

Prognostic Value of Ratio of Lymph Node Metastasis in Early Gastric Cancer



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Introduction

Early gastric cancer (EGC) is defined as to be confined to the mucosa or submucosa regardless of lymph node status. It has an excellent prognosis with a 5-year survival rate of 91% in female and 88% in male.¹ Some authors defend that the significance of metastatic lymph nodes is defined by its location. The purpose of this study was to clarify the outcome of the ratio of the metastatic lymph nodes (RML) in early gastric cancer.^{1,2}

Methods

Data were collected from 288 patients in whom gastric resection or gastrectomy was carried out for EGC between 1981 and 2006. We searched for lymph node metastases-associated risk factors and tried to identify subsets of patients with different prognosis according to the RML. Histopathological factors were examined by univariate and multivariate analysis for their effect on lymphogenous metastatic spread. Survival rates were calculated from the time of operation by using the Kaplan-Meier product method.

Results

The RML was classified as follows: RML0, 0%; RML1, 0 - 10%; RML2, 10 – 25% and RML3. ≥ 25%.

	5-y survival (%)	X2	P Value	RR	95% CI
Tumor Size		1,73	p=0,62		
< 5cm	88			1	
6 - 10cm	82,7			0,53	0,187233 1,525361
11 - 15cm	100			0,77	0,206855 2,874778
>16cm	80,9			2,57E-05	0 0
Lauren Type		2,07	p=0,55		
Intestinal	88,1			1,00	
Diffuse	93,5			0,75	0,376342 1,505224
No classify	87,5			0,36	0,084552 1,599591
Ming Type		3,11	p=0,53		
Expansive	86,3			1,00	
Infiltrative	90,2			0,78	0,27668 2,239888
Atypical	50			5,45	0,741741 40,09011
Lymphatic invasion		5,32	p=0,25		
L1	89,9			1,00	
L2	86,9			0,6	0,295662 1,165421
Venous invasion		4,28	p=0,36		
V0	91			1,00	
V1	79,3			0,65	0,297641 1,431504
V2	100			1,5	0,671251 3,328073
No. Of positive nodes		7,27	p=0,12		
N0	88,3			1,00	
N1	78,7			1,07	0,372479 3,085596
N2	89,9			2,21	0,757168 6,491097
N3	50			0,87	0,297425 2,546429
Ratio		8,22	p<0,05		
RML0	88,7			1,00	
RML1	90			0,4	0,096599 1,697301
RML2	89,9			0,3	0,030169 3,672165
RML3	50			1,5	0,285243 7,58881

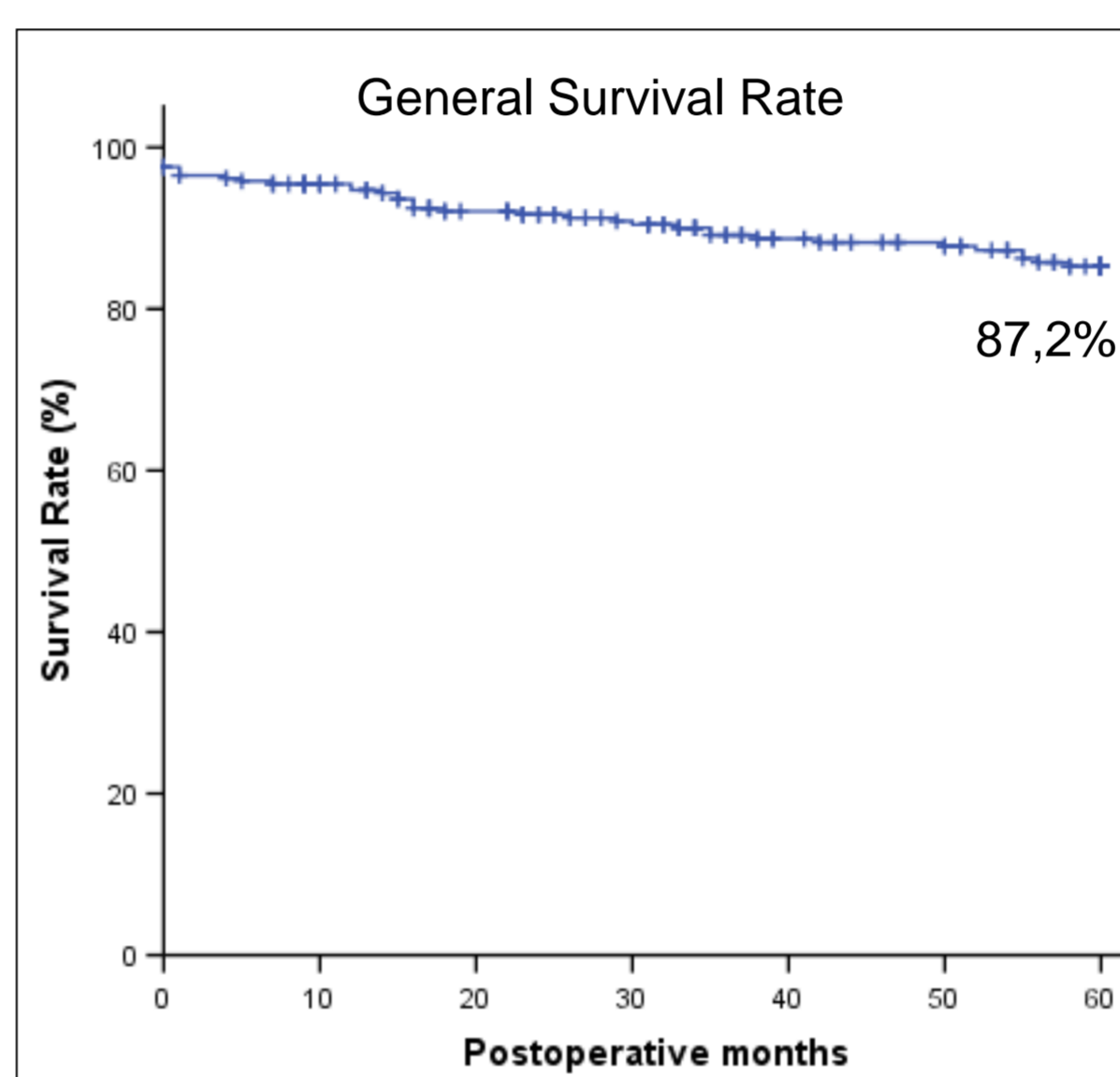
Table 1.

Results of 5-year survival rates of each histopathological variable calculated by univariate analysis. All of factors avaiate did not have prognostic significance with exception of ratio of metastatic lymph nodes (RML).

	X2	P Value	RR	95% CI	
Ratio				Lower	Upper
RML0	8,22	<0,05	1		
RML1	0,037	0,84	0,82	0,111952	6,035584
RML2	7,08	<0,001	3,63	1,404889	9,397612
RML3	1,52	0,21	2,46	0,589171	10,35212

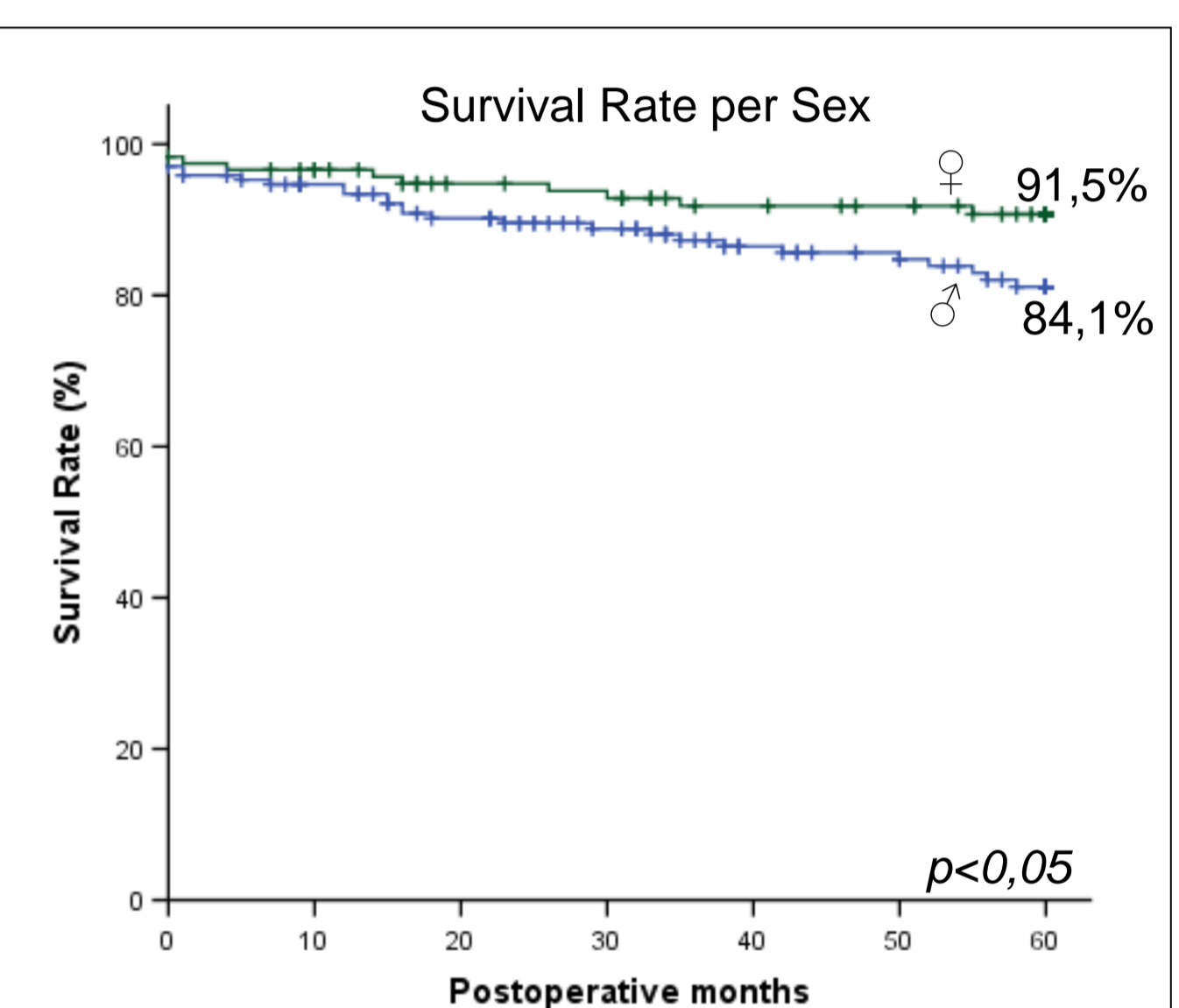
Table 2.

Multivariate analyses using Cox stpwise regression model: all systems of grouping for model involvement were analyzed in the same calculation, revealed that RML was the only prognostic variable (p<0,05). This showed that the ratio of number of metastatic lymph nodes was na independent prognostic factor.



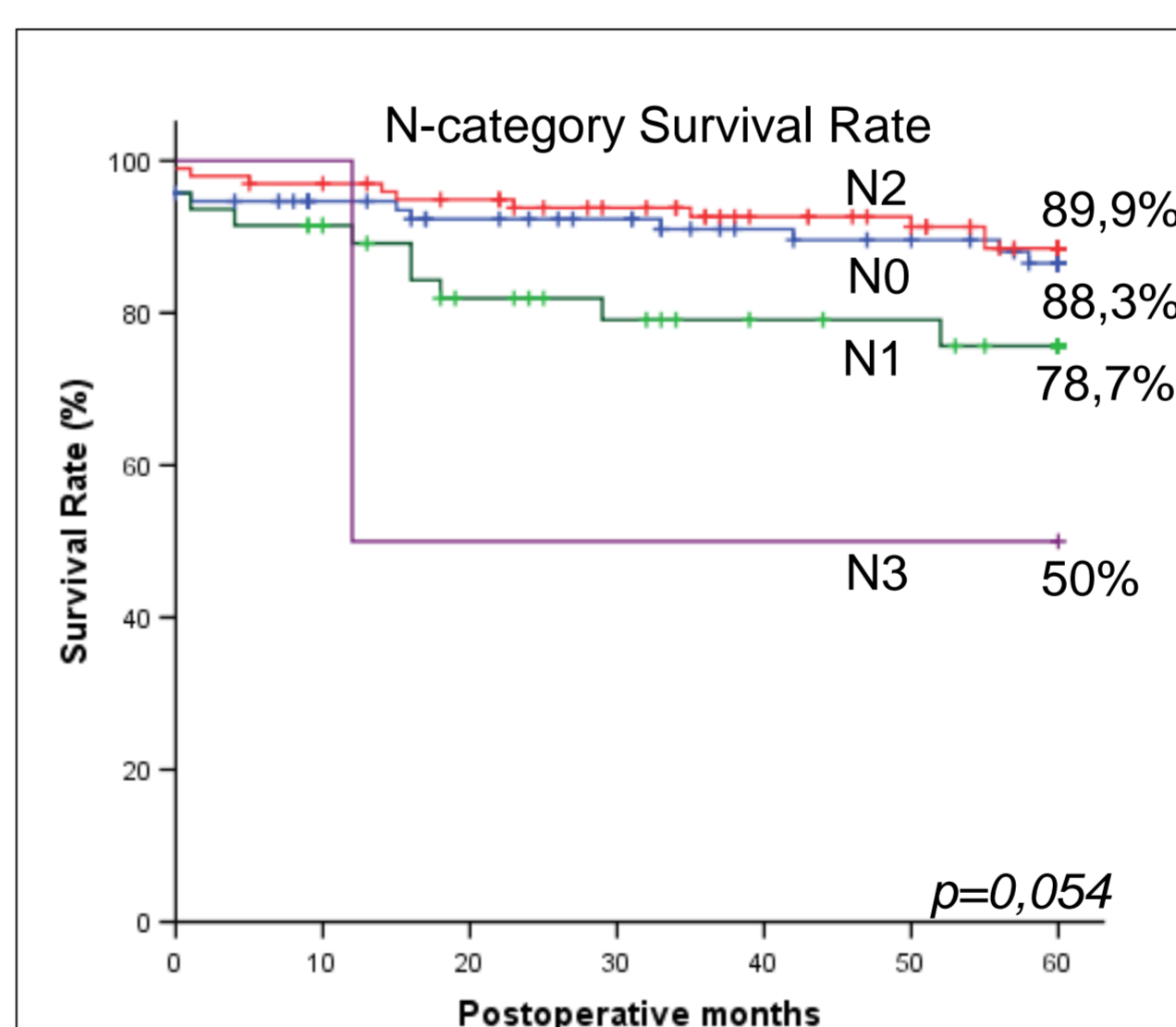
Graph 1.

The survival curve shows that general rate of our sample is 87,2%.



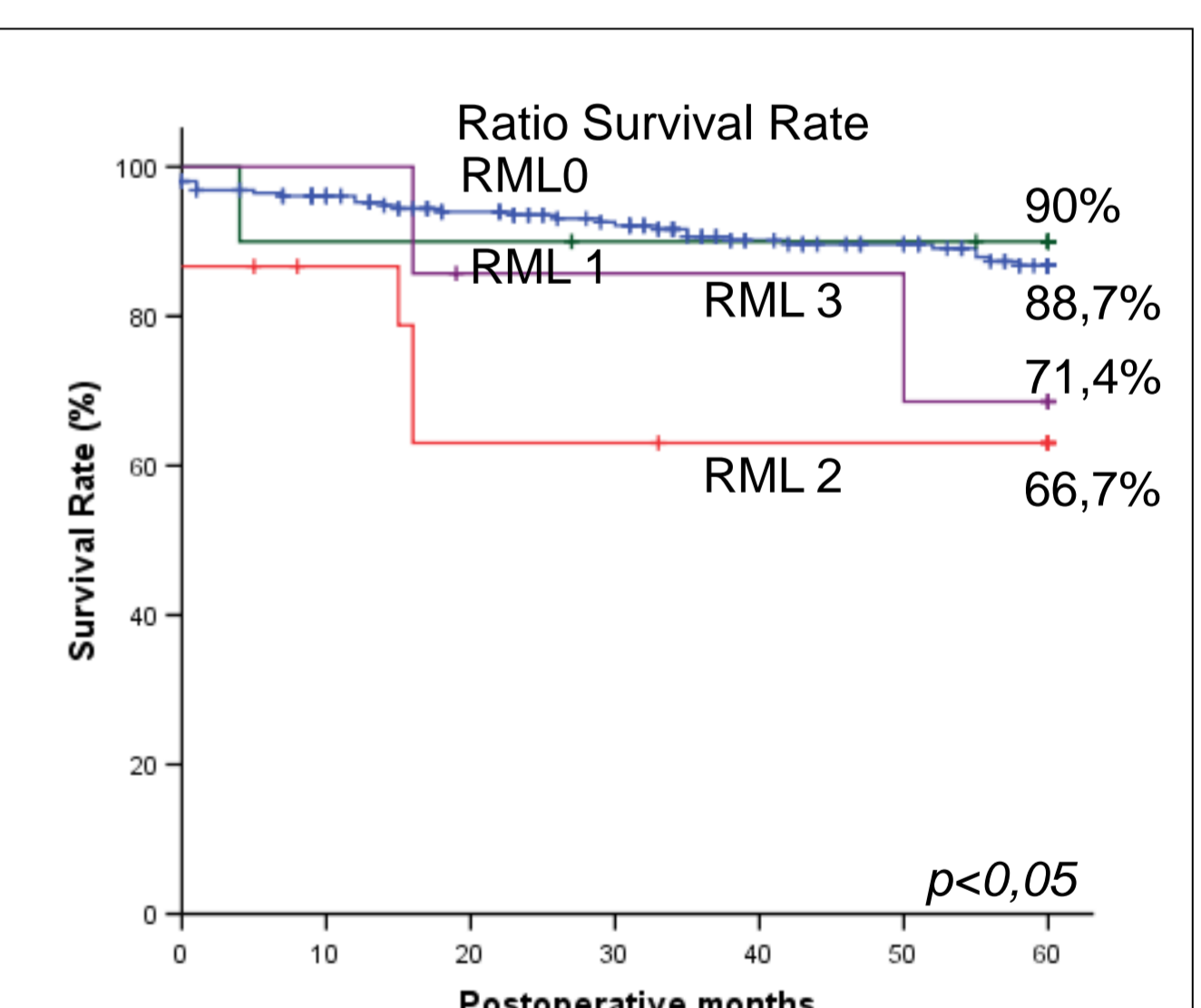
Graph 2.

The blue curve shows that male survival rate was 84,1% and green curve, woman was 91,5% with p<0,05



Graph 3.

There is no significant differences between the two factors in survival rate. Both, Ratio of number of metastatic lymph nodes and N-cat are good to stratify the sub category, and can predict equal the survival time for early gastric cancer.



Graph 4.

Conclusion

RML is an useful classification of patients with early gastric cancer. Otherwise there is no advantage over the N-cat. Future studies are needed to clarify this results.

References

- 1 - Kunisaki C, Makino H, Akiyama H, Otsuka Y, Ono HA, Kosaka T, Takagawa R, Nagahori Y, Takahashi M, Kito F, Shimada H. 2008 Clinical significance of the metastatic lymph-node ratio in early gastric cancer. J Gastrointest Surg. Mar;12:542-549.
- 2 - Fujimoto A, Ishikawa Y, Akishima-Fukasawa Y, Ito K, Akasaka Y, Tamai S, Maehara T, Kiguchi H, Ogata K, Nishimura C, Miki K, Ishii T. 2007 Significance of lymphatic invasion on regional lymph node metastasis in early gastric cancer using LYVE-1 immunohistochemical analysis. Am J Clin Pathol. Jan;127:82-88.