Comparison of survival and prognostic factors in patients with gastric adenocarcinoma in T2 and T3

Comparação da sobrevivência e dos fatores prognósticos em pacientes com adenocarcinoma gástrico T2 e T3

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A B S T R A C T

Objective: To compare the survival and prognosis after surgical treatment of patients with gastric adenocarcinoma which extends to the muscular layer (T2), and patients whose tumor invades the subserosa (T3). **Methods**: This was a retrospective study of 122 patients with gastric cancer invading the muscularis propria and subserosa, undergoing surgical treatment from January 1997 to December 2008 and followed-up until December 2010. We analyzed demographic, surgical and pathological variables. **Results**: Of the 122 patients, 22 (18%) were excluded from the final analysis because they showed: positive margin or less than 15 lymph nodes in the surgical specimen, early postoperative mortality and second primary tumors. Among the 100 patients included, 75 had tumors inveding the muscularis propria (T2) and 25 with extension to the subserosa (T3). Overall survival was 83.8%, and 90.6% for T2 and 52.1% or T3. Univariate analysis showed statistical significance in: lymph node metastasis (p = 0.02), tumor size (p = 0.000), tumor pathological stage (p = 0.000), lymph node pathologic stage (p = 0.000) and staging by classification of groups TNM-UICC/AJCC, 2010 (p = 0.000). In multivariate analysis, independent prognostic factors were tumor size and lymph node pathological staging (pN). **Conclusion**: The lymph node status and tumor size are independent prognostic factors in tumors with invasion of the muscularis propria and in tumors with invasion of subserosa. T2 lesions have smaller size, lower rate of lymph node metastasis and therefore better prognosis than T3.

Key words: Prognosis. Neoplasms. Stomach neoplasms. Adenocarcinoma. Survival rate.

INTRODUCTION

The incidence of gastric cancer (GC) is decreasing worldwide since 1950. However, its aggressiveness, malignancy and, consequently, its prognosis remains unchanged, representing the second leading cause of cancer death, with 628,000 (12.1%) deaths per year[1]. In Brazil, according to the National Cancer Institute[2] (INCA), the estimated incidence of GC for the year 2011 pointed to 21,500 new cases of the disease, 13,820 being in men (64.3%) and 7,680 in women (35, 7%), corresponding to an estimated risk of 14 new cases per 100,000 men and eight for every 100,000 women, consolidating its position as the fifth malignant tumor in incidence, the second of the gastrointestinal tract.

Gastric adenocarcinoma (GA) is the most common histological type (95%), originating in the epithelium of the gastric mucosa and progressively involving the entire stomach wall to reach the serosa and adjacent structures. Surgical treatment remains the only curative treatment modality[3,4] and the extent of resection depends on pre and intraoperative localization of the tumor, the degree of penetration of the tumor in the stomach wall, invasion of adjacent organs and lymph node metastasis[5,6].

The identification of prognostic factors in GA is important to establish the staging and determining therapeutic strategies. The tumor that invades the mucosa and submucosa layers (T1), independent of lymph node status, is classified as early gastric cancer (EGC), with five-year survival of 93.5% of operated patients, 72.8% being in those with positive nodes and 95.6% for those with no lymph node metastases. When the tumor goes beyond the submucosal layer and invades the muscularis propria (T2), it is classified as advanced gastric cancer (AGC), but it is considered an intermediate stage of tumor progression between the AGC and EGC, with better prognosis and survival in five years[7-14]. This category (T2),

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infrequent, represents 8% to 18% of resected GCs in Japan[13].

The TNM classification of the 2010 American Joint Committee on Cancer (AJCC) establishes criteria for staging based on tumor invasion of the gastric wall, lymph node invasion and distant metastases. Tumors are grouped into categories according to the stomach wall invasion (T), number of positive lymph nodes (N) and presence of distant metastases (M). In 1998, the College of American Pathologists recommended the subclassification of T2 into T2a " invasion of the muscularis propria, and T2b " invasion of the subserosa, to allow for better prognostic and survival evaluation in these patients[15]. In the beginning of this study, we used the sixth edition of the classification TNM-UICC/AJCC[16], which defined this subdivision, recommended by the College of American Pathologists for T2, however, with no change in the staging of the groups that include T2 lesions (stages IB, II and IIIA), ie pT2aN0 and pT2bN0 stage I and pT2aN1 and pT2bN1 stage II. Only lymph node commitment determined the change of stage[16].

In 2010 the seventh edition of the classification TNM-UICC/AJCC[17] was published, which separated tumors restricted to the muscularis propria and those invading the subserosa, T2 and T3, respectively, into different categories and stages. The T2a remains in the T2 category and T2b passes to category T3. The nodal pathologic stage (pN) was also modified, N1 comprising one to two lymph nodes, N2 three to six, N3a seven to 15 and N3b 16 or more lymph nodes. In staging by groups, categories T2 and T3 were separated, T2N0 becoming stage IB, T3N0 and T2N1 stage IIA, T3N1 and T2N2 stage IIB, T3N2 and T2N3 stage IIIA and T3N3 stage IIIB. This current classification excludes tumors of the esophagogastric junction (EGJ) or that originate in the stomach less than 5cm to the EGJ and invade it. These tumors, of poor prognosis, are now staged as esophageal adenocarcinomas[17]. This separation of T2 and T3 in different groups of patients confirms that T2 GC has a different prognosis from T3. The identification of prognostic factors related to T2 is important because, in this intermediate stage, the cancer may be curable with an appropriate surgical procedure that includes D2 lymphadenectomy.

There are few published studies evaluating the prognostic factors in patients with T2[8,10,13,14]. Several studies suggest a favorable prognosis for survival with T2 in five years, close to T1[8,18-21]. Other series report that the subclassification of T2 (T2/T3) has no value in the presence of metastatic lymph nodes, since these latter are the determinants of prognosis[10,22].

This study aims to compare survival and prognosis of patients with T2 and T3 gastric adenocarcinoma after surgical treatment.

METHODS

We studied 122 patients with GA, with invasion of the muscularis propria (T2) and invasion of subserosa (T3). All patients were treated at the Department of Abdominopelvic Surgery, Cancer Hospital I, INCA, between January 1997 and December 2008, and followed up until December 2010. The study was approved by the Ethics in Research Committee of the National Cancer Institute, registration number 69/2009, and of the Federal University of São Paulo under the record 1484/2009.

Of the 122 patients, 22 were excluded from the final analysis: one due to margins compromised by neoplasia in the final histopathology (0.8%); four died in the first 30 postoperative days (3.2%); four had a second primary tumor (3.2%); and 13 had fewer than 15 resected lymph nodes (10.6%).

Of the 100 patients included, 75 had tumors with invasion of the muscularis propria (T2), and 25, with invasion of subserosa (T3), according to the seventh edition of the classification TNM-UICC/AJCC, 2010[17]. The radical surgical treatment followed the criteria of the Japanese Gastric Cancer Association (JGCA)[5] according to tumor site. A subtotal gastrectomy (STG) was performed in tumors of the distal stomach, and a total gastrectomy (TG) in tumors of the proximal third. Tumors in the middle third underwent STG or GT depending on the distance from the proximal edge of the tumor to the GEJ.

Lymphadenectomy was performed based on the location of the tumor in the stomach, including the lymph nodes of level I and / or II, according to the report of the surgeon and the criteria of the Japanese classification[5], being considered adequate the sampling of at least 15 resected lymph nodes. The resection was considered curative (R0) in the absence of macroscopic or microscopic residual tumor, with margins, proximal and distal, free of neoplasia at pathology exam during surgery, and in the absence of distant disease[6].

The demographic variables studied were age and gender. Patients were divided into two age groups, with 60 years or less and more than 60 years, determined by the median and average age.

Variables included the type of surgical gastrectomy, total or subtotal, and the extent of lymphadenectomy performed, level 1 (D1) and level 1 and 2 (D2), described by the surgeon.

The macroscopic pathologic variables analyzed according to the mean and median found were tumor size (d" 5 cm or> 5 cm) and the number of lymph nodes resected (d" 33 lymph nodes and> 33 lymph nodes). The macroscopic appearance of tumors was analyzed according to the classification of Borrmann[23] for AGC, including the zero category according to the Japanese classification for EGC (JGCA)[5], when the macroscopic appearance of tumors suggested early disease. The location in the stomach

(proximal, medium and distal third) was based on the JGCA Japanese classification[5].

The microscopic pathologic variables included extension of tumor invasion in the gastric wall, whether the muscularis propria or the subserosa, the degree of cellular differentiation according to the classification of Broders[24], moderately and well differentiated vs. poorly differentiated, and the presence or absence of venous, lymphatic and neural invasion and the presence or absence of lymph node compromised, the number of lymph nodes involved by neoplasia and grouping by stages, according to the seventh edition of the TNM-UICC/AJCC classification[17].

Statistical Analysis

The data obtained were analyzed using: 1) descriptive analysis, by the distribution of frequencies and simple percentages, medians, averages, standard deviations (SD) and confidence intervals (CI); 2) Fisher's exact test, two-tailed mode; 3) Kaplan-Meier method for survival analysis, applying the Log Rank test to compare survival curves. Non-cancer deaths were not censored; 4) Cox Proportional Hazards method for multivariate analysis of prognostic factors, Harzard ratio by Z test; and 5) the significance level of 5% probability. The variables without significance were marked with the initials NS.

RESULTS

The estimated overall survival at five years was 81.8%, with a mean follow-up of 124 ± 6.3 months (95% CI, 111-136 months), and can be seen in figure 1.

The mean and median age was 60 years (25 to 78 years in T2 and 42 to 83 years in T3). Regarding gender, there was equivalence: 53% were male and 47% female. In males the fifth decade of life predominated. Age (p = 0.78) and sex (p = 0.48) did not influence the prognosis of patients.

STG was performed in 74% (59% in T2 and 15% in T3) and GT in 26% (16% in T2 and 10% in T3). Seventeen patients underwent D1 lymphadenectomy, and in all more than 15 lymph nodes were found in the surgical specimen. As for prognosis, the variables type of operation and extent of lymphadenectomy did not interfere significantly in five-year survival.

The macroscopic pathologic variables studied were location, macroscopic aspect, tumor size and number of lymph nodes resected. There was significant difference in the prognosis of patients classified as T2 and T3 only in relation to tumor size d" 5 cm and> 5 cm (p = 0.00).

Tumors were located in the distal third of the stomach in 57% of patients, in the middle third in 31% and in the proximal third on 12%. The average number of lymph nodes resected was 33, ranging from 15 to 75 lymph nodes. The mean and median tumor size was 5 cm. Patients with tumors d" 5cm showed five-year survival of 94.6%, and > 5cm, 69% (p = 0.000) (Figure 2). When comparing tumor size and pathologic stage (pT), there were also no significant differences. In pT2 d" 5cm (59%) and> 5cm (41%), survival was 96.5% and 82.1%, respectively (p <0.005). In pT3 d" 5cm (32%) and> 5cm (68%), survival was 80% and 45%, respectively (p <0.005).

As for tumor penetration in the gastric wall (pT), five-year survival was significantly greater in pT2 (90.6%) than in T3 (52.1%) (p = 0.000) (Figure 3).

Lymph node metastases occurred in 52% of patients with five-year surviving of 72.4%, which, when compared to the survival of 90.3% of node-negative patients, was statistically significant (p <0.02). The lymph node pathologic stage – pN " also demonstrated significant differences in patient survival (p = 0.000) (Figure 4). When analyzing pT2 and pT3 tumors, pN also had a significant impact on survival (p <0.001) (Table 1), which also occurred in the staging by TNM-UICC/AJCC [17] groups (p = 0.000).

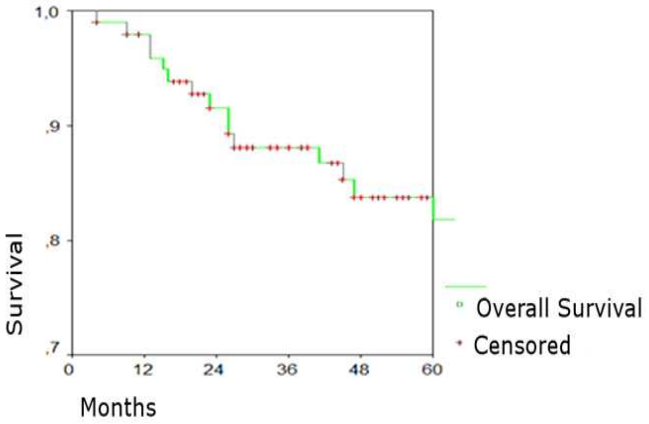

Figure 1 - *Five-year survival curve of the 100 patients with T2 and T3 GA. Kaplan-Meier method.*

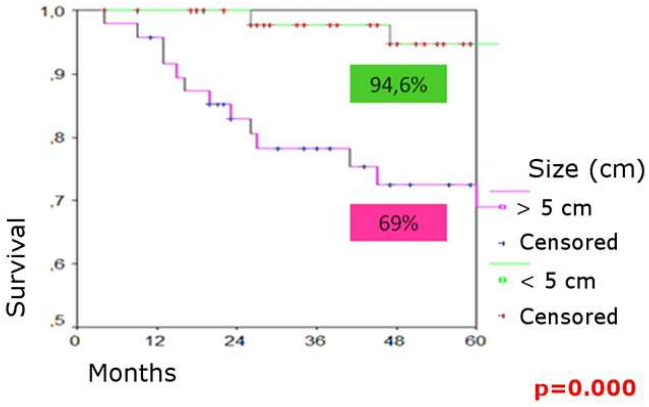

Figure 2 - *Five-year survival curve pursuant to size, demonstrating a significant difference in the prognosis of tumors d" 5cm and> 5cm. (P = 0.000). Kaplan-Meier method.*

The degree of tumor cell differentiation and the presence or absence of venous, lymphatic and nerve infiltration were not significant.

Of the 100 patients studied, 16% had disease recurrence during follow-up, two of whom are still alive, with evidence of disease, one with bone metastases and other metastatic lymph nodes in the hepatic pedicle. Recurrence rate was significantly higher in T3. Of the 75 patients with T2, eight (10.7%) relapsed, six at distance (liver and bone), one in lymph nodes and one in the peritoneum. Eight (32%) patients with T3 had recurrences, five at distance (liver, bones and lungs), one in lymph nodes and two in the peritoneum (p <0.0171). There were 17 (17%) deaths, 14 due to the GC and three from causes unrelated to the tumors. All patients were followed for an average period of 124 months, a minimum of four and a maximum of 152 months.

In univariate analysis (Table 2), prognostic factors associated with survival were tumor size (p = 0.000), tumor invasion in the gastric wall " pT (p = 0.000), presence of lymph node metastasis (p = 0.02), number of positive lymph nodes – pN " (p = 0.000) and group staging by the TNM-UICC/AJCC[17] classification (p = 0.000). Multivariate analysis showed that independent prognostic factors were tumor size (p <0.001) and lymph node involvement (p <0.016) .

DISCUSSION

There are many studies on AGC, but few evaluate the prognostic factors of patients with T2, most of them with a similar sample of this study and controversial results. The greatest sample was the Korean study of Park *et al.*[19], with 442 patients. It is also unclear which of these prognostic factors are relevant in T2[10]. The possible better outcome of T2 raises criticisms towards its classification as AGC. The T2 is considered of intermediate prognosis, between EGC and AGC[7-14].

The identification of prognostic factors related to GC is crucial for prognostic evaluation and decision of the best treatment strategy, surgical and adjuvant.

We found studies that also used the greatest diameter of the tumor to assess its size, with medians of 3.5, 3.6[19] and 4.2cm[21]. Several studies[19,20,22,25] have found significant differences related to tumor size in the univariate analysis. Fotia *et al.*[10] analyzed tumors d" 2 cm, 2 to 4 cm, and> 4cm and found no significant difference in survival at five years. In the present study, tumor size was an independent prognostic factor,

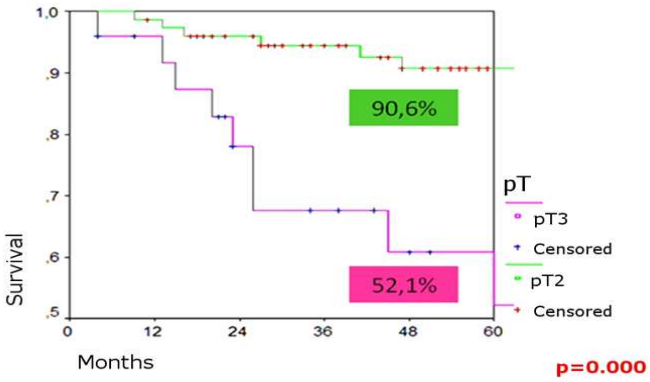

Figure 3 - *Five-year survival curve pursuant to pathological staging of the tumor, demonstrating a significant difference in the patients' prognosis related to pT (p = 0.000). Kaplan-Meier method.*

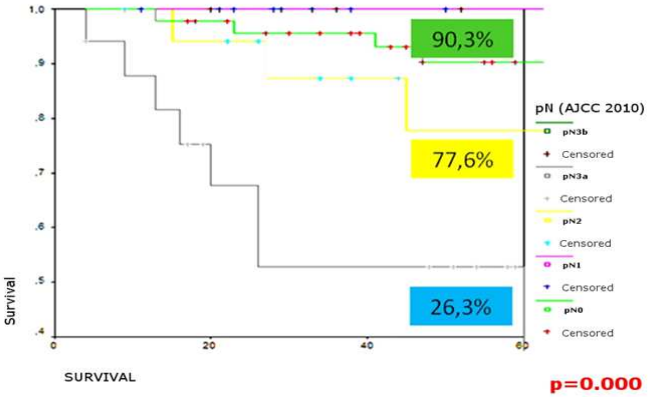

Figure 4 - *Five-year survival curve pursuant to lymph node pathological staging, demonstrating a significant difference in the patients' prognosis related to pN. (P = 0.000). Kaplan-Meier.*

Table 1- . Analysis of pathologic lymph node staging in T2 and T3.

pN	n	pT2 (%)	S %	CI 95%	n	pT3 (%)	S %	IC 95%
pN0	44	58.7	92	126-151	4	16	66.7	29-76
pN1	9	12	alive	-	5	20	live	-
pN2	11	14.7	89	79-111	7	28	62.5	42-85
pN3a	8	10.7	75	36-68	9	38	38.1	18-50
pN3b	3	4.0	alive	-	0	-	-	-
Total	**75**	**100**	**-**	**-**	**25**	**100**	**-**	**-**

Legend: n (number of cases); CI (confidence interval); S (survival estimate).

Table 2 - Univariate Analysis of survival according to the clinical features of the 100 patients with T2 and T3 gastric adenocarcinoma.

Variables	Cases	Deaths	Alive		Months	SD	CI (95%)	S	
			n	%				%	p <
Total	100	17	83	83	124	6.3	111- 136	81.8	-
Age:									
< 60 years	51	8	43	84.3	125	8.7	108- 142	82.1	0.780
> 60 years	49	9	40	81.7	113	7.5	93- 128	81.0	
Gender:									
Female	53	10	43	81.1	112	7.8	96- 127	80.0	0.480
Male	47	7	40	85.1	126	9.2	108- 144	84.0	
Surgery:									
STG	74	13	61	82.4	113	6.3	101- 126	81.2	0.920
TG	26	4	22	84.6	130	10.1	110- 150	83.8	
Borrmann:									
0	29	3	26	89.6	126	7.0	112- 140	88.4	0.290
I	5	2	3	60	67	20.8	26- 108	-	
II	22	5	17	77.2	95	9.03	77- 112	80.0	
III	37	6	31	83.7	117	13.3	91- 143	81.2	
IV	7	1	6	85.7	74	9.1	56- 92	-	
Size:									
< 5 cm	52	2	50	96.1	146	4.1	138- 154	94.6	0.000
> 5 cm	48	15	33	68.7	96	8.8	79- 114	69.0	
Location (third):									
Proximal	12	1	11	91.6	140	11.8	116- 163	91.6	0.720
Medium	31	5	26	83.8	112	11.2	90- 134	84.2	
Distal	57	11	46	80.7	111	6.7	98- 124	78.8	
Thickness:									
< 0.9 cm	55	6	49	89	133	7.8	117- 148	89.2	0.070
> 0.9 cm	45	11	34	75.5	103	8.4	86- 119	72.4	
No lymph nodes:									
< 33	59	10	49	83	125	7.6	110- 140	80.3	0.920
> 33	41	7	34	82.9	92	5.2	82- 103	83.6	
Level difference:									
G1/G2	34	7	27	79.4	97	6.9	83–111	79.9	0.700
G3	66	10	56	84.8	125	8.2	109–141	82.9	
pT invasion:									
T2	75	8	67	89.3	134	6.1	121–146	90.6	0.000
T3	25	9	16	64	63	7.7	48– 79	52.1	
Venous invasion:									
Yes	19	4	15	78.9	75	8.0	60– 91	73.3	0.360
No	81	13	68	83.9	126	6.6	113–139	83.4	
Lymphatic invasion:									
Yes	63	13	50	79.3	106	7.3	91–120	78.1	0.180
No	37	4	33	89.1	136	7.4	122–151	87.4	
Perineural invasion									
Yes	45	10	35	77.7	117	9.5	98–136	78.9	0.330
No	55	7	48	87.2	121	6.1	109–133	84.0	
pN:									
0	48	5	43	89.5	136	6.6	123–149	90.3	0.000
1	14	0	14	100	–	–	– –		
2	18	4	14	77.7	87	8.3	71–104	77.6	
3rd	17	8	9	52.9	41	6.1	29– 53	26.3	
3b	5	0	5	100	–	–	–	–	
Stage:									
Ib	44	4	40	90.9	139	6.3	129–151	92.0	0.000
Iia	13	1	12	92.3	109	8.2	93–125	90.9	
Iib	16	2	14	87.5	97	6.1	85–109	91.6	
IIIa	18	4	14	77.7	67	6.7	54– 80	73.4	
IIIb	9	6	3	33.3	34	8.1	18– 50	0	

Note: the Log-Rank Test; Degrees of freedom (GL).Legend: M (medium); SD (standard deviation); CI (confidence interval); S (estimated five-year survival).

58.7% of T2 being d" 5 cm and 68% of T3 being > 5cm.

The GA invading the muscularis propria has a better prognosis than the tumor invading the subserosa[7,9,11,12,14,19,20,22,25,26], being an independent prognostic factor in several studies[14,19,20 26]. In this study T2 survival was significantly better than that of T3, 90.6% and 52%, respectively. When pT was analyzed with other prognostic variables, such as the presence of lymph node metastasis, tumor invasion in gastric wall was not an independent prognostic factor. Sarela *et al*.[22] also found a significant difference in survival between T2 and T3 (64% vs. 46%, p = 0.005); however, when lymph node staging was adequate, with more than 15 nodes resected, the authors found different results: survival in patients N0 was similar for T2 and T3 (90% vs. 86%, p = 0.8) and in patients with N1, survival was not significantly different from T2 and T3 (56% vs. by 44%, p = 0.3). Fotia *et al*.[10], in a study including patients with less than 15 lymph nodes resected, also found no difference in survival between T2 and T3 (74% vs. 67%, p = 0.2). Park *et al*..[19], however, found a difference between T2 and T3, independent of lymph node involvement, in a study including only patients with more than 15 resected lymph nodes (85% vs. 56%, p <0.001). In the study of Nitti *et al*..[26], pT was an independent prognostic factor, and T2 showed a significantly better prognosis than T3, with five-year survival of 73% and 31%, respectively.

In the present study, lymph node metastases occurred in 52% of patients, with a significant difference in survival, 90.3% and 72.4%, respectively, with positive and negative lymph nodes (p <0.02). Lymph node metastases were more frequent in T3 (84%). Only 16% of patients had node-negative T3. At T2, 59% were node-negative and 41% node-positive. Lymph node involvement was also a prognostic factor in univariate analysis of several studies[8,10,12,19,25]. In the study of Sarela *et al*.[22], two thirds of T3 were associated with lymph node metastasis, as opposed to only half of T2 (p <0.001).

The stratification of patients according to pathological lymph node involvement (pN) also showed a significant difference (p = 0.000). The T3 had the greatest number of metastatic lymph nodes, which was progressively higher in N1 (20%), N2 (28%) and N3 (36%). T2 survival was better than T3, according to pN. In T2N0 survival was 92.6%, and in T3N0, 66.67%. All T2N1 and T3N1 patients were alive at the end of the study. In T2N2 and T3N2, survival was 89% vs. 62.5%, and in T2N3a and T3N3a it was 45% vs. 38%, respectively. T2N3b patients were alive until the end of the study and there were no patients T3N3b. The pN was an independent prognostic factor. In the study of Sarela *et al*..[22], pN3 and pN2 categories accounted for a quarter of T3 and only 3% of T2. Survival in pN0, pN1, pN2 and pN3 was 83%, 44%, 11% and 0%, respectively. The pN was the only independent prognostic factor in that study.

Analysis of the 2010 TNM-UICC/AJCC[17] staging also showed a significant difference in survival at five years, according to the stage groups. Patients stages IB, IIA and IIB, which correspond to T2N0-N2 and T3N0-N1, showed similar survival of 92%, 90.9% and 91.6% respectively, and in stages IIIA and IIIB (T2N3 and T3N1-N3) survival was 73.4% and 0%, respectively. Two studies evaluated the 2010 TNM-UICC/AJCC classification for GC. Ahn *et al*.[28] found better categorization by groups in the seventh edition, mainly related to T2 and T3, N1 and N2. Kim *et al*..[29] also found better separation by staging subgroups, with different prognoses.

Tumors with invasion of the muscularis propria have a better prognosis than tumors invading the subserosa, and this is because the deeper the tumor invasion into the wall of the organ, the higher the rate of metastatic lymph nodes. Sasako *et al*.[30] demonstrated that lymph node involvement was present in 47% of tumors that invade the muscularis propria and in 64% of tumors invading the subserosa.

The stomach has a well-developed lymphatic system and lymphatic spread is the most common. Gastric tumors confined to the muscularis propria have a lower rate of lymph node metastasis, reducing the risk of spread, having a better prognosis than tumors invading the subserosa.

Despite advances in oncology, GC is still a disease with poor prognosis. Nevertheless, in recent years the detection of the disease at early stages, the systematization of radical surgical treatment and onset of adjuvant therapy has increased patients' survival. It is possible that with increased use of endoscopy, the improvement of public health and socioeconomic development of the country, the number of patients with GC restricted to the muscularis propria (T2) becomes greater, effectively improving prognosis and survival.

0In this study, lymph node status and tumor greater than 5 cm in its greatest diameter were the factors that determined the prognosis of patients with gastric cancer that invades the muscularis propria and subserosa. The T2 GA were smaller and displayed lower number of metastatic lymph nodes that T3, which determined the best prognosis and five-year survival of patients with GA invasion of muscular layer of the stomach when compared to those with compromised subserosa.

R E S U M O

Objetivo: *Comparar a sobrevivência e os fatores prognósticos, após o tratamento cirúrgico de pacientes com adenocarcinoma gástrico que compromete a camada muscular própria (T2), e de pacientes cujo tumor invade a subserosa (T3).* ***Métodos:*** *Estudo retrospectivo de 122 pacientes com câncer gástrico invadindo a muscular própria e subserosa, submetidos ao tratamento cirúrgico no período de janeiro de 1997 a dezembro de 2008 e acompanhados até dezembro de 2010. Foram analisadas variáveis demográficas, cirúrgicas e anatomopatológicas.* ***Resultados:*** *Dos 122 pacientes, 22 (18%) foram excluídos da análise final porque apresentaram: margem positiva, mortalidade pós-operatória, segundo tumor primário e menos de 15 linfonodos na peça cirúrgica. Entre os 100 pacientes incluídos, 75 apresentavam tumores com invasão da muscular própria (T2) e 25 com invasão da subserosa (T3). A sobrevivência global foi 83,8%, sendo 90,6% no T2 e 52,1% no T3. Na análise univariada apresentaram significância: metástase linfonodal (p=0,02), tamanho do tumor (p=0,000), estadiamento patológico do tumor (p=0,000), estadiamento patológico linfonodal (p=0,000) e estadiamento por grupos da classificação TNM-UICC/AJCC, 2010 (p=0,000) Na análise multivariada, os fatores prognósticos independentes foram o tamanho do tumor e o estadiamento patológico linfonodal (pN).* ***Conclusão:*** *O comprometimento linfonodal e o tamanho do tumor são fatores prognósticos independentes nos tumores com invasão da muscular própria e nos tumores com invasão da subserosa. O T2 apresenta menor tamanho, menor taxa de linfonodos metastáticos e consequentemente, melhor prognóstico que o T3.*

Descritores*: Prognóstico. Neoplasias. Neoplasias gástricas. Adenocarcinoma. Taxa de sobrevida.*

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