

Supplementary Materials: Impact of Radiotherapy on Kidney Function among Patients Who Received Adjuvant Treatment for Gastric Cancer: Logistic and Linear Regression Analyses

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Table S1. Characteristics of 13 patients whose 5-year estimated glomerular filtration rate was below 60 mL/min/1.73 m²

eGFR (mL/min/1.73 m ²)								Kidney	
Baseline	5-year	Sex	Age	Hypertension	Diabetes	Chemotherapy	Radiotherapy	V _{20Gy}	D _{mean}
65.0	59.6	M	71	N	N	XP	N	NA	NA
95.7	56.7	F	59	N	N	XP	N	NA	NA
68.0	56.6	M	74	N	N	TS-1	N	NA	NA
64.4	52.8	M	77	Y	Y	TS-1	N	NA	NA
70.0	48.8	M	70	Y	Y	TS-1	N	NA	NA
68.1	59.9	M	66	Y	N	XP	Y	NA	NA
81.8	54.4	M	51	N	N	5-FU	Y	4.1%	4.9 Gy
66.7	54.3	F	62	Y	N	5-FU	Y	13.8%	8.2 Gy
68.4	50.7	M	55	N	N	XP	Y	NA	NA
93.8	50.0	F	51	N	N	XP	Y	NA	NA
63.1	44.8	F	54	Y	N	5-FU	Y	11.8%	6.5 Gy
91.2	30.6	M	64	N	Y	XP	Y	NA	NA
72.4	25.7	F	62	Y	Y	5-FU	Y	19.2%	9.8 Gy

eGFR, estimated glomerular filtration rate; XP capecitabine and cisplatin; NA, not available; 5-FU, 5-fluorouracil; V_{20Gy}, volume receiving 20 Gy or higher; D_{mean}, average radiation dose received by specific organ

Table S2. Logistic regression analyses to predict a decrease of 10% or more in estimated glomerular filtration rate.

Variable	Univariate			Multivariate		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
All patients (N = 663)						
Age (continuous)	1.012	0.996-1.029	0.141	1.048	1.025-1.071	< 0.001
Sex (female)	0.886	0.617-1.271	0.511			
Hypertension	1.345	0.829-2.184	0.230			
Diabetes	1.031	0.584-1.821	0.917			
Cisplatin	1.237	0.845-1.810	0.274			
Radiotherapy	1.348	0.942-1.930	0.103	1.557	1.069-2.268	0.021
Baseline eGFR (continuous)	1.022	1.007-1.037	0.004	1.046	1.026-1.066	<0.001
Patients who received radiotherapy and whose DVH data was available (n = 287)						
Age (continuous)	1.020	0.993-1.048	0.156			
Sex (female)	1.733	1.026-2.928	0.040			
Hypertension	1.782	0.795-3.993	0.161			
Diabetes	2.259	0.898-5.678	0.083	2.723	1.055-7.026	0.038
Baseline eGFR (continuous)	1.020	0.999-1.042	0.066			
Kidney V _{5Gy} (continuous)	1.023	0.997-1.051	0.082			
Kidney V _{20Gy} (continuous)	1.071	1.027-1.118	0.002	1.077	1.031-1.124	0.001
Kidney D _{mean} (continuous)	1.002	1.001-1.003	0.004			

OR, odds ratio; CI, confidence interval; eGFR, estimated glomerular filtration rate; DVH, dose-volume histogram; V_{5Gy}, volume receiving 5 Gy or higher; V_{20Gy}, volume receiving 20 Gy or higher; D_{mean}, average radiation dose received by specific organ

Table S3. Comparison of the protocols of three randomized controlled trials.

Trial	Intervention	Chemotherapy regimen	Radiation therapy	Radiation dose
ARTIST	Adjuvant CTx <i>vs.</i> CCRT	Capecitabine and cisplatin	Y/N (1:1)	45 Gy/25 fractions
ACTS-GC	Adjuvant CTx <i>vs.</i> observation	TS-1	N	
INT-0116	Adjuvant CCRT <i>vs.</i> observation	5-fluorouracil	Y	45 Gy/25 fractions

ARTIST, Adjuvant Chemoradiation Therapy in Stomach Cancer; CTx, chemotherapy; CCRT, concurrent chemoradiation therapy; ACTS-GC, Adjuvant Chemotherapy Trial of TS-1 for Gastric Cancer; INT, Intergroup

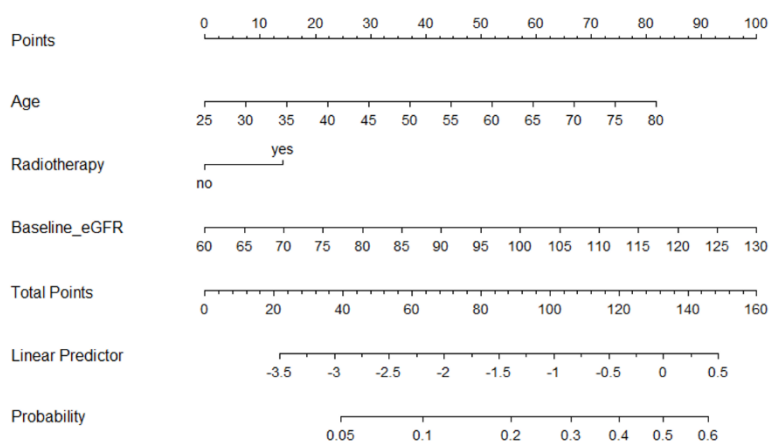
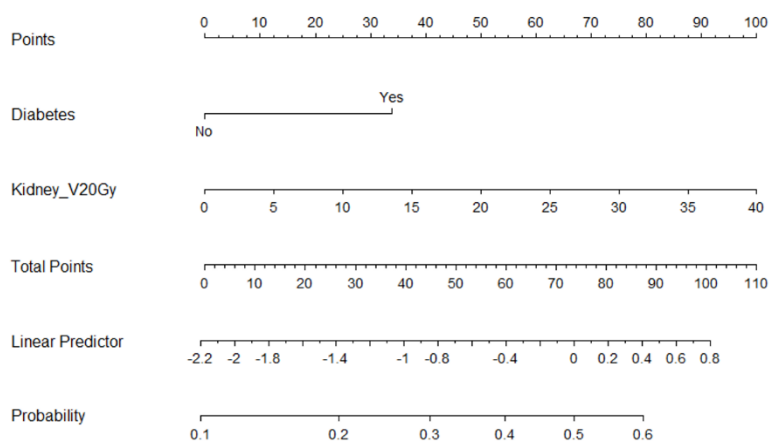
A. All Patients (N = 663)**B. Patients who received radiotherapy and whose DVH was available (n = 287)**

Figure S1. Nomograms for predicting a decrease of 10% or more in estimated glomerular filtration rate in all patients (1A) and in patients who received radiotherapy and whose DVH was available (*n* = 297).

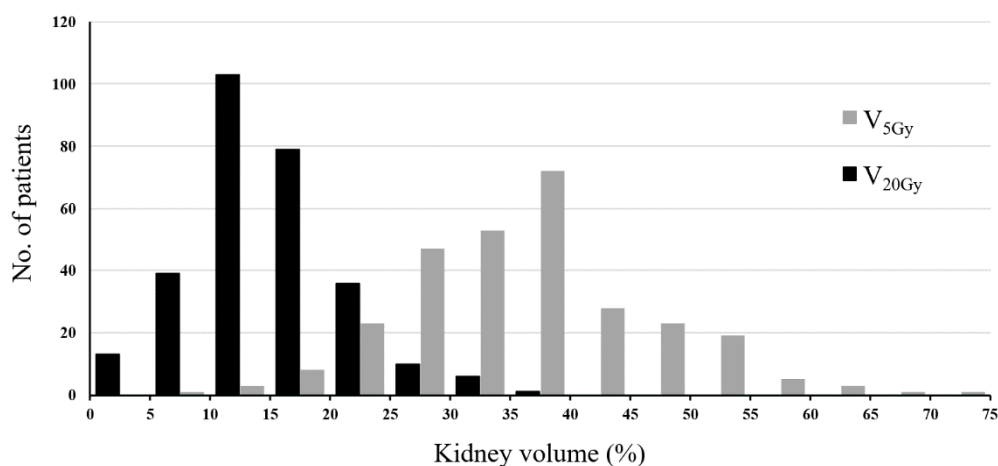


Figure S2. Histograms of the volume of kidney receiving ≥ 5 Gy (V_{5Gy}) and ≥ 20 Gy (V_{20Gy}).

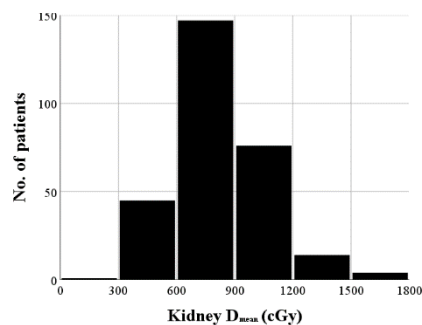


Figure S3. Histogram of mean radiation dose (D_{mean}) to kidney.



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