SA Health

Cancer Chemotherapy Rapid Desensitisation Schedule: CARBOPLATIN

SA Health Cancer Drug Committee

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Government of South Australia
SA Health

Applicant Details

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SA Health Cancer Drug Committee Use only:

Application received (date):	
Confirmation of costing confirmed* □	
Approval Status APPROVED □ Conditions of approval (if any): REJECTED □ Reason(s) for rejection:	
Treatment Risk Level allocated:	
SAH-CDC comments (if any)	
I acknowledge the application and to the best of my knowledge the information contained within is correct and confirm the decision made by the SA Health Cancer drug Committee in submitting this protocol to the SA Health Approved Cancer Chemotherapy Protocol Register: SAH-CDC Chair (or delegate):	Position:
Signature:	Date:

Protocol Name	
Protocol Number	

Rapid Desensitisation Schedule-Carboplatin

Treatment Schedule - Summary

This treatment schedule describes a method of drug administration which allows the safe re-introduction of carboplatin after a previous hypersensitivity reaction. Carboplatin is administered in an incremental fashion (with increased premedication and at gradually increasing concentrations and infusion rates), until the full therapeutic dose has been given. The state of tolerance induced is temporary and disappears once carboplatin is cleared. The patient remains hypersensitive to carboplatin. Therefore, this schedule must be followed for every dose of carboplatin in the approved cancer chemotherapy protocol, until the patient has completed all treatment cycles.

This treatment schedule for desensitisation must be used in conjunction with the approved carboplatin-containing cancer chemotherapy protocol.

Drug	Dose	Route	Day
Carboplatin	As per approved protocol	IV	As per approved protocol

Risk Rating

High

First desensitisation must be administered as an inpatient. If there is no hypersensitivity reaction during this session, subsequent cycles may be administered in the outpatient setting.

Indications and Patient Population

Patients who have experienced moderate-to-severe hypersensitivity reactions (including severe anaphylaxis) to carboplatin, for whom alternative treatment of equal efficacy or toxicity is not available.

Contraindications and Precautions

Patients who have experienced severe life-threatening immunocytotoxic reactions, vasculitis or exfoliative skin diseases such as Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis (SJS/TEN), or Drug Reactions with Eosinophilia and Systemic Symptoms (DRESS).

This treatment schedule is not recommended for unstable patients (eg uncontrolled asthma, cardiac disease, or haemodynamic instability); however, desensitisation may be considered once these underlying conditions have stabilised.

Treatment Schedule - Detailed

Drug	Dose	Step	Rate of Administration
Carboplatin	**Bag 1:** 1/100 dilution in 250 mL glucose 5% (discard after 1 hour)	1. 2. 3. 4.	2 mL/h for 15 minutes, then 5 mL/h for 15 minutes, then 10 mL/h for 15 minutes, then 20 mL/h for 15 minutes.
	Bag 2: 1/10 dilution in 250 mL glucose 5% (discard after 1 hour)	5. 6. 7. 8.	5 mL/h for 15 minutes, then 10 mL/h for 15 minutes, then 20 mL/h for 15 minutes, then 40 mL/h for 15 minutes.
	Bag 3: 100% concentration in 250 mL glucose 5% **(Pharmacist to calculate final volume to be infused to deliver 100% of dose)**	9. 10. 11. 12.	10 mL/h for 15 minutes, then 20 mL/h for 15 minutes, then 40 mL/h for 15 minutes, then 75 mL/h to complete prescribed dose, then discard any remaining solution.

Desensitisation premedication *

Drug	Dose	Frequency / timing
Dexamethasone	8 mg PO	13 hours prior to carboplatin
Cetirizine	10 mg PO	13 hours prior to carboplatin
Famotidine	20 mg PO	13 hours prior to carboplatin
Dexamethasone	8 mg PO	7 hours prior to carboplatin
Cetirizine	10 mg PO	7 hours prior to carboplatin
Famotidine	20 mg PO	7 hours prior to carboplatin
Dexamethasone	20 mg IV	60 minutes prior to carboplatin
Cetirizine	10 mg PO	60 minutes prior to carboplatin
Famotidine	20 mg PO	60 minutes prior to carboplatin
For breakthrough hypersensitivity reactions:		
Hydrocortisone	100 mg IV PRN	At commencement of bag 3 (100 % concentration) of carboplatin
Cetirizine	10 mg PO PRN	At commencement of bag 3 (100 % concentration) of carboplatin

* see approved cancer chemotherapy protocol for premedication required for other drugs administered as part of the protocol (to avoid duplication)

Monitoring (additional to approved protocol)

Observe the patient during administration and for 2 hours after the completion of bag 3 of carboplatin for any sign of breakthrough hypersensitivity reactions.

If a hypersensitivity reaction occurs, stop the infusion and treat according to institutional protocols. After the reaction has subsided, the infusion can be restarted from the step at which it had been paused. If repeated or severe reactions occur, the treatment schedule can be further adjusted by prolonging the step before the reaction occurred, adding an additional (dilution) step, and/or administering prophylactic medication before the step at which the patient had a reaction. This must be done in consultation with the treating consultant and oncology/haematology pharmacist.

Supporting Documents

Seghers S, Teuwen LA, Beyens M, et al. Immediate hypersensitivity reactions to antineoplastic agents - A practical guide for the oncologist. *Cancer Treat Rev*. 2023;116:102559. https://doi:10.1016/j.ctrv.2023.102559

Pagani M, Bavbek S, Alvarez-Cuesta E, et al. Hypersenstivity reactions to chemotherapy: an EAACI Position Paper. *Allergy*. 2022;77:388–403. https://doi.org/10.1111/all.15113

Tsao LR, Young FD, Otani IM, Castells MC. Hypersensitivity Reactions to Platinum Agents and Taxanes. *Clin Rev Allergy Immunol*. 2022;62(3):432-448. https://doi:10.1007/s12016-021-08877-y

Caiado J, Castells MC. Drug Desensitizations for Chemotherapy: Safety and Efficacy in Preventing Anaphylaxis. *Curr Allergy Asthma Rep*. 2021;21(6):37. Published 2021 Jul 7. https://doi:10.1007/s11882-021-01014-x

Lee CW, Matulonis UA, Castells MC. Rapid inpatient/outpatient desensitization for chemotherapy hypersensitivity: standard protocol effective in 57 patients for 255 courses. *Gynecol Oncol*. 2005;99(2):393-399. https://doi:10.1016/j.ygyno.2005.06.028

Parel M, Ranchon F, Nosbaum A, et al. Hypersensitivity to oxaliplatin: clinical features and risk factors.*BMC Pharmacol Toxicol*. 2014;15:1. Published 2014 Jan 13. https://doi:10.1186/2050-6511-15-1

Castells M. Rapid desensitization of hypersensitivity reactions to chemotherapy agents. *Curr Drug Saf*. 2006;1(3):243-251. https://doi:10.2174/157488606777934413

Hypersensitivity reaction. eviQ clinical resources. https://www.eviq.org.au/

For more information

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