Table 1. Formulae for BSA, GFR, carboplatin clearance, and carboplatin dose calculation

Literature	Equation	Unit of result
BSA		
Mosteller	$BSA = \sqrt{\frac{H[cm] \times BW[kg]}{3600}}$	m^2
Gehan-George	$BSA = 0.0235 \times H[cm]^{0.42246} \times BW[kg]^{0.51456}$	m^2
Boyd	$BSA = 4.688 \times BW[g]^{(0.8168 - 0.0154 \times \log BW[g])}$	cm^2
DuBois-DuBois	$BSA = 71.84 \times H[cm]^{0.725} \times BW[kg]^{0.425}$	cm^2
GFR		
Weight-based Cole	$GFR = 16.25 + 1.67 \times BW[kg]$	ml/min
Léger	$GFR = \frac{56.7 \times BW[kg] + 0.142 \times H[cm]^2}{SCr[\mu M]}$	ml/min
Weight- and creatinine-based Cole	$GFR = 36.76 + 1.91 \times BW[kg] - 0.47 \times SCr[\mu M]$	ml/min
Schwartz	$GFR = \frac{k \times H[cm]}{SCr[mg/dL]}$	ml/min/1.73 m^2
Carboplatin clearance		
Chatelut	$Carbo - CL = 2.85 \times BW[kg] \times (1 - 0.00357 \times SCr[mg/dL]) \times (1 - 0.372 \times Np) + 8.7$	ml/min
Dose formula		
Chatelut	$Dose = TargetAUC \times Carbo - CL$	mg
Marina	$Dose = TargetAUC \times (0.93 \times GFR[mL/min/m^2] + 15)$	mg/m^2
Newell	$Dose = TargetAUC \times (GFR[mL/min] + 0.36 \times BW[kg])$	mg

BSA = Body surface area, H = height, BW = body weight, GFR = glomerular filtration rate, SCr = serum creatinine, *k* = age- and sex-dependent constant (preterm infants: *k* = 0.33; in-term infants to 1 year: *k* = 0.45; age 1–2 years: *k* = 0.45; age 2–12 years: *k* = 0.55; age 13–21 years, female: *k* = 0.55; age 13–21 years, male: *k* = 0.7), Carbo-CL = carboplatin clearance, Np = nephrectomy (Np = 1 or 0 for unilateral nephrectomy or no nephrectomy, respectively).

Table 2. Mean values of BSA, GFR and carboplatin dose calculation (n = 9 per group) based on different formulae, age groups, and sex.

	Age [years]	**0.5**	**1**	**2**	**4**	**8**	**8**	**16**	**16**
	Sex					**m**	**f**	**m**	**f**
BSA formula		**BSA [m^2]**							
Mosteller		0.37	0.45	0.56	0.69	1.00	0.99	1.77	1.61
Gehan George		0.39	0.47	0.57	0.71	1.02	1.01	1.78	1.62
Boyd		0.41	0.49	0.58	0.70	0.99	0.98	1.74	1.60
DuBois -Du Bois		0.36	0.43	0.54	0.68	1.01	1.00	1.79	1.62
Mean [m^2]		0.38	0.46	0.56	0.70	1.00	1.00	1.77	1.61
CV [%]		5.7	4.9	3.3	1.9	2.0	2.0	1.9	1.7
GFR formula		**GFR [mL/min]**							
Weight-based Cole		29.0	32.8	37.5	44.1	62.7	62.0	124	111
Léger		29.9	30.8	40.9	46.5	65.0	64.4	115	101
Weight-and creatinine based Cole		34.7	34.9	40.3	43.7	60.8	60.0	127	112
Schwartz		16.2	17.7	30.9	38.0	60.0	59.3	160	107
Mean [mL/min]		27.4	29.0	37.4	43.1	62.1	61.4	131	108
CV [%]		29.2	26.9	12.7	9.2	5.5	5.5	15.4	5.5
Dose formula	**GFR formula**	**Dose [mg]**							
Chatelut		138	162	196	236	353	348	732	647
Marina	Weight-based Cole	163	186	216	257	367	363	711	636
Newell		158	182	211	251	364	359	737	656
Marina	Léger	167	177	232	268	377	374	667	590
Newell		163	172	228	263	375	372	691	606
Marina	Weight-creatinine based Cole	189	196	229	255	358	354	723	640
Newell		187	192	225	249	354	349	751	661
Marina	Schwartz	103	116	185	229	354	350	875	617
Newell		95	107	178	220	350	346	914	635
Mean [mg]		152	166	211	247	361	357	756	632
CV [%]		22.4	19.8	10.0	7.1	4.3	4.3	11.6	4.3

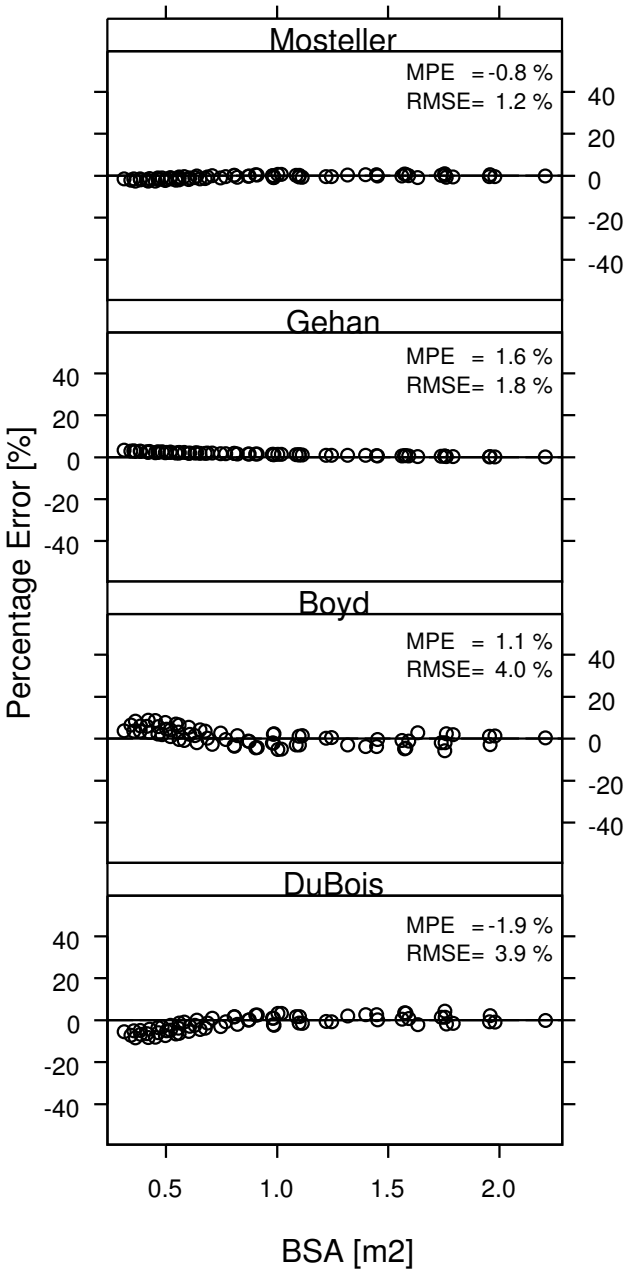

Fig. 3.BSA: Comparison of formulae percentage error vs. BSA as estimated by the mean of all 4 formulae, as well as bias (MPE) and precision (RMSE) for each formula.

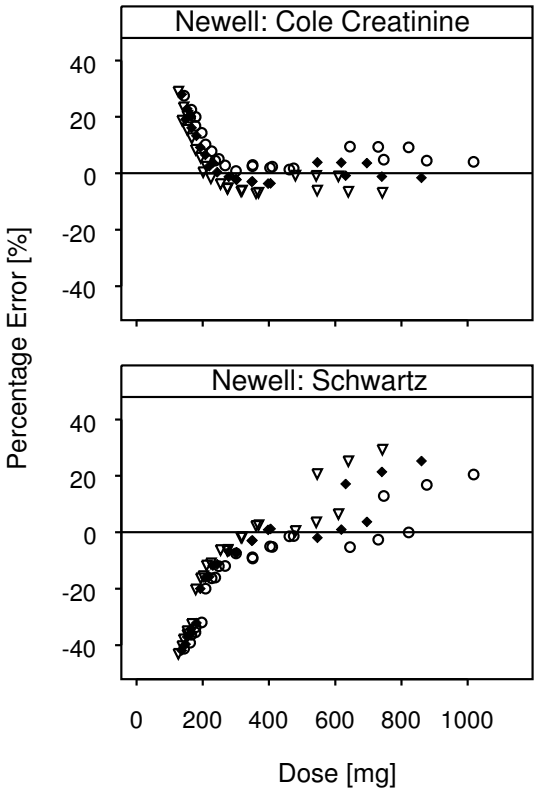

Fig. 6. Carboplatin dose: Comparison of formulae percentage error vs. carboplatin dose as estimated by the mean of all 9 formulae for different weight groups: (∇) underweight, (♦) average, (○) obese.