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Estimating the correct way of calculating the carboplatin dose

Holweger et al [1] calculated carboplatin administered dose by a modified Calvert formula whereas GFR was substituted by CrCl via 24-h urine collection or calculated by Jelliffe. We don't know how many patients were dosed with 24-h urine collection or with Jelliffe formula in this study. Observed the measured AUC results (5.8 ± 1.1 mg/mL x min), and the predicted AUC with 24-h urine collection estimation (4.8 ± 1.1 mg/mL x min), it is probably that most patients were dosified using this estimation.

Authors' algorithm and Jelliffe formula are both the most exact formulas, with predicted AUC similar to measured AUC. However, there are some differences in the resources that are necessary for the development of both tests. To use MDRD-6 formula, that is included in authors' algorithm, we need to know serum creatinine, age, sex, ethnicity, blood urea, albumin and BSA. Jelliffe formula doesn't require to know ethnicity, blood urea and albumin, so it could be an easier usage formula with similar results in carboplatin dosage. In addition, it would be interesting to know the results of the prediction using the simplified MDRD-4 IDMS formula, that doesn't need albumin and blood urea values [2].

Calvert formula was developed by using isotopic ^{51}Cr -EDTA method to estimate GFR [3]. Romero et al [4] compared, using Calvert formula, ^{51}Cr -EDTA method to estimate GFR with Cockcroft-Gault, MDRD-4 IDMS and Wright formula. In this study, that included 290 patients, the best method to estimate GRF was Cockcroft-Gault. In Holweger et al study [1] the Cockcroft-Gault estimation in obese patients was carried out using the actual body weight. It is known that when actual body weight is used, in patients with $\text{BMI} > 30 \text{ kg/m}^2$, it can conduce to overdosification. In this case it is recommended to use the ideal or adjusted body weight to apply the Cockcroft-Gault formula [5]. When we use the adjusted body weight in the Cockcroft-Gault estimation for the six obese patients included in the study, the calculated CrCl is 76 ml/min ($\text{SD} = \pm 17$). It is probably that this change in the Cockcroft-Gault estimation could correct some bias that explains the difference between oGFR (63 ± 20 ml/min) and eCrCl (Cockcroft-Gault) (75 ± 23 ml/min).

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2. Stevens LA, Nolin TD, Richardson MM, Feldman HI, Lewis JB, Rodby R, Townsend R, Okparavero A, Zhang YL, Schmid CH, Levey AS; Chronic Kidney Disease Epidemiology Collaboration. Comparison of drug dosing recommendations based on measured GFR and kidney function estimating equations. *Am J Kidney Dis*. 2009 Jul;54(1):33-42. Epub 2009 May 17.
3. Calvert AH, Newell DR, Gumbrell LA, O'Reilly S, Burnell M, Boxall FE, Siddik ZH, Judson IR, Gore ME, Wiltshaw E (1989) Carboplatin dosage: prospective

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 5. De Jonge ME, Mathot RA, Van Dam SM, Beijnen JH, Rodenjis S. Extremely high exposures in an obese patient receiving high-dose cyclophosphamide, thiotepa and carboplatin. *Cancer Chemother Pharmacol* 2002; 50: 251-5.

Differences between real and adjusted body weight (ABW) Clcr estimation in obese patients included in Holweger et al study. BMI: body mass index; SCr: serum creatinine; CG: Cockcroft-Gault; CG-ABW: Cockcroft-Gault using adjusted body weight.

Patient	Sex	Age (years)	Weight (kg)	BMI (kg/m ²)	SCr (μmol)	eClcr (CG) (ml/min)	eClcr ABW (CG-ABW) (ml/min)	eClcr carboplatin calculated dose (mg)	eClcr ABW carboplatin calculated dose
1	F	69	90	36,1	98	69	50	465	375
2	F	65	84	30,5	80	83	66	534	457
3	F	57	79	30,9	80	56	68	550	464
4	F	56	90	33,5	71	111	85	676	551
5	F	47	103	37,8	80	125	91	746	580
6	F	53	90	30,1	71	115	94	696	597
Mean		58	89	33,1	80	93	76	611	504
SD		8	8	3,3	10	28	17	101	78