

Multiple imputation to handle missing covariate data in pharmacometrics modelling

My-Luong Vuong^{1,*}, Geert Verbeke¹, and Erwin Dreesen¹

¹ KU Leuven, Belgium, * myluong.vuong@kuleuven.be



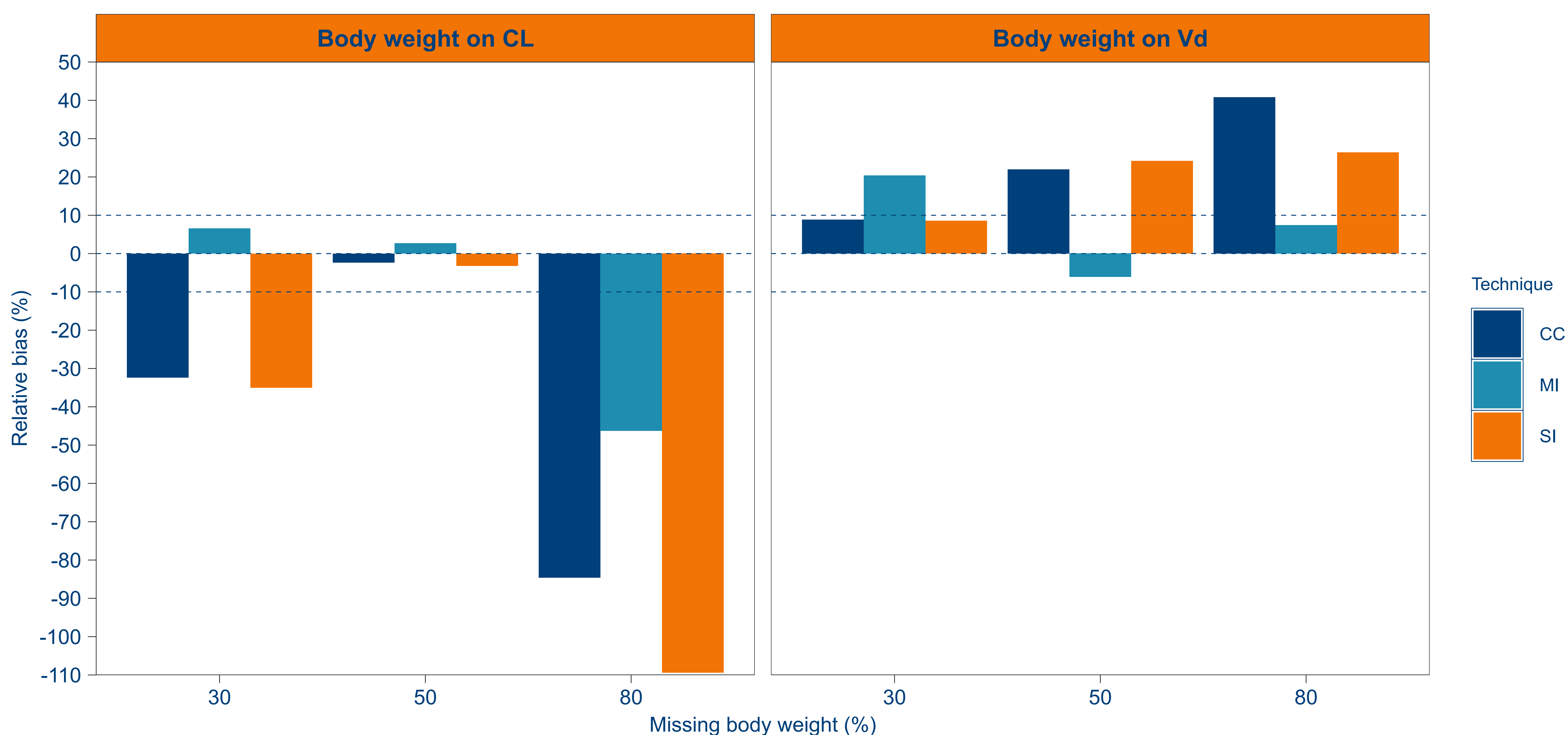
Inappropriate treatment of missing covariate data may adversely affect drug development and clinical practice

Multiple imputation is the best method to treat missing covariate data
is valid under missing (completely) at random
is still rarely used in pharmacometrics, instead: complete case analysis & single imputation

We showed the superiority of multiple imputation over complete case analysis and single imputation using data from a 1-compartment popPK model of warfarin in 32 healthy volunteers¹

We encourage pharmacometricians to employ multiple imputation more frequently

Multiple imputation leads to **more accurate** parameter estimates than complete case analysis and single imputation



Multiple imputation leads to **more precise** parameter estimates than complete case analysis and single imputation

