

## Additional file 6

**Table S6.** Multivariate Analysis for Heart V40 and Overall Survival

	Variables	HR	95% CI	P value
<b>Model</b> <b>Heart V40/ Mean lung dose</b>	Body mass index (kg/m <sup>2</sup> ) ( $\leq 21.3$ vs. $> 21.3$ )	1.725	0.883-3.372	0.111
	Body surface area (m <sup>2</sup> ) ( $\leq 1.65$ vs. $> 1.65$ )	1.190	0.596-2.374	0.622
	ECOG performance status (0–1 vs. 2–3)	0.226	0.113-0.455	0.000
	Stage (I&II vs. III)	0.025	0.004-0.182	0.000
	Heart volume (ml) ( $\leq 592$ vs. $> 592$ )	0.673	0.400-1.132	0.136
	Chemotherapy regimen (F vs. NF)	0.174	0.067-0.451	0.000
	PTV prescribed to 36 Gy (ml) (continuous)	0.997	0.996-0.999	0.002
	PTV prescribed to 50 Gy (ml) (continuous)	1.003	1.001-1.005	0.000
	<b>Heart V40 (%) (continuous)</b>	1.011	1.001-1.022	0.034
	<b>Mean lung dose (cGy) (continuous)</b>	1.001	1.000-1.002	0.012
<b>Model</b> <b>Heart V40/ Lung V5</b>	Body mass index (kg/m <sup>2</sup> ) ( $\leq 21.3$ vs. $> 21.3$ )	1.526	0.790-2.946	0.208
	Body surface area (m <sup>2</sup> ) ( $\leq 1.65$ vs. $> 1.65$ )	1.467	0.758-2.841	0.255
	ECOG performance status (0–1 vs. 2–3)	0.257	0.130-0.507	0.000
	Stage (I&II vs. III)	0.046	0.008-0.282	0.001
	Heart volume (ml) ( $\leq 592$ vs. $> 592$ )	0.700	0.414-1.182	0.182
	Chemotherapy regimen (F vs. NF)	0.231	0.093-0.574	0.002
	PTV prescribed to 36 Gy (ml) (continuous)	0.998	0.996-1.000	0.013
	PTV prescribed to 50 Gy (ml) (continuous)	1.002	1.001-1.004	0.003
	<b>Heart V40 (%) (continuous)</b>	1.011	1.000-1.022	0.053
	<b>Lung V5 (%) (continuous)</b>	1.018	0.993-1.044	0.164
<b>Model</b> <b>Heart V40/ Lung V10</b>	Body mass index (kg/m <sup>2</sup> ) ( $\leq 21.3$ vs. $> 21.3$ )	1.474	0.768-2.829	0.244
	Body surface area (m <sup>2</sup> ) ( $\leq 1.65$ vs. $> 1.65$ )	1.472	0.761-2.846	0.250
	ECOG performance status (0–1 vs. 2–3)	0.246	0.124-0.489	0.000
	Stage (I&II vs. III)	0.045	0.007-0.274	0.001
	Heart volume (ml) ( $\leq 592$ vs. $> 592$ )	0.685	0.404-1.160	0.159
	Chemotherapy regimen (F vs. NF)	0.236	0.095-0.589	0.002
	PTV prescribed to 36 Gy (ml) (continuous)	0.998	0.996-1.000	0.016
	PTV prescribed to 50 Gy (ml) (continuous)	1.002	1.001-1.004	0.003
	<b>Heart V40 (%) (continuous)</b>	1.012	1.001-1.023	0.028
	<b>Lung V10 (%) (continuous)</b>	1.019	0.984-1.056	0.286

Model	Heart V40/ Lung V20	Body mass index (kg/m <sup>2</sup> ) ( $\leq 21.3$ vs. $> 21.3$ )	1.456	0.762-2.784	0.255
		Body surface area (m <sup>2</sup> ) ( $\leq 1.65$ vs. $> 1.65$ )	1.397	0.720-2.709	0.323
		ECOG performance status (0–1 vs. 2–3)	0.223	0.110-0.452	0.000
		Stage (I&II vs. III)	0.039	0.006-0.248	0.001
		Heart volume (ml) ( $\leq 592$ vs. $> 592$ )	0.658	0.387-1.119	0.123
		Chemotherapy regimen (F vs. NF)	0.224	0.089-0.564	0.002
		PTV prescribed to 36 Gy (ml) (continuous)	0.998	0.996-0.999	0.009
		PTV prescribed to 50 Gy (ml) (continuous)	1.003	1.001-1.004	0.002
		<b>Heart V40 (%) (continuous)</b>	1.012	1.001-1.022	0.028
		<b>Lung V20 (%) (continuous)</b>	1.039	0.988-1.093	0.138
Model	Heart V40/ Lung V30	Body mass index (kg/m <sup>2</sup> ) ( $\leq 21.3$ vs. $> 21.3$ )	1.470	0.766-2.821	0.246
		Body surface area (m <sup>2</sup> ) ( $\leq 1.65$ vs. $> 1.65$ )	1.406	0.722-2.740	0.316
		ECOG performance status (0–1 vs. 2–3)	0.224	0.110-0.455	0.000
		Stage (I&II vs. III)	0.039	0.006-0.243	0.001
		Heart volume (ml) ( $\leq 592$ vs. $> 592$ )	0.651	0.381-1.111	0.116
		Chemotherapy regimen (F vs. NF)	0.243	0.099-0.598	0.002
		PTV prescribed to 36 Gy (ml) (continuous)	0.998	0.996-0.999	0.011
		PTV prescribed to 50 Gy (ml) (continuous)	1.003	1.001-1.004	0.002
		<b>Heart V40 (%) (continuous)</b>	1.012	1.002-1.023	0.019
		<b>Lung V30 (%) (continuous)</b>	1.043	0.982-1.107	0.172
Model	Heart V40/ Lung V40	Body mass index (kg/m <sup>2</sup> ) ( $\leq 21.3$ vs. $> 21.3$ )	1.446	0.751-2.784	0.270
		Body surface area (m <sup>2</sup> ) ( $\leq 1.65$ vs. $> 1.65$ )	1.459	0.751-2.836	0.265
		ECOG performance status (0–1 vs. 2–3)	0.234	0.117-0.470	0.000
		Stage (I&II vs. III)	0.040	0.006-0.245	0.001
		Heart volume (ml) ( $\leq 592$ vs. $> 592$ )	0.657	0.384-1.126	0.127
		Chemotherapy regimen (F vs. NF)	0.265	0.109-0.642	0.003
		PTV prescribed to 36 Gy (ml) (continuous)	0.998	0.996-1.000	0.015
		PTV prescribed to 50 Gy (ml) (continuous)	1.003	1.001-1.004	0.003
		<b>Heart V40 (%) (continuous)</b>	1.013	1.002-1.023	0.017
		<b>Lung V40 (%) (continuous)</b>	1.042	0.973-1.116	0.235

Abbreviations: *ECOG* Eastern Cooperative Oncology Group, *F* fluoropyrimidine-based, *NF* not fluoropyrimidine-based, *PTV* planning target volume, *V<sub>x</sub>* percentage of the heart volume receiving more than x gray