creatinine clearance <50ml/min or grade 3 neuropathy

Follow [network guidelines](#) for management of immunological toxicity, do not adjust dose of pembrolizumab

Specific Information on Administration

Administer the drug solution using a volumetric pump through an in-line 0.2µm or 1.2µm polyethersulfone or 0.2µm positively charged nylon filter

Additional supportive medication required:

- Folic acid 400µg orally daily beginning 1-2 weeks prior to the first dose of pemetrexed continuing 3 weeks after the last dose of pemetrexed
- Vitamin B12 1000µg IM injection 1-2 weeks prior to the first dose of pemetrexed and repeated with every 3rd dose of pemetrexed until 3 weeks after the last dose of pemetrexed
- Dexamethasone 4mg BD should be taken the day before, the day of and the day after pemetrexed

NSAIDs and salicylates should be stopped 2 days before treatment and not restarted until 2 days after

- Naproxen and nabumetone should be stopped 5 days before treatment
- Piroxicam should be stopped 8 days before treatment

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

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