

NCCN Chemotherapy Order Templates (NCCN Templates[®])
Appendix B

Appendix B: Carboplatin Dosing

Calvert Equation¹

- Carboplatin Dose (mg) = Target area under the curve (AUC mg·min/mL) x (GFR* + 25)

*GFR estimated by calculated creatinine clearance using Cockcroft-Gault Equation (see below).

Cockcroft-Gault Equation²

$$\text{CrCl (male; mL/min)} = \frac{(140 - \text{age}) \times (\text{weight in kg})}{72 \times \text{serum creatinine (mg/dL)}}$$

$$\text{CrCl (female; mL/min)} = 0.85 \times \text{CrCl (male)}$$

Maximum Carboplatin Dose Calculation³

The FDA has recommended that physicians consider capping the dose of carboplatin for desired exposure (AUC) to avoid potential toxicity due to overdosing. The maximum dose is based on a GFR estimate that is capped at 125 mL/min for patients with normal renal function.

Based on the Calvert formula described in the carboplatin label, the maximum doses can be calculated as:

$$\text{Maximum Carboplatin Dose (mg)} = \text{Target AUC (mg·min/mL)} \times (125 \text{ mL/min} + 25)$$

For a target AUC = 6, the maximum dose is 6 x 150 = 900 mg

For a target AUC = 5, the maximum dose is 5 x 150 = 750 mg

For a target AUC = 4, the maximum dose is 4 x 150 = 600 mg

Additional Considerations⁴

- Overweight or obese patients (BMI ≥ 25 kg/m²): Consider using an adjusted body weight.

$$\text{Adjusted body weight (kg)} = \text{ideal body weight (IBW)} + 0.4 \times (\text{total body weight [TBW]} - \text{IBW})$$

- Patients with abnormally low serum creatinine (Cr), including elderly or cachectic patients: Consider using a minimum Cr of 0.7 mg/dL to avoid overestimation of CrCl.
- Measured CrCl: Consider using ethylene diamine tetraacetic acid (EDTA) or a 24-hour urine to measure CrCl (not a serum creatinine-based mathematical equation) when dosing at an AUC greater than 6 or when using an un-capped CrCl.

REFERENCES

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2. Cockcroft DW, Gault MH. Prediction of creatinine clearance from serum creatinine. *Nephron.* 1976;16:31–41.
3. US Food & Drug Administration. Carboplatin dosing. Available at: <https://wayback.archive-it.org/7993/20170113081146/http://www.fda.gov/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/CDER/ucm228974.htm>. Revised November 27, 2015. Accessed October 16, 2017.
4. Updated FAQ's for dosing of carboplatin [newsletter]. Philadelphia, PA: Gynecologic Oncology Group Newsletter; Spring 2011. Available at: <http://www.gog.org/Spring2011newsletter.pdf>. Accessed October 26, 2017.