

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

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List of Covariates Included in the Parametric G-formula Analysis

Table S5: Description of the covariates included in specification 1 of the parametric g-formula analysis

Specification [†]	Control		Experimental
	Dependent Variable	Independent Variables	Independent Variables
1	Progression	time, quadratic time, race, baseline ECOG, smoking history, intracranial progression (lagged), target lesion size (lagged)	time, sex, race, baseline ECOG, smoking history, strata at randomization, intracranial progression (lagged), target lesion size (lagged)
	ECOG	time, age, quadratic age, sex, race, baseline ECOG, smoking history, measurable intracranial CNS disease, prior radiation therapy, strata at randomization, progression (lagged), progression, intracranial progression (lagged), target lesion size (lagged), treatment(lagged)	time, quadratic time, age, quadratic age, sex, race, baseline ECOG, smoking history, measurable intracranial CNS disease, prior radiation therapy, strata at randomization, intracranial progression (lagged), target lesion size (lagged)
	Intracranial progression	time, age, race, prior radiation therapy, strata at randomization, progression (lagged), progression, target lesion size (lagged), treatment(lagged)	time, quadratic time, baseline ECOG, strata at randomization, progression (lagged), progression, target lesion size (lagged)
	Target lesion size	time, quadratic time, age, sex, race, baseline ECOG, measurable intracranial central nervous system(CNS) disease, prior radiation therapy, strata at randomization, progression (lagged), progression, ECOG(lagged), ECOG, intracranial progression (lagged), intracranial progression, treatment(lagged)	time, quadratic time, age, quadratic age, sex, race, baseline ECOG, strata at randomization, progression (lagged), progression, ECOG(lagged), ECOG, intracranial progression (lagged), intracranial progression
	Death	time, quadratic time, age, quadratic age, smoking history, strata at randomization, ECOG(lagged), ECOG, treatment (lagged), treatment, progression time	time, sex, measurable intracranial CNS disease, strata at randomization, ECOG(lagged), ECOG, intracranial progression (lagged), intracranial progression, progression time

Abbreviations: ECOG, Eastern Cooperative Oncology Group score; CNS, Central Nervous System

[†] Specification 4 from g-formula analysis is the same as specification 1 but replacing 2 categories of ECOG with 3 categories.

Specification 5 from g-formula analysis is the same as specification 1 but without progression time.

Table S6: Description of the covariates included in specification 2 of the parametric g-formula analysis

Specification [†]	Control		Experimental
	Dependent Variable	Independent Variables	Independent Variables
2	Progression	time, race, baseline ECOG, intracranial progression (lagged), target lesion size (lagged)	time, race, baseline ECOG, smoking history, strata at randomization, intracranial progression (lagged), target lesion size (lagged)
	ECOG	time, age, quadratic age, race, baseline ECOG, smoking history, measurable intracranial CNS disease, prior radiation therapy, strata at randomization, progression (lagged), intracranial progression (lagged), target lesion size (lagged), treatment(lagged)	time, quadratic time, age, quadratic age, sex, race, baseline ECOG, smoking history, measurable intracranial CNS disease, prior radiation therapy, strata at randomization, intracranial progression (lagged), target lesion size (lagged)
	Intracranial progression	time, age, race, prior radiation therapy, strata at randomization, progression (lagged), progression	time, baseline ECOG, strata at randomization, progression (lagged), progression
	Target lesion size	time, quadratic time, age, sex, race, baseline ECOG, measurable intracranial central nervous system(CNS) disease, prior radiation therapy, strata at randomization, progression, treatment(lagged)	time, quadratic time, age, quadratic age, sex, race, baseline ECOG, strata at randomization, progression
	Death	time, quadratic time, age, quadratic age, smoking history, strata at randomization, treatment (lagged), treatment, progression time	time, sex, measurable intracranial CNS disease, strata at randomization, intracranial progression (lagged), intracranial progression, progression time

Abbreviations: ECOG, Eastern Cooperative Oncology Group score; CNS, Central Nervous System

Table S7: Description of the covariates included in specification 3 of the parametric g-formula analysis

Specification [†]	Control		Experimental
	Dependent Variable	Independent Variables	Independent Variables
3	Progression	time, race, baseline ECOG, intracranial progression (lagged), target lesion size (lagged)	time, race, baseline ECOG, strata at randomization, intracranial progression (lagged), target lesion size (lagged)
	ECOG	time, age, quadratic age, race, baseline ECOG, smoking history, measurable intracranial CNS disease, prior radiation therapy, strata at randomization, progression (lagged), intracranial progression (lagged), target lesion size (lagged), treatment(lagged)	time, age, quadratic age, sex, race, baseline ECOG, smoking history, measurable intracranial CNS disease, prior radiation therapy, strata at randomization, intracranial progression (lagged)
	Intracranial progression	time, age, prior radiation therapy, strata at randomization, progression (lagged), progression	time, baseline ECOG, strata at randomization, progression (lagged), progression
	Target lesion size	time, quadratic time, age, sex, race, baseline ECOG, measurable intracranial central nervous system(CNS) disease, prior radiation therapy, strata at randomization, progression, treatment(lagged)	time, quadratic time, age, quadratic age, sex, race, baseline ECOG, strata at randomization, progression
	Death	time, age, quadratic age, strata at randomization, treatment (lagged), treatment, progression time	time, intracranial progression (lagged), intracranial progression, progression time

Abbreviations: ECOG, Eastern Cooperative Oncology Group score; CNS, Central Nervous System