

APPENDIX 2 (as supplied by the authors): GEE Analysis to assess factors associated with permanent colostomy

Explanatory variable	Odds Ratio	95% CI	<i>P</i> value
Experimental group	0.70	0.38 – 1.30	0.26
Male	1.46	1.07 – 1.98	0.02
Age, 10y	1.31	1.13 – 1.52	< 0.001
Co-morbidities			
≥2	2.06	1.17 – 3.61	0.01
1	1.08	0.65 – 1.79	0.77
Tumour size, cm	1.12	0.99 – 1.28	0.08
TNM stage			
Stage 4	1.52	0.87 – 2.67	0.14
Stage 3	0.93	0.58 – 1.50	0.77
Stage 2	1.16	0.77 – 1.77	0.47
Histologic grade			
Well	0.76	0.35 – 1.62	0.47
Moderate	0.78	0.45 – 1.36	0.38
Vascular, lymphatic, or neural invasion	1.17	0.74 – 1.83	0.49
Distance of tumour from anal verge, cm	0.72	0.98 – 0.76	< 0.001
Positive circumferential radial margin	3.00	1.57 – 5.72	< 0.001
Preoperative use of radiation	1.83	1.27 – 2.64	< 0.01

GEE model with multiple imputation (10 sets), considered clustering of data at hospital level. Mean ICC across 10 models = 0.0328.

Reference comparisons were control group, female sex, no comorbidities, TNM Stage 1, poor tumour differentiation, no vascular, lymphatic, or neural invasion, negative circumferential radial margin, and no preoperative use of radiation. Odds ratios for age, tumour size, and distance of tumour from anal verge are for 10-year increases, 1 cm increases, and 1 cm increases, respectively.