Appendix B: Carboplatin Dosing

Cockcroft-Gault Equation

- Substitute GFR with creatinine clearance that is calculated via Cockcroft-Gault equation

\[
\text{CrCl Calculation (Cockcroft-Gault Formula):}
\]

- CrCl (men; mL/min) = \((140 \text{ – age}) \times \text{weight in kg} \div (\text{serum creatinine [mg/dL]} \times 72)\)
- CrCl (women; mL/min) = 0.85 \times \text{CrCl (men)}

Isotope Dilution Mass Spectrometry (IDMS)

- Utilizes standardized method to measure serum creatinine (SCr) utilized by US clinical laboratories
- May underestimate SCr values compared to older methods when the SCr values are relatively low

Calvert Equation

- Calvert equation: Dose (mg) = Target AUC \times (\text{glomerular filtration rate [GFR]} \times + 25)

*GFR estimated by calculated creatinine clearance.

Maximum Carboplatin Dose Calculation

- The FDA has recommended a maximum creatinine clearance (CrCl) for use in calculating carboplatin doses to minimize toxicity. The maximum dose is based on a GFR estimate that is capped at 125 mL/min for patients with normal renal function.
- If the carboplatin dose is calculated utilizing the IDMS-derived CrCl (GFR) within the Calvert equation, carboplatin dosing could be higher than desired, and could result in increased drug-related toxicities.

\[
\text{Maximum Carboplatin Dose (mg)} = \text{Target AUC (mg\cdot\text{min/mL})} \times (150 \text{ mL/min})
\]
REFERENCE