

CARBOPLATIN AUC DOSING IN PAEDIATRIC PATIENTS: INFLUENCE OF GRF MEASUREMENT

AUTHORS: N. BÁEZ GUTIÉRREZ¹, H. RODRIGUEZ RAMALLO¹, R. IGLESIAS JEREZ², C. ÁLVAREZ DEL VAYO¹, B. FERNANDEZ RUBIO¹.

1- HOSPITAL UNIVERSITARIO VIRGEN DEL ROCIO, PHARMACY, SEVILLE, SPAIN.

2- HOSPITAL UNIVERSITARIO VIRGEN DEL ROCIO, NUCLEAR MEDICINE, SEVILLE, SPAIN.

Abstract number:
5PSQ-153

Background and importance

In paediatrics, some carboplatin dosage methods are based on renal clearance. An accurate determination of the glomerular filtration rate (GFR) can be obtained by measuring 51Cr-EDTA clearance. For that matter various formulae have been developed to calculate and estimate the GFR.

Aim and objectives

The aim of this study is to compare carboplatin doses calculated by modified Calvert formulae with GFR measured by 51Cr-EDTA clearance and GFR estimated with Schwartz formulae in children.

Material and methods

- All cancer paediatric patients whose GFR were measured by 51Cr-EDTA were included.

- Modified Calvert formula was used:

$$\text{Dose (mg/m}^2\text{)} = \text{target AUC} \times [\text{raw GFR (ml/min)} + 15 \times \text{BSA (m}^2\text{)}]$$

- The target AUC chosen was 5 mg/ml/min.
- Carboplatin doses were calculated
 - GFR were measured by 51Cr-EDTA
 - GFR were also estimated with Schwartz formulae

Results

Table 1. Results

Patients included	33	
Sex	Male:	21 (63.63%)
	Female:	12 (36.37)
mAge (range)	10 (1-17) years-old	
mWeight (range)	28 (8-84.4) Kg	
mHeight (range)	137 (64-182) Cm	
mBSA (range)	1.04 (0.37-2.06) m ²	
mcarboplatin doses	51Cr-EDTA	274.2 ± 135.7 mg
	Schwartz formulae	364.9 ± 156.6 mg
Mean difference between methods	90.58 mg p <0.001	

Conclusion and relevance

- Carboplatin doses calculated with GFR estimated by Schwartz were statistically higher than those measured with 51Cr-EDTA. This variability may be a risk factor leading to inadequate dosage of patients treated with carboplatin.
- GFR measured with 51-Cr-EDTA is considered the gold standard. Therefore, it should be implemented in all centers where carboplatin is dosed in pediatric patients.