Survival for intestinal type gastric cancer patients treated with surgery in the public health system in the Southeast region of Brazil, 2000-2022

Rossana VM López[1]; Maria AAK Folgueira[2]; Evandro S de Mello[3]; Adeylson G Ribeiro[4]; Marcela A Fagundes[4]; Edia FDT Lopes[5]; Tatiana N Toporcov[6]; Victor Wünsch-Filho[4]; Ulysses Ribeiro-Júnior[2]

[1] Centro de Investigação Translacional em Oncologia, Comprehensive Center for Precision Oncology C2PO, Instituto do Câncer do Estado de São Paulo, São Paulo, Brasil
[2] Faculdade de Medicina da Universidade de São Paulo, São Brasil
[3] Departamento de Patologia, Instituto do Câncer do Estado de São Paulo, São Paulo, Brasil
[4] Fundação Oncocentro de São Paulo, São Paulo, Brasil
[5] Registro Hospitalar de Câncer, Instituto do Câncer do Estado de São Paulo
[6] Faculdade de Saúde Pública, Universidade de São Paulo

INTRODUCTION

In Brazil, gastric cancer remains a major public health concern due to late-stage diagnosis. We evaluated the impact of surgical treatment on overall survival (OS) in patients treated within the public health system of São Paulo state during the period of 2000 and 2022.

METHODS

Data were obtained from the Hospital-Based Cancer Registry of Fundação Oncocentro de São Paulo (SISRHC-FOSP), including patients diagnosed between 2000 and 2022, follow-up until 2025. São Paulo state host 46 millions inhabitants and has a well-established public oncology network that contribute with data to SISRHC-FOSP. Approximately, 75% of Brazilians rely exclusively on the public health system (SUS). OS was calculated from diagnosis to death or last follow-up. Propensity score matching (PSM) was applied using age (<40 y vs. 40-59 y vs. 60 y or older), clinical stage (CS I/II vs. III/IV), and period of diagnosis (2000-2009 vs. 2010-2022). Cox regression estimated hazard ratios (HR) and 95% confidence intervals (95% CI). Level of significance was 5%. Data analysis were performed using RStudio and SPSS for Windows v.25. This study is part of Project ConeCta-SP (Controle do Câncer do Estado de São Paulo)

RESULTS

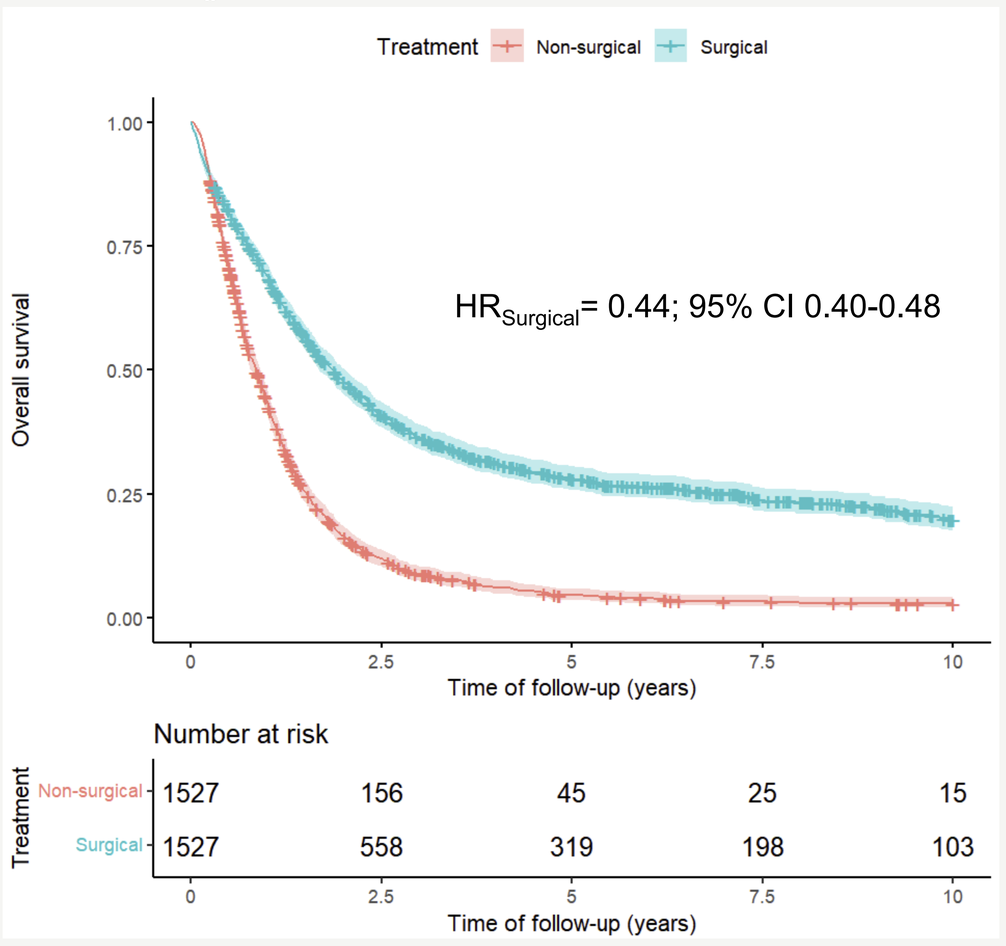
After PSM, 3,054 patients were included (1,527 per group, surgical vs. non-surgical). Most were male (72.8%), aged ≥60 years (75.3%), with low educational level, and diagnosed at clinical stage (CS) III/IV (84.9%) (Table 1). Median OS was 10.2 months (non-surgical) and 15.2 months (surgical). Surgery was associated with a 56% reduction in mortality risk (95% CI: 0.40-0.48) (Figure 1).

Funding
Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP). Process 2021/11794-4.

Table 1. Characteristics of patients with intestinal type gastric cancer, São Paulo, Brazil, 2000-2022

Characteristic		Treatment: Non-surgical n = 1,527	Treatment: Surgical n = 1,527
Age	<40 yrs	45 (2.9%)	107 (7.0%)
	40-59 yrs	414 (27.1%)	189 (12.4%)
	60 or more yrs	1068 (69.9%)	1231 (80.6%)
Clinical stage	I-II	231 (15.1%)	231 (15.1%)
	III-IV	1296 (84.9%)	1296 (84.9%)
Period of diagnosis	2000-2009	392 (25.7%)	392 (25.7%)
	2010-2022	1135 (74.3%)	1135 (74.3%)
Sex	Male	1121 (73.4%)	1101 (72.1%)
	Female	406 (26.6%)	426 (27.9%)
Education	Illiterate	138 (11.7%)	148 (11.8%)
	Incomplete basic	578 (48.9%)	686 (54.7%)
	Complete basic	253 (21.4%)	229 (18.3%)
	High school	148 (12.5%)	129 (10.3%)
	College	65 (5.5%)	61 (4.9%)
Region of birth	North	15 (1.0%)	6 (0.4%)
	Northeast	254 (17.5%)	235 (16.0%)
	Midwest	22 (1.5%)	18 (1.2%)
	Southeast	1098 (75.5%)	1133 (77.3%)
	South	51 (3.5%)	51 (3.5%)
	Other country	14 (1.0%)	22 (1.5%)
Cardia vs. Non-cardia	Cardia	270 (17.7%)	149 (9.8%)
	Non-cardia	1257 (82.3%)	1378 (90.2%)

Figure 1. Overall survival of patients with intestinal type gastric cancer according treatment, São Paulo, Brazil, 2000-2022



CONCLUSIONS

In this cohort of patients mainly with advanced disease, 10 months of survival in the non-surgical group is consistent with inoperable metastatic disease or contraindication due poor performance status or comorbidities, while 15 months, for surgical group, may reflect selection of patients with better performance status and a possible effect of multimodal treatment. Limitations to the study include the retrospective design and temporal changes in staging and treatment.