

Table S1. Structural model building

	1-compartment	2-compartment	3-compartment
Parameterization	CL, V	CL, V1, V2, Q	CL, V1, V2, V3, Q2, Q3
Covariate step	Not implemented	Not implemented	Not implemented
OFV (-2×log-likelihood)	2610.35	2406.24	2403.74
AIC	2622.35	2424.24	2431.74
BIC	2635.76	2444.34	2463.02
BICc	2641.49	2451.51	2474.48

OFV, objective function value; AIC, Akaike information criteria, BIC(c), Bayesian information criteria (corrected)

Table S2. Pearson's correlation test of the random effect versus covariates

Covariates	eta_CL		eta_V1		eta_Q		eta_V2	
	Coeff	p-value	Coeff	p-value	Coeff	p-value	Coeff	p-value
Gender		3.16e-1		6.77e-1		3.29e-1		5.36e-1
Age	-0.091	4.55e-1	0.1	3.91e-1	0.18	1.39e-1	0.32	7.5e-3
Albumin	0.071	5.62e-1	-0.24	4.46e-2	-0.28	1.92e-2	-0.13	2.76e-1
BSA	0.069	5.72e-1	0.14	2.5e-1	0.015	9e-1	-0.1	4e-1
CL _{CR-CKDEPI}	0.39	1.06e-3	-0.075	5.39e-1	-0.18	1.34e-1	-0.12	3.12e-1
Creatinine	-0.098	4.23e-1	0.022	8.61e-1	-0.12	3.36e-1	-0.16	1.76e-1
Height	0.14	2.53e-1	-0.11	3.6e-1	0.034	7.81e-1	0.12	3.32e-1
Weight	0.083	4.95e-1	0.19	1.1e-1	-0.0045	9.71e-1	-0.026	8.34e-1

The covariate with the highest correlation is considered for inclusion into the base structural model (forward inclusion)

Table S3. Covariate model building

	Base model	Covariate Model
Parameterization	CL, V1, V2, Q	CL, V1, V2, Q
Added covariate	-	CL _{CR} on CL
OFV (-2×log-likelihood)	2406.24	2395.15
AIC	2424.24	2415.15
BIC	2444.34	2437.49
BICc	2451.51	2444.45

OFV, objective function value; AIC, Akaike information criteria, BIC(c), Bayesian information criteria (corrected)

Table S4. Correlation test of individual parameter versus covariates

	Statistics	p-value
Beta_CL_CL _{CR-CKDEPI}	5.09	3.15e-6

The covariates with a p-value <0.05 should not be removed from the model (backward elimination)

Description of the pharmacokinetic model building and covariate analysis

Table S1 reports the values of the OFV, AIC, BIC and BICc used to select the base population pharmacokinetic model. The model with the lowest values (i.e. the 2-compartment model), was finally selected. Table S2 reports the Pearson's correlation test of the random effect of the PK parameter of the base model versus all the tested covariates. As the lowest p-values was between eta_CL and CL_{CR}. CL_{CR} was added as a covariate on dalbavancin CL. Table S3 shows the values of the OFV, AIC, BIC and BICc after including CL_{CR} on CL. As all these values decreased compared to those of the base model, CL_{CR} was definitely included into the final population pharmacokinetic model. Table S4 shows the result of the correlation test of individual parameter versus covariates, and confirms that CL_{CR} should not be removed from the final model.