Serplulimab, Carboplatin & Etoposide

Indication

Small Cell Lung Cancer Extensive stage PS 0-1, no contraindications to immunotherapy, no active untreated brain disease

Regimen details

Cycles 1-4, given every 21 days

Day	Drug	Route	Dose	Instructions
1	Serplulimab	**IV**	4.5mg/kg	Intravenous infusion in 100ml sodium chloride 0.9% over 100mL/hour *
1	Carboplatin	**IV**	AUC 5	500ml Dextrose 5% over 30-60mins
1-3	Etoposide	**IV** or **PO**	100mg/m^2 200mg/m^2	1L 0.9% sodium chloride over 1 hour IV Days 2+3 (Day 1 dose given IV as above)

*** if cycle 1 infusion tolerated without problems serplulimab can be administered over 30 minutes for subsequent cycles**

Carboplatin dose calculated using the Calvert equation: **Carboplatin dose (mg) = AUC (CrCl +25)**
The creatinine clearance (CrCl) is calculated using the Cockcroft and Gault equation

C5 onwards:

Day	Drug	Route	Dose	Frequency	Instructions
1	Serplulimab	**IV**	4.5mg/kg	Every **21** days	Intravenous infusion in 100ml sodium chloride 0.9% over 100mL/hour *

*** if cycle 1 infusion tolerated without problems serplulimab can be administered over 30 minutes for subsequent cycles**

Number of cycles

Carboplatin & Etoposide for 4 cycles only, serplulimab continued until disease progression or unacceptable toxicity

Administration

Serplulimab should be administered via a 0.2µm filter. Patients should be monitored during the serplulimab infusion for infusion related reactions. For grade 1-2 infusion related reactions, decrease the infusion rate and closely monitor or temporarily interrupt treatment. Premedication with paracetamol and chlorphenamine should be used for further doses and patient should be closely monitored. For grade 3-4 infusion related reactions discontinue treatment.

Oral etoposide is available as 50mg and 100mg capsules. The dose should be rounded to nearest 50mg and swallowed whole on an empty stomach or an hour before food.

Carboplatin should be administered in 250-500mL glucose 5% over 30-60 minutes
Patients should be observed closely for hypersensitivity reactions, particularly during the first and second infusions. Hypersensitivity reactions may occur within a few minutes following the initiation of the infusion of paclitaxel or carboplatin. Facilities for the treatment of hypotension and bronchospasm and anaphylaxis must be available.
If hypersensitivity reactions occur, consult “Protocol for the management of hypersensitivity to carboplatin and taxanebased chemotherapy” document

Pre-medication

Anti-emetics

Emetogenicity

This regimen has moderate emetogenic potential.

Extravasation

Serplulimab is neutral, carboplatin and etoposide are irritant

Investigations – pre first cycle

Standard pre-SACT tests

Investigations – pre subsequent cycles

Investigation
FBC
U+E (including creatinine)
LFT
Calcium
Thyroid function*
Glucose*
Cortisol*

* every other cycle.

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
Platelets	≥ 100 x 10^9/L
Creatinine Clearance (CrCl)	≥ 50mL/min (see below for dose modifications)
Bilirubin	< 1.5 x ULN (see below for dose modifications)
ALT/AST	< 1.5 x ULN (see below for dose modifications)

Dose modifications

Dose reductions are not recommended with serplulimab. Doses should be delayed until an adverse reaction resolves to ≤ grade 1.

Haematological toxicity

If neutrophils <1.0 defer and consider GCSF prophylaxis and/or dose reduction for carboplatin and etoposide by 20%
If neuts 1.0-1.5 – discuss with consultant oncologist

Renal impairment

CrCl (mL/min)	**Etoposide dose**	**Carboplatin dose**
>50	100%	Recalculate if >20% change in baseline Cr
15-50	75%	
<15	50%	

No modifications for serplulimab

Hepatic impairment

Bilirubin (x ULN)		**AST/ALT** (x ULN)	**Etoposide dose**
<1.5	and	< 1.5	100%
1.5-3.0	or	1.5-3.0	50%
>3.0	or	> 3.0	25% or omit (consultant decision)

Other toxicities

For suspected immune related adverse events, serplulimab should be withheld and corticosteroids administered. Once symptoms resolved to ≤ Grade 1 the corticosteroid dose should be tapered over 1 month.

Please see network Immunotherapy guidelines

Any Grade 2 immune-related event – withhold serplulimab, commence prednisolone 1-2mg/kg (or equivalent) and consider re-starting immunotherapy once symptoms resolved to grade 1 or less on Pred<10mg

- **Permanently discontinue treatment in patients with the following symptoms:**

- Any grade 4 toxicity, except endocrinopathies that are controlled with replacement hormones.
- Any recurrent Grade 3 toxicity.
- Any treatment related toxicity that does not resolve to ≤ Grade 1 within 12 weeks after onset.
- If a corticosteroid dose ≥ 10mg/day prednisolone (or equivalent) is required for toxicity beyond 12 weeks after onset.

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

Serious side effects

Immune reactions
Interstitial lung disease, pneumonitis
Pancreatitis
Hepatitis
Colitis
Neuropathies
Endocrinopathies
Myelosuppression
Neuropathy
Hypersensitivity reactions
Nephrotoxicity

Frequently occurring side effects

Thrombocytopenia
Hypothyroidism, hyperthyroidism
Hypotension
Dyspnoea
Nausea, vomiting
Diarrhoea
Rash
Pruritis
Arthralgia
Fatigue
Infusion related reactions
Alopecia
Electrolyte disturbances

Other side effects

Decreased appetite
Raised transaminases
Guillain-Barre syndrome

Significant drug interactions – for full details consult product literature/ reference texts

No formal drug interaction studies have been carried out with serplulimab.

Corticosteroids: the use of systemic corticosteroids or immunosuppressants before starting serplulimab should be avoided because of their potential interference with the pharmacodynamic activity and efficacy of serplulimab. However, systemic corticosteroids or other immunosuppressants can be used to treat immune- related adverse reactions after starting serplulimab.

Phenylbutazone, sodium salicylate and salicylic acid: can affect protein binding of etoposide.

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.

Carboplatin only:
Aminoglycoside antibiotics: increased risk of nephrotoxicity and ototoxicity
Clozapine: increased risk of agranulocytosis, avoid concomitant use **Diuretics:**
increased risk of nephrotoxicity and ototoxicity
Nephrotoxic drugs: increased nephrotoxicity ; not recommended
Phenytoin: carboplatin reduces absorption and efficacy of phenytoin

Additional comments

References

Serplulimab with carboplatin and etoposide for untreated extensive-stage small-cell lung cancer Technology appraisal guidance. Reference number: TA1167 Published: 18 June 2026
Cheng Y, Han L, Wu L, et al. Effect of First-Line Serplulimab vs Placebo Added to Chemotherapy on Survival in Patients With Extensive-Stage Small Cell Lung Cancer: The ASTRUM-005 Randomized Clinical Trial. JAMA. 2022;328(12):1223–1232.

THIS PROTOCOL HAS BEEN DIRECTED BY DR ALI, CLINICIAN FOR LUNG CANCER
RESPONSIBILITY FOR THIS PROTOCOL LIES WITH THE HEAD OF SERVICE
DATE September 2026
REVIEW September 2028
Version 2