

# Supplementary Material

## Title: Effect Of Prior Malignancy On The Prognosis of Gastric Cancer and Somatic Mutation

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**Supplemental Table 1. Median time from the diagnosis of prior cancer to the diagnosis of gastric cancer**

<b>Prior cancer type</b>	<b>Number</b>	<b>Median time* (Months)</b>
All sites	4001	68
Gastrointestinal cancer	661	64
Prostate cancer	1,296	66
Hematologic cancer	291	68
Breast cancer	539	78
Genitourinary cancer	602	78
Lung cancer	205	50
Other cancer	407	67

\*Median time between prior cancer and the index gastric cancer.

**Supplemental Table 2. Survival outcomes and cause of death stratified by age and stage**

<b>Prior initial cancer site</b>	<b>Overall (%)</b>	<b>Age &lt;65y (%)</b>	<b>Age ≥65y (%)</b>	<b>Localized (%)</b>	<b>Regional (%)</b>	<b>Distant (%)</b>
<b>No prior cancer</b>						
Alive	5,899 (18.73)	3,047 (23.15)	2,852 (15.56)	2,940 (40.78)	2,023 (22.53)	635 (5.03)
Dead	25,592 (81.26)	10,113 (76.84)	15,479 (84.44)	4,269 (59.21)	6,955 (77.46)	11,980 (94.96)
Cause of Death						
stomach cancer	22,223 (86.83)	9,305 (92.01)	12,918 (83.46)	2,982 (69.85)	5,998 (86.24)	11,300 (94.32)
Other causes	3,369 (13.16)	808 (7.99)	2,561 (16.54)	1,287 (30.15)	957 (13.76)	680 (5.68)
<b>With prior cancer</b>						
Alive	588 (14.71)	150 (21.03)	438 (13.35)	363 (30.50)	180 (17.16)	26 (2.10)
Dead	3,407 (85.28)	563 (78.96)	2,844 (86.65)	827 (69.50)	869 (832.84)	1,212 (97.90)
Cause of Death						
stomach cancer	2,353 (69.06)	364 (64.65)	1,989 (69.94)	439 (53.08)	632 (72.72)	983 (81.11)
Prior cancer	544 (15.97)	147 (26.11)	397 (13.96)	165 (19.95)	113 (13.00)	148 (12.21)
Other causes	510 (14.97)	52 (9.24)	458 (16.10)	223 (26.96)	124 (14.27)	81 (6.68)

**Supplemental Table 3. Stomach cancer-specific 3-year survival rate of patients stratified by age**

Prior initial cancer site	Stomach cancer-specific survival (95%CI)		
	Overall	Age <65 years (%)	Age ≥65 years (%)
<b>No prior cancer</b>	30.91 (30.34, 31.47)	31.63 (30.78, 32.49)	30.39 (29.64, 31.15)
<b>With prior cancer</b>	38.03 (36.27, 39.79)	45.41 (41.20, 49.51)	36.33 (34.40, 38.27)
Prostate	44.72 (40.03, 49.29)	49.99 (38.59, 60.36)	43.27 (38.10, 48.32)
Gastrointestinal	34.92 (31.99, 37.87)	36.36 (26.95, 45.81)	34.78 (31.69, 37.88)
Hematologic	40.11 (33.60, 46.53)	54.67 (42.21, 65.53)	33.55 (26.07, 41.18)
Breast	41.46 (36.50, 46.34)	52.58 (42.71, 61.53)	37.35 (31.66, 43.02)
Genitourinary	34.27 (29.92, 38.66)	46.90 (36.47, 56.65)	31.09 (26.36, 35.93)
Lung	33.45 (25.54, 41.54)	21.15 (8.06, 38.36)	36.70 (27.65, 45.76)
Other	39.77 (34.12, 45.35)	38.70 (27.78, 49.48)	40.16 (33.58, 46.63)

Abbreviation: CI, confidence interval.

**Supplemental Table 4. Multivariable Cox regression analysis of overall survival in stomach cancer patients stratified by initial prior cancer site.**

<b>Characteristics</b>	<b>All-cause adjusted HR (CI)</b>	<b>P</b>	<b>Cancer-specific adjusted HR (CI)</b>	<b>P</b>
<b>Prior cancer site (vs &lt;none)</b>				
Prostate cancer	0.98 (0.90, 1.06)	0.617	0.67 (0.60, 0.75)	<0.001
Gastrointestinal cancer	1.00 (0.94, 1.07)	0.928	0.91 (0.85, 0.98)	0.011
Hematologic cancer	1.02 (0.90, 1.16)	0.769	0.85 (0.73, 0.99)	0.042
Breast cancer	0.89 (0.81, 0.98)	0.014	0.66 (0.59, 0.75)	<0.001
Genitourinary cancer	1.05 (0.96, 1.15)	0.252	0.91 (0.82, 1.01)	0.065
Other cancer	1.35 (1.17, 1.56)	<0.001	0.99 (0.83, 1.19)	0.954
Lung cancer	1.05 (0.95, 1.17)	0.346	0.78 (0.68, 0.89)	<0.001

Abbreviation: HR, hazard ratio; CI, confidence interval.

Adjusted for age, race, gender, marital status, grade, stage, size, radiation, surgery, chemotherapy.