Addressing Treatment Switching Bias with G-methods: Exploring the Impact of Model Specification

Amani Al Tawil[*1,2], Sean McGrath[3], Robin Ristl[†4], and Ulrich Mansmann[†1,2]

[1] *Institute for Medical Information Processing, Biometry, and Epidemiology (IBE), Faculty of Medicine, Ludwig-Maximilians-Universität München*
[2] *Pettenkofer School of Public Health, Faculty of Medicine, Ludwig-Maximilians-Universität München*
[3] *Department of Biostatistics, Harvard T.H. Chan School of Public Health*
[4] *Center for Medical Data Science, Medical University of Vienna*

Electronic Supplementary Material 5

Number (%) of bootstrap replicate failures

[*]Correspondence: altawil@ibe.med.uni-muenchen.de
[†]Equally contributed

Table 1: Number (%) of bootstrap replicate failures

		Number (%) of bootstrap replicate failures		
	Approach	**CoxPH**	**Pooled Logistic Regression**	**Kaplan-Meier**
Intention to Treat	Unadjusted for baseline covariates	12 (1.2)	12 (1.2)	12 (1.2)
	Adjusted for strata at randomization*	0	0	NA
	Adjusted for baseline covariates*	0	0	NA
	Marginal effect adjusted for baseline covariates	NE	0	NA
Per Protocol	Excluding switchers	128 (12.8)	128 (12.8)	128 (12.8)
	Censoring at switching	157 (15.7)	157 (15.7)	157 (15.7)
	Treatment as time-varying covariate	127 (12.7)	127 (12.7)	127 (12.7)
	Inverse probability of censoring weights*	14 (1.4)	14 (1.4)	14 (1.4)
	Parametric g-formula⁜	NE	2 (0.4)	NE

Abbreviations: CoxPH, cox proportional hazard; CI, confidence interval; NE, not estimated; NA, not applicable
***Strata at randomization**: presence or absence of baseline brain metastases and completion of at least one full cycle of chemotherapy for locally advanced or metastatic disease (yes or no)
***Baseline covariates**: age, ECOG score, measurable intracranial CNS disease, race, sex, smoking history, strata at randomization, initial diagnosis stage, lung involvement at study entry and prior radiation therapy
***Inverse probability of censoring weight**: Estimates for the IPCW approach were estimated using a weighted pooled logistic regression model using the product of the two weights for LTFU/AC (specifications 4 in Table 4) and switching (specifications 4 in Table 5).