Appendix B: Carboplatin Dosing

Calvert Equation\(^1\)

- 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 Equation\(^2\)

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

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

Maximum Carboplatin Dose Calculation\(^3\)

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:

Maximum Carboplatin Dose (mg) = Target AUC (mg·min/mL) x (125 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 Considerations\(^4\)

- **Overweight or obese patients (BMI \(\geq\) 25 kg/m\(^2\)):** 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.

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REFERENCES


