Comprehensive Registry of Esophageal Cancer in Japan (1998, 1999) & Long-term Results of Esophagectomy in Japan (1988-1997)

3rd Edition

The Japanese Society for Esophageal Diseases

The Japanese Society for Esophageal Diseases

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Preface

The 3rd edition of the Comprehensive Registry of Esophageal Cancer contains the total results for the 2 years from 1998 to 1999. Data were collected using a new meta-analysis type collection method based on various databases (see Appendix). A total 6,131 patients were registered, 3,109 patients from 189 institutions in 1998, 3,022 patients from 191 institutions in 1999. All patients were divided into 4 groups according to treatment methods (endoscopic treatment, chemotherapy and/or radiotherapy, palliative operation, esophagectomy). The clinicopathological findings and cancer staging were made according to the criteria of the 9th edition of the Guidelines of the Japanese Society for Esophageal Diseases and the 5th edition of the TNM classification (UICC). The results were analyzed by year. Epidemiological analysis of all patients and clinical findings of the patient groups according to year are shown in Chapter I. The treatment procedures and the results of endoscopic treatment in Chapter II, chemotherapy and/or radiotherapy in Chapter III, palliative operation in Chapter IV, and esophagectomy in Chapter V. Finally, the long-term results of esophagectomy and extended lymphadenectomy in the comprehensive registry of cases in Japan between 1988 and 1997 was added as a supplement. In the period covered by this edition, extended lymphadenectomy was performed safely in esophagectomy. In addition to radical esophagectomy, less invasive surgery (VATS and/or HALS) was introduced in some institutions. It can be said that in this period we are beginning to see increased individualization of treatment based on each separate case. In addition to the recent results of surgical treatment, we showed the results of endoscopic treatment for superficial cancer, as well as esophageal stents for advanced cancer and chemoradiotherapy. It is our hope that the up to date data of this book will be of value to doctors who are treating patients with esophageal cancer.

Comprehensive Registry of Esophageal Cancer in Japan (1998)

JSED

Contents

IV. Clinical Results in Patients treated by Palliative Operation in 1998

V. Clinical Results in Patients treated with Esophagectomy in 1998

I. Clinical Factors of Esophageal Cancer Patients treated in 1998

1. Institutions registrating cases in 1998

Institutions (No.1)

Inst#	Institutions
03e01	Dept. of Surg. Tokai Univ. School of Med. Tokyo Hospital
1102	Second Dept. of Surg. Hokkaido Univ. School of Med.
1202	First Dept. of Surg. Sapporo Med. Univ.
1203	First Dept. of Medicne. Sapporo Med. Univ.
1302	Second Dept. of Surg. Asahikawa Med. Univ.
1401	First Dept. of Surg. Hirosaki Med. Univ. School of Med.
1406	First Dept. of Medicine Hirosaki Med. Univ. School of Med.
1501	First Dept. of Surg. Iwate Med. Univ. School of Med.
1601	First Dept. of Surg. Yamagata Univ.School of Med.
1802	Second Dept. of Surg. Akita Univ. School of Med.
1901	First Dept. of Surg. Fukushima Medical School
2101	First Dept. of Surg. Gunma Univ. School of Med.
2102	Second Dept. of Surg. Gunma Univ.School of Med.
2106	First Dept. of Medicne. Gunma Univ.School of Med.
2301	First Dept. of Surg. Dokkyo Med. Univ. School of Med.
2311	Dept of Surg. Dokkyo Med. Univ. School of Med. Koshigaya Hospital
2401	Dept.of Surg. Tsukuba Univ. School of Med.
2502	Second Dept. of Surg. Saitama Medical Univ.
2602	Second Dept. of Surg National Defense Medical College
2702	Second Dept. of Surg. Chiba Univ. School of Med.
2705	Dept. of Endscopic Diagnostics & Therapautics, Chiba Univ.
3301	First Dept. of Surg. Tokyo Univ. School of Med.
3303	First Dept. of Surg. Tokyo Med. & Dental Univ.School of Med.
3401	First. Dept. of Surg. Juntendo Univ. School of Med.
3501	First Dept. of Surg. Juntendo Univ.School of Med.
3703	Therd Dept. of Surg. Tokyo Medical Univ.
3804	Dept. of Ragiol. Tokyo Women's Medical Univ.

Inst#	Institutions
3811	Dept. Surg. Institute of Gastroenterology Tokyo Wemen's Medical Univ.
3821	Dept. Surg. Tokyo Wemen's Medical Univ. Second Hospital
3901	First Dept. of Surg.The Jikei Univ. School of Med.
4001	First Dept.of Surg. Yamanashi Med. Univ. School of Med.
4201	Dept of Surg. Tokai Univ. School of Med.
4302	Second Dept. of Surg. Yokohama City Univ.School of Med.
4402	Second Dept. of Surg. St.Marianna Univ.School of Med.
4501	Dept of Surg. Kitazato Univ. School of Med.
4511	Dept. of Digestive Surg. Kitazato Univ. East Hospital
4601	Dept. of Surg. Juntendo Univ. Nagaoka Hospital
5202	Second Dept. of Surg., Toyama Med. and Pharmaceutical Univ.
5301	First Dept. of Surg. Shinsyu Univ.School of Med.
5302	Second Dept. of Surg. Juntendo Univ.School of Med.
5501	First Dept. of Surg. Nagoya Univ.School of Med.
5502	Secondt Dept. of Surg. Nagoya Univ.School of Med.
5506	Second Dept. of Medicine. Nagoya Univ.School of Med.
5601	First Dept. of Surg., Nagoya City Univ. School of Med.
5602	Second Dept. of Surg., Nagoya City Univ. School of Med.
5701	First Dept. of Surg. Gifu Univ.School of Med.
5803	Dept. of Funabiki-Surg. Fujita Health Univ. School of Med.
5811	Fujita Health Univ. School of Med. Houtokukai Hospital
6101	First Dept. of Surg. Shiga Univ. School of Med.
6207	Third Dept. of Kyoto Prefectural Univ. of Med.
6304	Dept. of Radiology Kyoto Univ. School of Med.
6311	Dept. of Surgical oncology Kyoto Univ. School of Med.
6502	Second Dept. of Surg. Kansai Medical Univ.
6601	Div. of General & Gastroenterological Surg. Osaka Univ.

Institutions (No.2)

Inst#	Institutions
6602	Dept. of Surg. and Clinical Oncology(E2) Graduate School of Med. Osaka Univ.
6701	First Dept. of Surg. Osaka City Univ. School of Med.
6704	Dept. of Radiology Osaka City Univ. School of Med.
6801	First Dept. of Surg. Kinki Univ. School of Med.
6802	Second Dept. of Surg. Kinki Univ. School of Med.
7002	Second Dept. of Surg. Wakayama Medical Univ. School of Med.
7102	Second Dept. of Surg. Kanazawa Univ. School of Med.
7201	First Dept. of Surg. Fukui Med. Univ.
7301	First Dept. of Surg. Kobe Univ. School of Med.
7302	Secondt Dept. of Surg. Kobe Univ. School of Med.
7304	Dept. of Radiology, Kobe Univ. School of Med.
7401	First Dept. of Surg. Hyogo Medical Univ.
8001	First Dept. of Surg. Okayama Univ. School of Med.
8002	Second Dept. of Surg. Okayama Univ. School of Med.
8302	Second Dept. of Surg. Shimane Medical Univ.
8402	Second Dept. of Surg.Hiroshima Univ. School of Med.
8411	Dept. of Surg. Reserch Inst. foir Nucler Med. & Biology Hiroshima Univ.
8502	Dept. of Surg. 2, Yamaguchi Univ. School of Med.
8507	First dept. of Int. Med., Yamaguchi Univ. School of Med.
8601	First Dept. of Surg. Tokushima Univ. School of Med.
9102	Second Dept. of Surg. Kyushu Univ. School of Med.
9104	Dept of Radiology Kyushu Univ. School of Med.
9201	Firstd Dept. of Surg. Fukuoka Univ. School of Med.
9202	Second Dept. of Surg. Fukuoka Univ. School of Med.
9211	Dept. of Surg. Fukuoka Univ. School of Med. Tsukushi Hospital
9301	Dept. of Surg. Kurume Univ. School of Med.
9302	Dept. of Medicalcenter Kurume Univ. School of Med.

Inst#	Institutions
9502	Second Dept. of Surg. Nagasaki Univ. School of Med
9602	Second Dept. of Surg., Kumamoto Univ., School of Med.
9802	First Dept. of Second Dept. of Surg. Miyazaki Medical Univ.
9901	First Dept. of Surg. Kagoshima Univ. School of Med.
9991	First Dept. of Surg. Univ. of the Ryukyu school of Med.
9994	Dept. of Radiology. Ryukyu Univ. School of Med.
10011	Sapporo National Hospital
10014	Sapporo National Hospital Hokkaido Cancer Center
10021	National Cancer Center Central Hospital
10031	National Cancer Center East Hospital
10081	National Shikoku Cancer Center Hospital
10101	Dept of Surg. Hakodate National Hospital
11201	Dept of Surg. Sendai National Hospital
11301	Dept of Surg. Mito National Hospital
12101	Dept of Surg. Numata National Hospital
13301	Dept of Surg. International Medical Center In Japan
14401	Dept of Surg. Kasumigaura National Hospital
14801	National Kanazawa Hospital
19041	Beppu National Hospital
19061	Dept of Surg. Miyakonojo National Hospital
19071	Dept of Surg. Ibusuki National Hospital
21061	Dept of Surg. Fukushima Prefectual Aizu Sogo Hospital
21091	Dept of Surg. Iwaki City Sogo Iwakikyoritul Hospital
21101	Dept. of Surg. Iwate Prefectural Isawa Hospital
22011	Dept of Surg. Niigata Cancer Center Hospital
22021	Dept of Surg. Niigata Prefectual Shibata Hospital
23011	Metropolitan Komagome General Hospital
23021	Dept of Surg. Metroporitan Hiroo Hospital
23031	Dept of Surg. Metroporitan Futyu Hospital

Institutions (No.3)

Inst#	Institutions
24011	Dept of Surg. Gunma Cancer Center Toumou Hospital
24031	Dept of Surg. Tochigi Cancer Center
24051	Dept of Digestive Surg. Chiba Cancer Center
24061	Dept. Surg. 1 Kanagawa Pref. Cancer Center
24101	Dept of Surg. West Hamamatsu Medical Cancer Center
25021	Dept. of Digestive Surg. Ishikawa Pref. Central Hospital
25032	Dept of Thoracic Surg. Aichi Cancer Center
25041	Dept of Surg. Fukui Prefectual Hospital
26011	Osaka Adult Disease Center
27014	Dept of Radiology Hyogo Adult Disease Center
27031	Dept of Surg. Hyogo Prefectual Kakogawa Hospital
27041	Dept of Surg. Tottori Prefectual Central Hospital
28021	Dept of Surg. Kochi Prefectual Central Hospital
29011	Dept of Surg. Saga Prefectual Kouseikan Hospital
29041	Miyazaki Prefectural Nichinan Hospital
30011	Sapporo City General Hospital
31031	Hachinohe City Hospital
31051	Sakata City Hospital
31061	Dept of Surg. Tsuruoka City Syounai Hospital
34021	Urawa Municipal Hospital
34051	Dept of Surg. Numazu City Hospital
34121	Yamato Municipal Hospital
34131	Hiratsuka City Hospital
35031	Dept of Surg. Ogaki City Hospital
35041	Dept of Surg. Gifu City Hospital
35081	Dept of Surg. Nagahama City Hospital
36041	Dept of Surg. Suita City Hospital

Inst#	Institutions
36081	Dept of Surg. Izumi City Hospital
37111	Dept of Surg. Kobe City Central Hospital
37121	Nishinomiya Municipal Central Hospital
37200	Hiroshima City Asa Hospital
37211	Dept of Surg. Matsue City Hospital
39111	Dept of Surg. Kitakyusyu City Medical Center Hospital
39121	Dept of Surg. Kitakyusyu City Yahata Hospital
40011	Dept of Surg. Tonan Hospital
40311	Dept of Surg. Toranomon Hospital
40711	Dept of Surg. Kinki Center Hospital
41411	Gunmaken Saiseikai Maebashi Hospital
41731	Dept of Surg.Okayama Rousai Hospital
42121	Akita Red Cross Hospital
42211	Dept of Surg. Nagaoka Red Cross Hospital
42311	Japanese Red Cross Medical Center
42651	Dept of Surg. Yamada Red Cross Hospital
42711	Dept of Surg. Oncol. Res. Inst. Rad. Biol. Med. Hiroshima Univ.
42831	Dept. of Surg. Matsuyama Red Cross Hospitral
43021	Dept of Surg. Kushiro Rosai Hospital
43621	Wakayama Rosai Hospital
43711	Dept of Surg. Kansai Rosai Hospital
44011	Sapporo Social Insulance General Hospital
44311	Dept of Surg. Social Insurance General Center Hospital
44541	Social Insurance Chukyo Hospital
44721	Dept of Surg. Social Insurance Shimonosekil Kosei Hospital
44911	Dept of Surg. Social Insurance Ogura Memorial Hospital
45111	Dept of Medicine Yamamoto Union General Hospital

Institutions (No.4)

Inst#	Institutions
45411	Dept of Surg. Kokuho Seitou Hospital
46011	Obihiro Kousei Hospital
46111	Dept. of Surg. Sendai Kosei Hospital
46311	Tohoku Welfare Pension Hospital
46421	Dept. of Surg. Kiryu Kousei Hospital
47111	Dept. of Surg. Tohokukosai Hospital
47311	Dept. of Surg. Tachikawa Hospital
48111	Dept. of Surg. NTT Tohoku Hospital
48611	Dept. of Surg. Osaka Teishin Hospital
52301	Tokyo Metropolitan Police Hospital
53302	Dept. of Surg. Tamananbu-Chiiki Hospital
60019	Dept. of Surg. Nikko Memorial Hospital
60041	Dept. of Surg. Keiyukai Sapporo Hospital
61011	Dept. of Surg. Ota nishinouchi Hospital
61041	Dept. of Surg. Takeda Sogo Hospital
61051	Dept. of Surg. Hirashika Sogo Hospital
63041	Fed. of National Public Services and Personnel Mutual Aid Assoc Mishuku Hospital
64441	Dept. of Surg. NKK Hospital
64521	Dept. of Surg.Showainan Sogo Hospital
66211	Dept. of Abdominal Surg. Tenri Hospital
66351	Dept. of Surg. Matsushita Memorial Hospital
67111	Dept. of Surg.Kobekogyo(Koko) Hospital
67411	Inst. of Gastroenterol. Hofu Digestive Center
68111	Sumitomo Besshi Hospital
69211	Mitsui Ohmuta Hospital

Inst#	Institutions

2. Patient Background

Table 1) Age, gender and treatment

Age	Cases (%)	Male	Female	Unknown	EMR*/ Stenting	Chemotherapy/ Radiotherapy	Palliative operation	Esopha-gectomy	Unknown
~29	2 (0.06%)	2	0	0	2	0	0	0	0
30~39	9 (0.29%)	6	3	0	0	2	1	6	0
40~49	177 (5.7%)	147	30	0	11	32	7	119	8
50~59	841 (27.1%)	752	89	0	47	174	30	560	30
60~69	1160 (37.3%)	1036	124	0	72	282	41	722	43
70~79	753 (24.2%)	646	105	2	77	217	13	422	24
80~89	138 (4.4%)	107	31	0	19	66	2	43	8
90~	7 (0.23%)	6	1	0	2	2	0	3	0
Unknown	22 (0.71%)	20	2	0	1	4	4	8	5
Total	3109 (100%)	2722 (87.7%)	385 (12.2%)	2 (0.06%)	231 (7.4%)	779 (25.1%)	98 (3.2%)	1883 (60.6%)	118 (3.8%)

*EMR:endoscopic mucosal resection

Table 2) Area of patient's residence and occupation

Area	No. of cases (%)	Area	No. of cases (%)
Total	**3109 (100%)**	Miyazaki	25 (0.8%)
Aichi	105 (3.4%)	Nagano	38 (1.2%)
Akita	63 (2.0%)	Nagasaki	25 (0.8%)
Aomori	25 (0.8%)	Nara	17 (0.5%)
Chiba	187 (6.0%)	Niigata	51 (1.6%)
Ehime	32 (1.0%)	Oita	9 (0.3%)
Fukui	12 (0.4%)	Okayama	32 (1.0%)
Fukuoka	179 (5.8%)	Okinawa	39 (1.3%)
Fukushima	50 (1.6%)	Osaka	208 (6.7%)
Gifu	29 (0.9%)	Saga	38 (1.2%)
Gunma	53 (1.7%)	Saitama	106 (3.4%)
Hiroshima	50 (1.6%)	Shiga	24 (0.8%)
Hokkaido	240 (7.7%)	Shimane	7 (0.2%)
Hyogo	152 (4.9%)	Shizuoka	41 (1.3%)
Ibaraki	46 (1.6%)	Tochigi	45 (1.4%)
Ishikawa	22 (0.7%)	Tokushima	4 (0.1%)
Iwate	55 (1.8%)	Tokyo	453 (14.6%)
Kagawa	6 (0.2%)	Tottori	6 (0.2%)
Kagoshima	64 (2.1%)	Toyama	23 (0.7%)
Kanagawa	226 (7.3%)	Wakayama	14 (0.5%)
Kochi	19 (0.6%)	Yamagata	25 (0.8%)
Kumamoto	11 (0.4%)	Yamaguchi	35 (1.1%)
Kyoto	38 (1.2%)	Yamanashi	14 (0.5%)
Mie	16 (0.5%)	Others	0 (0.0%)
Miyagi	81 (2.6%)	Unknown	69 (2.2%)

Occupation	Cases (%)
None	396 (12.7%)
Professional	356 (11.5%)
Management	257 (8.3%)
Office worker	502 (16.1%)
Sales worker	166 (5.3%)
Farm/Forestry/Marine product	192 (6.2%)
Mining and Quarrying	16 (0.5%)
Transport and communication	95 (3.1%)
Industrial technician	207 (6.7%)
General worker/Service industry	162 (5.2%)
Others	66 (2.1%)
Unclassified	10 (0.3%)
Unknown	684 (22.0%)
Total	3109 (100%)

Table 3) Familial history of carcinoma

Familial history	Cases (%)
No	1645 (52.9%)
Yes	924 (29.7%)
Unknown	540 (17.4%)
Total	3109 (100%)

Table 4) Tumors of familial history of carcinoma

Diseases	No. of cases (%)	Diseases	No. of cases (%)
Malig. lymphoma	9 (0.8%)	Duodenal ca..	1 (0.1%)
Leukemya	13 (1.0%)	Gallbladder ca.	9 (0.7%)
Brain tumor	12 (1.0%)	Pancreas ca.	47 (3.8%)
Mandibular ca.	2 (0.2%)	Colon ca.	75 (6.0%)
Thyroid ca.	6 (0.5%)	Rectal ca.	53 (4.3%)
Breast ca.	69 (5.6%)	Uterus ca.	74 (6.0%)
Lung ca.	149 (12.0%)	Ovarian ca.	9 (0.7%)
Mediastinal tumor	3 (0.2%)	Renal ca.	8 (0.6%)
Maxilla ca.	7 (0.6%)	Bladder ca.	16 (1.3%)
Tongue ca.	7 (0.6%)	Prostate ca.	12 (1.0%)
Oral ca.	6 (0.5%)	Myeloma	1 (0.1%)
Pharyngeal ca.	11 (0.9%)	Osteosarcoma	2 (0.2%)
Laryngeal ca.	30 (2.4%)	Skin ca.	3 (0.2%)
Esophgeal ca.	98 (7.9%)	Others	8 (0.6%)
Stomach ca.	345 (27.8%)	Unknown	45 (3.6%)
Hepatoma	97 (7.8%)	Total cases(%)	1240 (100%)
Cholangioma	11 (0.9%)	No. of patients	924
Jejunal ca.	2 (0.2%)		

Table 5) Chance and basis of diagnosis according to clinical T-category

Chances of diagnosis	Superficial cancer (cTis,cT1)	Advanced cancer (cT2,cT3,cT4)	Total (%)
Chief complains	291 (35.0%)	1756 (85.2%)	2047 (70.9%)
Detection survey / dock	276 (33.3%)	131 (6.4%)	407 (14.1%)
Examination for other disease	240 (29.0%)	95 (4.6%)	355 (11.6%)
Unknown	22 (2.7%)	78 (3.8%)	100 (3.5%)
Total	829 (100%)	2060 (100%)	2889* (100%)

Detection methods	Superficial cancer (cTis,cT1)	Advanced cancer (cT2,cT3,cT4)	Total (%)
Esohagography	93 (11.2%)	599 (29.1%)	692 (24.0%)
Esohagoscopy	705 (85.0%)	1317 (63.9%)	2022 (70.0%)
CT-scan	2 (0.2%)	28 (1.4%)	30 (1.0%)
US	0	3 (0.1%)	3 (0.1%)
Biopsy	7 (0.8%)	22 (1.1%)	29 (1.0%)
Others	1 (0.1%)	1 (0.05%)	2 (0.07%)
Unknown	21 (2.5%)	90 (4.4%)	111 (3.8%)
Total	829 (100%)	2060 (100%)	2889* (100%)

*: excluding 220 cTX, cT0, cT unknown cases

Table 6) Symptoms according to clinical T-category

Symptom	cTis, cT1		cT2,cT3,cT4		Total (%)	
	Cases (%)		Cases (%)			
None	472	(56.9%)	165	(8.0%)	637	(22.0%)
Chest pain	51	(6.2%)	123	(6.0%)	174	(6.0%)
Sense of stricture	69	(8.3%)	719	(34.9%)	788	(27.3%)
Unusual sensation	60	(7.2%)	79	(3.8%)	139	(4.8%)
Dysphagia	33	(4.0%)	581	(28.1%)	613	(21.2%)
Nausea / Vomiting	14	(1.7%)	68	(3.3%)	82	(2.8%)
Appetite loss	20	(2.4%)	41	(2.0%)	61	(2.1%)
Weight loss	11	(1.3%)	52	(2.5%)	63	(2.2%)
Swollen of lymph node	7	(0.8%)	19	(0.9%)	26	(0.9%)
Hoarseness	4	(0.5%)	51	(2.5%)	55	(1.9%)
Others	58	(7.0%)	105	(5.1%)	163	(5.6%)
Unknown	30	(3.6%)	58	(2.8%)	88	(3.0%)
Total	829	(100%)	2060	(100%)	2889*	(100%)

*; excluding 220 cTX, cT0, cT unkown cases

Table 7) Double / multiple primary cancers

	Endoscopical treatment (EMR/Stenting)	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
None	141 (61.0%)	614 (78.8%)	73 (74.5%)	1556 (82.6%)	2384 (79.7%)
Double	32 (13.9%)	66 (8.5%)	11 (11.2%)	150 (8.0%)	259 (8.7%)
Metachronous					
Before E-Ca	38 (16.5%)	67 (8.6%)	11 (11.2%)	113 (6.0%)	229 (7.7%)
After E-Ca	3 (1.3%)	9 (1.2%)	0	20 (1.1%)	32 (1.1%)
Multiple	8 (3.5%)	12 (1.5%)	0	21 (1.1%)	41 (1.4%)
Unknown	9 (3.9%)	11 (1.2%)	3 (3.1%)	23 (0.4%)	46 (1.5%)
Total	231 (100 %)	779 (100 %)	98 (100 %)	1883 (100 %)	2991 (100 %)

Table 8) Double / multiple primary cancers and Organs

Organs	Synchronous		Metachronous		Total	
Larynx/Maxilla	21	(5.4%)	21	(7.0%)	42	(6.2%)
Pharynx	66	(17.0%)	26	(8.7%)	92	(13.4%)
Oral cavity/Gum/Tongue	6	(1.5%)	13	(4.3%)	19	(2.8%)
Stomach	167	(43.0%)	83	(27.7%)	250	(36.3%)
Colon/Rectum	44	(11.3%)	39	(13.0%)	83	(12.1%)
Liver	11	(2.8%)	8	(2.7%)	19	(2.8%)
Choledochus/Gallbladder	4	(1.0%)	1	(0.3%)	5	(0.7%)
Pancreas	3	(0.8%)	1	(0.3%)	4	(0.6%)
Lung/Trachea/Bronchus	19	(4.9%)	26	(8.7%)	45	(6.5%)
Remnant esophagus	1	(0.3%)	6	(2.0%)	7	(1.0%)
Uterus/Ovarium	2	(0.5%)	5	(1.7%)	7	(1.0%)
Breast	4	(1.0%)	8	(2.7%)	12	(1.7%)
Prostate	3	(0.7%)	6	(2.0%)	9	(1.3%)
Urinary bladder	5	(1.3%)	9	(3.0%)	14	(2.0%)
Leukemia	2	(0.5%)	1	(0.3%)	3	(0.4%)
Skin	2	(0.5%)	4	(1.3%)	6	(0.9%)
Brain	0		0		0	
Thyroid	7	(1.8%)	3	(1.0%)	10	(1.5%)
Bone	1	(0.3%)	0		1	(0.1%)
Kidney	5	(1.3%)	5	(1.7%)	10	(1.5%)
Others	15	(3.9%)	19	(6.3%)	34	(4.9%)
Unknown	0		16	(5.3%)	16	(2.3%)
Lesions	388	(100%)	300	(100%)	688	(100%)
Cases	352		277		629	

Table 9) Double primary cancer - Organs (in endoscopically treated cases)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After E-Ca	
Larynx/Maxilla	4 (11.1%)	2 (4.9%)		
Pharynx	4 (11.1%)	1 (2.4%)	1 (33.3%)	5 (31.3%)
Oral cavity/Gum/Tongue	1 (2.8%)	3 (7.3%)		1 (6.3%)
Stomach	12 (33.3%)	20 (48.8%)	1 (33.3%)	4 (25.0%)
Colon/Rectum	5 (13.9%)	5 (12.2%)		3 (18.8%)
Liver	3 (8.3%)	1 (2.4%)		
Choledochus/Gallbladder		1 (2.4%)		
Pancreas	1 (2.8%)			
Lung/Trachea/Bronchus	3 (8.3%)	1 (2.4%)		1 (6.3%)
Remnant esophagus				
Uterus/Ovarium				
Breast				
Prostate		3 (7.3%)		
Urinary bladder		1 (2.4%)		
Leukemia				1 (6.3%)
Skin				
Brain				
Thyroid	1 (2.8%)			
Bone				
Kidney				
Others	2 (5.6%)	2 (4.9%)		1 (6.3%)
Unknown		1 (2.4%)	1 (33.3%)	
Lesions	36 (100%)	41 (100%)	3 (100%)	16 (100%)
Cases	32	38	3	8

Table 10) Double primary cancer - Organs (in cases of chemotherapy and/or radiotherapy)

Organs	Synchronous		Metachronous				Multiple	
			Before E-Ca		After e-Ca			
Larynx/Maxillary	2	(2.8%)	1	(1.3%)			1	(3.2%)
Pharynx	18	(25.0%)	3	(4.0%)			7	(22.6%)
Oral cavity/Gum/Tongue	1	(1.4%)	4	(5.3%)	1	(9.1%)	2	(6.5%)
Stomach	27	(37.5%)	20	(26.7%)			12	(38.7%)
Colon/Rectum	6	(8.3%)	15	(20.0%)	3	(27.3%)	1	(3.2%)
Liver	5	(6.9%)	4	(5.3%)			2	(6.5%)
Choledocus/Gallbladder							1	(3.2%)
Pancreas	1	(1.4%)			1	(9.1%)		
Lung/Trachea/Bronchus	3	(4.2%)	7	(9.3%)	1	(9.1%)	2	(6.5%)
Remnant esophagus					2	(18.2%)		
Uterus/Ovarium								
Breast			2	(2.7%)				
Prostate	2	(2.8%)					2	(6.5%)
Urinary bladder	2	(2.8%)	5	(6.7%)	1	(9.1%)		
Leukemia			1	(1.3%)				
Skin			1	(1.3%)	1	(9.1%)		
Brain								
Thyroid	1	(1.4%)	2	(2.7%)				
Bone								
Kidney	1	(1.4%)	3	(4.0%)				
Others	3	(4.2%)	4	(5.3%)	1	(9.1%)	1	(3.2%)
Unknown			3	(4.0%)				
Lesions	72	(100%)	75	(100%)	11	(100%)	31	(100%)
Cases	66		67		9		12	

Table 11) Double primary cancer - Organs (in cases of palliative operation)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After E-Ca	
Larynx/Maxillary				
Pharynx	2 (20.0%)	1 (11.1%)		1 (33.3%)
Oral cavity/Gum/Tongue				
Stomach	5 (50.0%)	2 (22.2%)	1 (100%)	1 (33.3%)
Colon/Rectum	2 (20.0%)	2 (22.2%)		
Liver				
Choledocus/Gallbladder				
Pancreas				
Lung/Trachea/Bronchus				
Remnant esophagus	1 (10.0%)			
Uterus/Ovarium		2 (22.2%)		
Breast				1 (33.3%)
Prostate				
Urinary bladder				
Leukemia				
Skin				
Brain				
Thyroid				
Bone				
Kidney				
Others		1 (11.1%)		
Unknown		1 (11.1%)		
Lesions	10 (100%)	9 (100%)	1 (100%)	3 (100%)
Cases	10	8	1	1

Table 12) Double primary cancer - Organs (in cases of esophagectomy)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After E-Ca	
Larynx/Maxillary	11 (6.4%)	14 (12.1%)	2 (9.1%)	4 (8.3%)
Pharynx	29 (17.1%)	5 (4.3%)	6 (27.3%)	6 (12.5%)
Oral cavity/Gum/Tongue	2 (1.2%)	4 (3.4%)	1 (4.5%)	
Stomach	85 (50.0%)	33 (28.4%)	5 (18.2%)	11 (22.9%)
Colon/Rectum	20 (11.8%)	14 (12.1%)	2 (9.1%)	9 (18.8%)
Liver	2 (1.2%)	1 (0.9%)		
Choledocus/Gallbladder	1 (0.6%)	1 (0.9%)		1 (2.1%)
Pancreas				
Lung/Trachea/Bronchus	4 (2.4%)	10 (8.6%)	4 (18.2%)	5 (10.4%)
Remnant esophagus		3 (2.6%)		1 (2.1%)
Uterus/Ovarium		4 (3.4%)		1 (2.1%)
Breast		7 (6.0%)		2 (4.2%)
Prostate	1 (0.6%)	1 (0.9%)		
Urinary bladder		3 (2.6%)	1 (4.5%)	1 (2.1%)
Leukemia		1 (0.9%)	1 (4.5%)	
Skin	2 (1.2%)	2 (1.7%)		
Brain				
Thyroid	3 (1.8%)	1 (0.9%)		2 (4.2%)
Bone	1 (0.6%)			
Kidney	3 (1.8%)	1 (0.9%)	1 (4.5%)	1 (2.1%)
Others	6 (3.5%)	8 (6.9%)		4 (8.3%)
Unknown		3 (2.6%)		
Lesions	170 (100%)	116 (100%)	23 (100%)	48 (100%)
Cases	153	113	22	21

Table 13) Location of tumor

Location	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
Not detected	3 (1.3%)			3 (0.2%)	6 (0.2%)
Pharynx		4 (0.5%)	2 (2.0%)	18 (1.0%)	24 (0.8%)
Cervical esophagus		67 (8.6%)	6 (6.1%)	71 (3.8%)	144 (4.8%)
Upper thoracic eso.	23 (10.0%)	152 (19.5%)	16 (16.3%)	190 (10.1%)	381 (12.7%)
Middle thoracic eso.	150 (64.9%)	387 (49.7%)	49 (50.0%)	970 (51.5%)	1556 (52.0%)
Lower thoracic eso.	42 (18.2%)	142 (18.2%)	22 (22.4%)	504 (26.8%)	710 (23.7%)
Abdominal esophagus	3 (1.3%)	18 (2.3%)	2 (2.0%)	99 (5.3%)	122 (4.1%)
EG-Junction (E=G)	1 (0.4%)			16 (0.9%)	17 (0.6%)
Cardia (G)				2 (0.1%)	2 (0.07%)
Unknown	9 (3.9%)	9 (1.2%)	1 (1.0%)	10 (0.5%)	29 (1.0%)
Total	231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2991 (100%)

Table 14) Longitudinal tumor length on esophagography

Length	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
not examined	94 (40.7%)	52 (6.7%)	4 (4.1%)	43 (2.3%)	193 (6.4%)
~1cm	6 (2.6%)	6 (0.8%)	2 (2.0%)	24 (1.3%)	38 (1.3%)
~2cm	25 (10.8%)	19 (2.4%)	7 (7.1%)	90 (4.8%)	141 (4.7%)
~3cm	19 (8.2%)	43 (5.5%)	5 (5.1%)	174 (9.2%)	241 (8.1%)
~4cm	13 (5.6%)	51 (6.5%)	8 (8.2%)	232 (12.3%)	304 (10.2%)
~5cm	7 (3.0%)	74 (9.5%)	7 (7.1%)	249 (13.2%)	337 (11.3%)
~6cm	7 (3.0%)	102 (13.1%)	17 (17.3%)	269 (14.3%)	395 (13.2%)
~7cm	1 (0.4%)	53 (6.8%)	7 (7.1%)	210 (11.2%)	271 (9.1%)
~8cm	2 (0.9%)	80 (10.3%)	8 (8.2%)	190 (10.1%)	280 (9.4%)
~9cm	2 (0.9%)	77 (9.9%)	6 (6.1%)	91 (4.8%)	176 (5.9%)
~10cm	0	30 (3.9%)	2 (2.0%)	59 (3.1%)	91 (3.0%)
~11cm	5 (2.2%)	46 (5.9%)	4 (4.1%)	52 (2.8%)	107 (3.5%)
~12cm	2 (0.9%)	16 (2.1%)	1 (1.0%)	21 (1.1%)	40 (1.3%)
~13cm	1 (0.4%)	17 (2.2%)	3 (3.1%)	10 (0.5%)	31 (1.0%)
~14cm	0	9 (1.2%)	1 (1.0%)	6 (0.3%)	16 (0.5%)
~15cm	0	6 (0.8%)	0	2 (0.1%)	8 (0.3%)
~16cm	0	3 (0.4%)	2 (2.0%)	4 (0.2%)	9 (0.3%)
~17cm	0	1 (0.1%)	0	2 (0.1%)	3 (0.1%)
17.1cm~	0	9 (1.2%)	0	2 (0.1%)	11 (0.4%)
Unknown	47 (20.3%)	85 (10.9%)	14 (14.3%)	153 (8.1%)	299 (10.0%)
Total	231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2991 (100%)

Table 15) Endoscopic features

Type	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
Not examined	2 (0.9%)	1 (1.3%)	4 (4.1%)	6 (0.3%)	13 (0.4%)
0-I	7 (3.0%)	23 (3.0%)	3 (3.1%)	107 (5.7%)	140 (4.7%)
0-IIa	13 (5.6%)	19 (2.4%)	6 (6.1%)	100 (5.3%)	138 (4.6%)
0-IIb	40 (17.3%)	9 (1.2%)	0	42 (2.2%)	91 (3.0%)
0-IIc	141 (61.0%)	71 (9.1%)	8 (8.2%)	226 (12.0%)	446 (14.9%)
0-III	0	1 (0.1%)	0	24 (1.3%)	25 (0.8%)
0-V	0	0	0	1 (0.05%)	1 (0.03%)
1	1 (0.4%)	48 (6.2%)	10 (10.2%)	162 (8.6%)	221 (7.4%)
2	6 (2.6%)	226 (29.0%)	27 (27.6%)	587 (31.2%)	846 (28.3%)
3	10 (4.3%)	251 (32.2%)	25 (25.5%)	489 (26.0%)	775 (25.9%)
4	1 (0.4%)	29 (3.7%)	4 (4.1%)	36 (1.9%)	70 (2.3%)
5	1 (0.4%)	22 (2.8%)	2 (2.0%)	32 (1.7%)	57 (1.9%)
Unknown	9 (3.9%)	79 (10.1%)	9 (9.2%)	71 (3.8%)	168 (5.6%)
Total	231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2991 (100%)

0- I : superficical and protruding type
0- IIa : superficical and slight elevated type
0- IIb : superficical and flat type
0- IIc : superficical and slightly depressed
0- III : superficical and distinctly depressed

1 : protruding type
2 : ulcerative and localized type
3 : ulcerative and infiltrating type
4 : diffusely infiltrating type
5 : miscellaneous type

Table 16) Histologic types of biopsy

Histologic types		Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
				Palliative operation	Esophagectomy	
Not examined		22 (9.5%)	5 (0.6%)	5 (5.1%)	16 (0.9%)	48 (1.6%)
SCC	SCC	117 (50.6%)	328 (42.1%)	49 (50.0%)	771 (40.9%)	1265 (423%)
	Well diff.	22 (9.5%)	51 (6.5%)	4 (4.1%)	221 (11.7%)	298 (10.0%)
	Moderately diff.	36 (15.6%)	226 (29.0%)	25 (25.5%)	547 (29.0%)	834 (27.9%)
	Poorly diff.	7 (3.0%)	105 (13.5%)	6 (6.1%)	235 (12.5%)	353 (11.8%)
Adenocarcinoma		0	6 (0.8%)	2 (2.0%)	39 (2.1%)	47 (1.6%)
Undifferentiated		0	9 (1.2%)	0	16 (0.8%)	25 (0.8%)
So-called carcinosarcoma		0	2 (0.3%)	0	4 (0.2%)	6 (0.3%)
Malignant .melanoma		0	0	0	1 (0.05%)	1 (0.03%)
Others		1 (0.4%)	8 (1.0%)	0	17 (0.9%)	26 (0.9%)
Dysplasia		2 (0.9%)	0	0	0	2 (0.07%)
Unknown		24 (10.4%)	39 (5.0%)	7 (7.0%)	16 (0.9%)	86 (2.9%)
Total		231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2991 (100%)

Table 17) Depth of tumor invasion cT (Clinical TNM-classification)

cT	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
cTx	0	10 (1.3%)	1 (1.0%)	6 (0.3%)	17 (0.6%)
cT0	3 (1.3%)	3 (0.4%)	0	5 (0.3%)	11 (0.4%)
cTis	62 (26.8%)	4 (0.5%)	3 (3.1%)	16 (0.9%)	85 (2.8%)
cT1	37 (16.0%)	44 (5.6%)	9 (9.2%)	165 (8.8%)	255 (8.5%)
cT1a	70 (30.3%)	17 (2.2%)	1 (1.0%)	61 (3.2%)	149 (5.0%)
cT1b	15 (6.5%)	55 (7.1%)	11 (11.2%)	253 (13.4%)	334 (11.2%)
cT2	0	89 (11.4%)	9 (9.2%)	331 (17.6%)	429 (14.3%)
cT3	11 (4.8%)	269 (34.5%)	31 (31.6%)	821 (43.6%)	1132 (37.8%)
cT4	8 (3.5%)	262 (33.6%)	26 (26.5%)	167 (8.9%)	463 (15.5%)
Unknown	25 (10.8%)	26 (3.3%)	7 (7.1%)	58 (3.1%)	116 (3.9%)
Total	231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2991 (100%)

Table 18) Lymph node metastasis, cN; and Organ metastasis, cM (Clinical TNM-classification)

cN	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
cNx	5 (2.2%)	37 (5.2%)	1 (1.0%)	33 (1.8%)	90 (3.6%)
cN0	190 (82.3%)	252 (26.0%)	28 (28.6%)	903 (48.0%)	1092 (43.6%)
cN1	10 (4.3%)	460 (64.0%)	63 (64.3%)	883 (46.9%)	1232 (49.2%)
Unknown	26 (11.3%)	30 (4.8%)	6 (6.1%)	64 (3.4%)	88 (3.5%)
Total	231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2502 (100%)

cM	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
cMx	2 (0.9%)	27 (3.5%)	1 (1.0%)	7 (0.4%)	24 (1.0%)
cM0	201 (87.0%)	485 (62.3%)	66 (67.3%)	1638 (87.0%)	2057 (82.2%)
cM1	2 (0.9%)	50 (6.4%)	3 (3.1%)	36 (1.9%)	147 (5.9%)
cM1a	2 (0.9%)	49 (6.3%)	3 (3.1%)	46 (2.4%)	59 (2.4%)
cM1b	2 (0.9%)	146 (18.7%)	17 (17.3%)	99 (5.3%)	154 (6.2%)
Unknown	22 (9.5%)	22 (2.8%)	8 (8.2%)	57 (3.0%)	61 (2.4%)
Total	231 (100%)	779 (100%)	98 (100%)	1883 (100%)	2502 (100%)

Table 19) Metastatic Organs of cM1 (Clinical TNM classification)

Metastatic organs	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
PUL	0	60 (20.0%)	1 (4.0%)	9 (4.7%)	70 (13.5%)
OSS	2 (33.3%)	14 (4.7%)	0	3 (1.6%)	19 (3.3%)
HEP	1 (16.7%)	55 (18.3%)	4 (16.0%)	18 (9.5%)	78 (13.5%)
BRA	0	5 (1.7%)	0	0	5 (1.3%)
LYM	2 (33.3%)	138 (46.0%)	18 (72.0%)	125 (65.8%)	283 (44.1%)
MAR	0	1 (0.3%)	0	1 (0.5%)	2 (0.9%)
PLE	0	3 (1.0%)	0	0	3 (1.3%)
PER	0	0	0	2 (1.1%)	2 (1.1%)
SKI	0	0	0	0	0 (0.4%)
OTH	0	8 (2.7%)	0	3 (1.6%)	11 (3.7%)
Unknown	1 (16.7%)	16 (5.3%)	2 (8.0%)	29 (15.3%)	48 (17.0%)
Lesions	6 (100%)	300 (100%)	25 (100%)	190 (100%)	521 (100%)
One organ	5 (83.3%)	187 (76.3%)	19 (55.0%)	143 (79.0%)	354 (68.0%)
Two organs	0	32 (13.1%)	2 (20.0%)	9 (5.0%)	43 (9.5%)
Three organs	0	8 (3.3%)	0	0	8 (2.8%)
Four organs~	0	2 (0.8%)	0	0	2 (0.2%)
Unknown	1 (16.7%)	16 (6.5%)	2 (20.0%)	29 (16.0%)	48 (19.5%)
Total cases	6 (100%)	245 (100%)	23 (100%)	181 (100%)	455 (100%)

Table 20) Clinical Stage (Clinical TNM-classification)

cStage	Endoscopic treatment		Chemotherapy and/or radiotherapy		Surgery				Total (%)	
					Palliativeoperation		Esophagectomy			
0	62	(26.8%)	5	(0.6%)	3	(3.1%)	19	(1.0%)	89	(3.0%)
I	121	(52.4%)	91	(11.7%)	10	(10.2%)	381	(20.2%)	603	(20.1%)
IIA	3	(1.3%)	92	(11.8%)	7	(7.1%)	435	(23.1%)	537	(18.0%)
IIB	0		29	(3.7%)	9	(9.2%)	192	(10.2%)	230	(7.7%)
III	8	(3.4%)	240	(30.8%)	36	(36.7%)	570	(30.3%)	854	(28.6%)
IV	1	(0.4%)	43	(5.5%)	1	(1.0%)	34	(1.8%)	79	(2.6%)
VIA	1	(0.4%)	45	(5.8%)	5	(5.1%)	46	(2.4%)	97	(3.2%)
IVB	2	(0.9%)	141	(18.1%)	15	(15.3%)	99	(5.3%)	257	(8.6%)
Unknown	33	(14.3%)	93	(11.9%)	12	(12.2%)	107	(5.7%)	245	(8.2%)
Total	231	(100%)	779	(100%)	98	(100%)	1883	(100%)	2991	(100%)

II. Clinical Results of Patients treated with Endoscopically in 1998

Table 21) Treatment details in patients with endoscopic treatment

Treatment details	Cases	(%)
Endoscopic treatment only	221	(95.2%)
Endoscopic treatment + Radiotherapy	0	
Endoscopic treatment + Chemotherapy	11	(4.8%)
Endoscopic treatment + Hyperthermia	0	
Endoscopic treatment + Chemoradiotherapy	0	
Total	231	(100%)

Treatment details	Cases	(%)
EMR	207	(89.6%)
EMR+PDT	1	(0.4%)
EMR+YAG laser	1	(0.4%)
EMR+MCT	3	(1.3%)
EMR+Other treatment	1	(0.4%)
Esophageal stenting	15	(6.5%)
Esophageal stenting + tracheal stenting	1	(0.4%)
Others	2	(0.9%)
Total	231	(100%)

EMR: endoscopic mucosal resection
PDT: photodynamic therapy
MCT:microwave coaguration therapy

Table 22) Endoscopic mucosal resection (EMR)

Method of EMR	Cases	(%)
One piece resection	118	(50.7%)
Piecemeal resection	93	(43.8%)
Unknown	2	(5.5%)
Total	213	(100%)

No. of lesions treated by EMR	Cases	(%)
1	118	(55.4%)
2	39	(18.3%)
3	14	(6.6%)
4	7	(3.3%)
5	3	(1.4%)
6	6	(2.8%)
7	2	(0.9%)
8	2	(0.9%)
9	2	(0.9%)
10 and/or over	2	(0.9%)
Unknown	18	(8.5%)
Total	213	(100%)

Radicality of EMR	Cases	(%)
Complete resection	164	(77.0%)
Non-complete resection	24	(11.2%)
Unknown	25	(11.7%)
Total	213	(100%)

Complications of EMR	Cases	(%)
None	172	(80.8%)
Perforation	1	(0.5%)
Bleeding	3	(1.4%)
Mediastinitis	0	
Stenosis	8	(3.8%)
Others	2	(0.9%)
Unknown	27	(12.7%)
Total	213	(100%)

Table 23) Prognosis of patients underwent endoscopic mucosal resection (EMR)

Outcome	Cases	(%)
Alive	173	(81.2%)
Dead	19	(8.9%)
Lost of follow up	14	(6.6%)
Unknown	7	(3.3%)
Total	213	(100%)

Causes of Death	Cases	(%)
Death due to esophageal cancer	10	(11.8%)
Death due to other cancer	2	(41.2%)
Death due to other disease (rec+)	0	
Death due to other disease (rec-)	5	(35.3%)
Death due to other disease (rec?)	0	(5.9%)
Death related to treatment within 30days	0	
Death related to treatment after 30 days	1	
Unknown	1	(5.9%)
Total	19	(100%)

Type of recurrence	Cases	(%)
None	156	(73.2%)
Lymph node	1	(0.5%)
Lung	3	(1.4%)
Liver	0	
Bone	0	
Brain	0	
Local	6	(2.8%)
Dissemination	0	
Stump	1	(0.4%)
Other	0	
Unknown	46	(21.6%)
Total	213	(100%)

rec : recurrence

Table 24) Histologic findings of EMR specimen (tumor size, histologic type, and depth of tumor invasion)

Size of lesion	Cases (%)
~ 9mm	15 (7.0%)
10 ~19mm	39 (18.3%)
20~29mm	14 (6.6%)
30~39mm	7 (3.3%)
40~49mm	4 (1.9%)
50~59mm	3 (1.4%)
60~69mm	3 (1.4%)
70mm~`	2 (0.9%)
Unknown	126 (59.2%)
Total	213 (100%)

Histologic type of EMR specimen	Cases (%)
Squamous cell ca (SCC)	92 (43.2%)
Well diff. SCC	18 (8.5%)
Moderately diff. SCC	52 (24.4%)
Poorly diff. SCC	7 (3.3%)
Adenocarcinima	0
Barrett's carcinoma	0
Dysplasia	5 (2.3%)
Others	2 (0.9%)
Unknown	37 (17.3%)
Total	213 (100%)

Pathological depth of tumor invasion (pT)	Cases (%)
pT0	2 (0.9%)
pTis	77 (36.2%)
pT1a(lpm)	54 (25.4%)
pT1a(mm)	23 (10.8%)
pt1b	19 (8.9%)
Unknown	38 (17.8%)
Total	213 (100%)

Sub-classification of histological depth of invasion in superficial cancer	Cases (%)
m1(ep)	77 (36.2%)
m2(lpm)	54 (25.4%)
m3(mm)	23 (10.8%)
sm1	10 (4.7%)
sm2	5 (2.3%)
sm3	0
Unknown	44 (20.7%)
Total	213 (100%)

ep: epithelium
lpm: lamina propria mucosa
mm: muscularis mucosa

Table 25) Histologic findings of EMR specimen (intraepithelial spread, vessel invasion, multiple cancer, and multiple lesion)

Intraepithelial spread (ie)	Cases (%)
(-)	39 (18.3%)
(+)	9 (4.2%)
(+++) superficial spread	1 (0.5%)
Unknown	164 (77.0%)
Total	213 (100%)

Lympatic vessel invasion (ly)	Cases (%)
(-)	106 (49.8%)
(+)	5 (2.3%)
Unknown	102 (47.9%)
Total	213 (100%)

Blood vessel invasion (v)	Cases (%)
(-)	107 (50.2%)
(+)	3 (1.4%)
Unknown	103 (48.4%)
Total	213 (100%)

Multiple primary cancer	Cases (%)
(-)	41 (19.2%)
(+)	5 (2.3%)
Unknown	167 (78.4%)
Total	213 (100%)

Multiple malignant lesions	Cases (%)
(-)	38 (17.8%)
(+)	8 (3.8%)
Unknown	167 (78.4%)
Total	213 (100%)

No. of multiple primary lesions	Cases (%)
2	6 (25.0%)
3	2 (50.0%)
4	0
Total	8 (100%)

Figure 1) Survival of patients treated with endoscopy

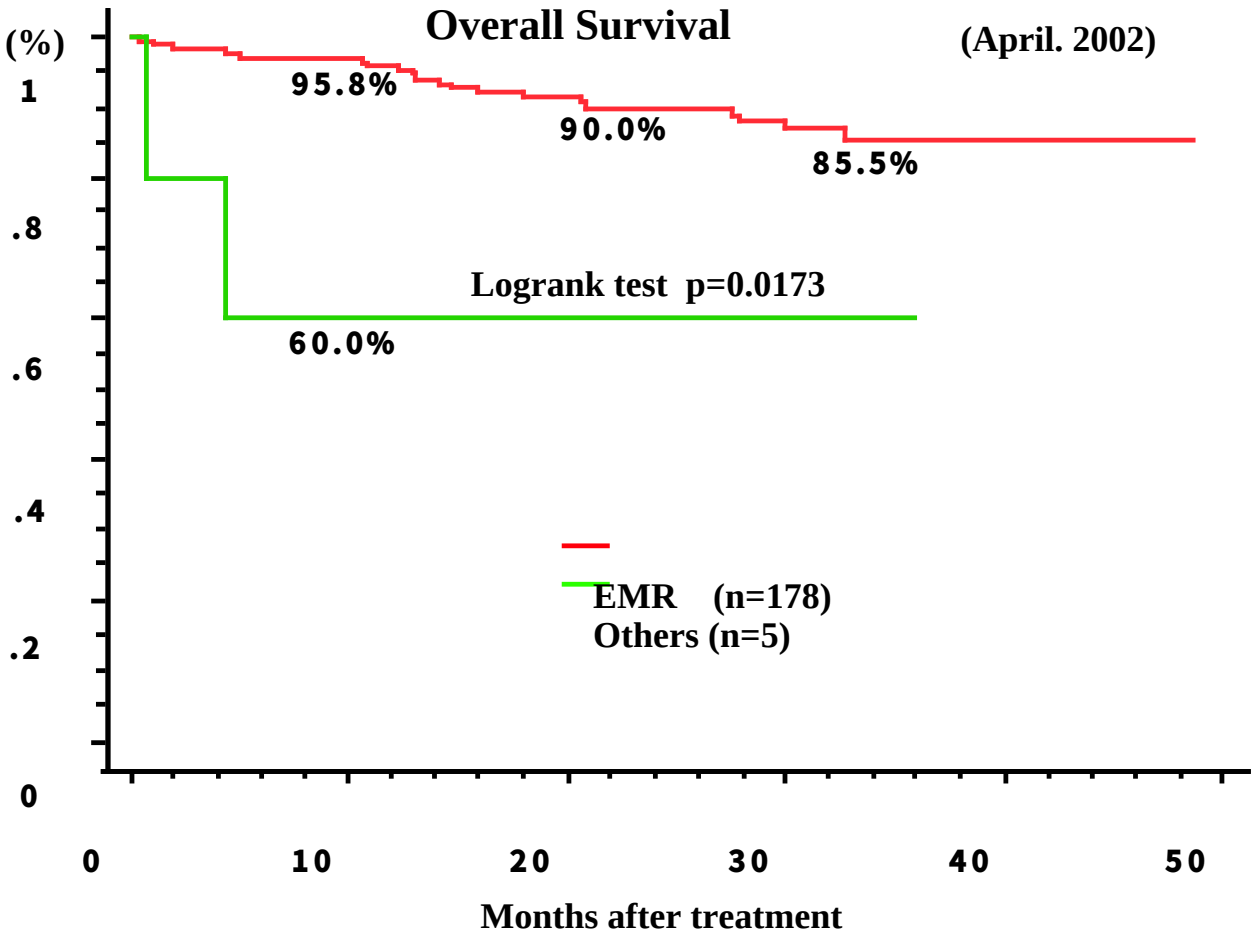


Figure 2) Survival of patients treated with EMR

(April. 2002)

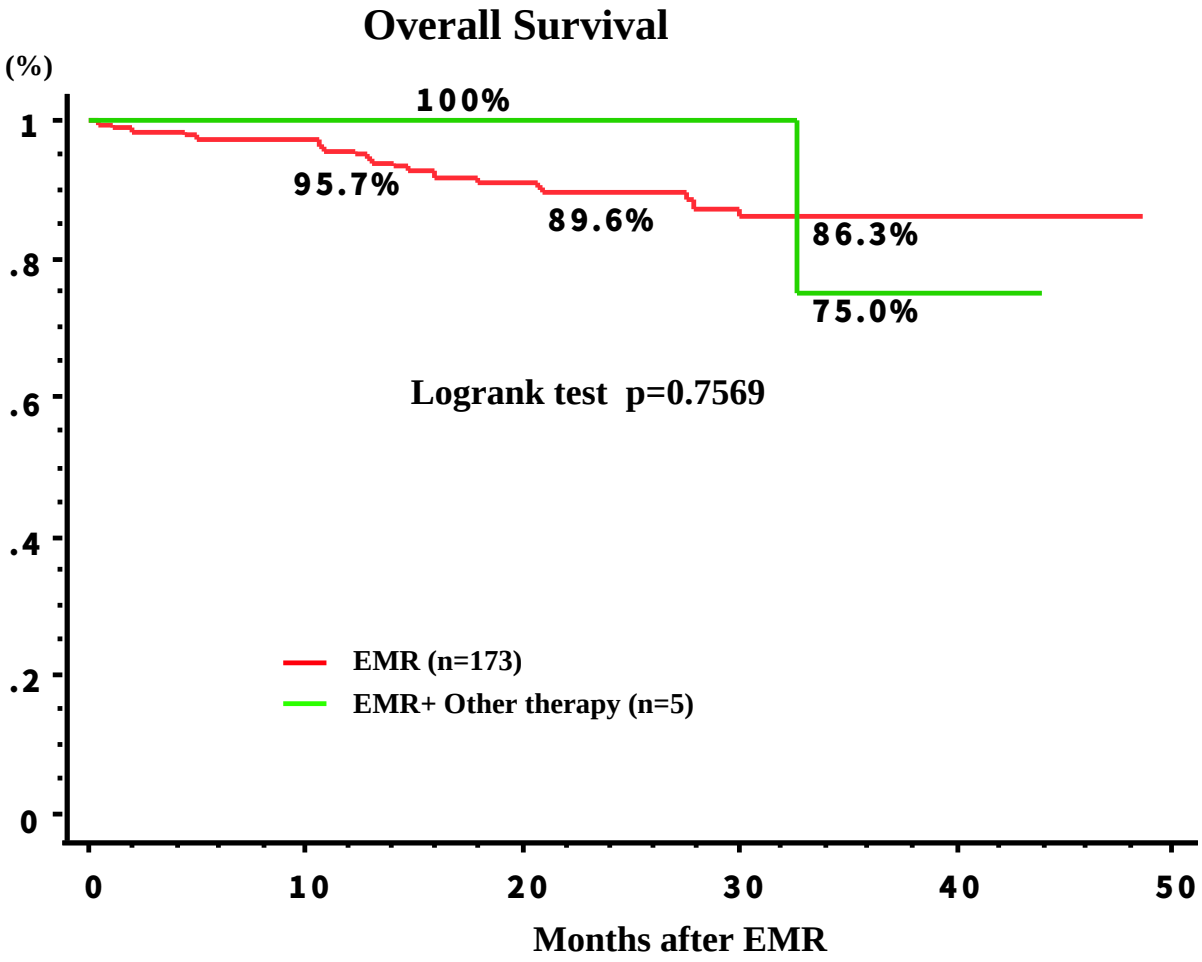
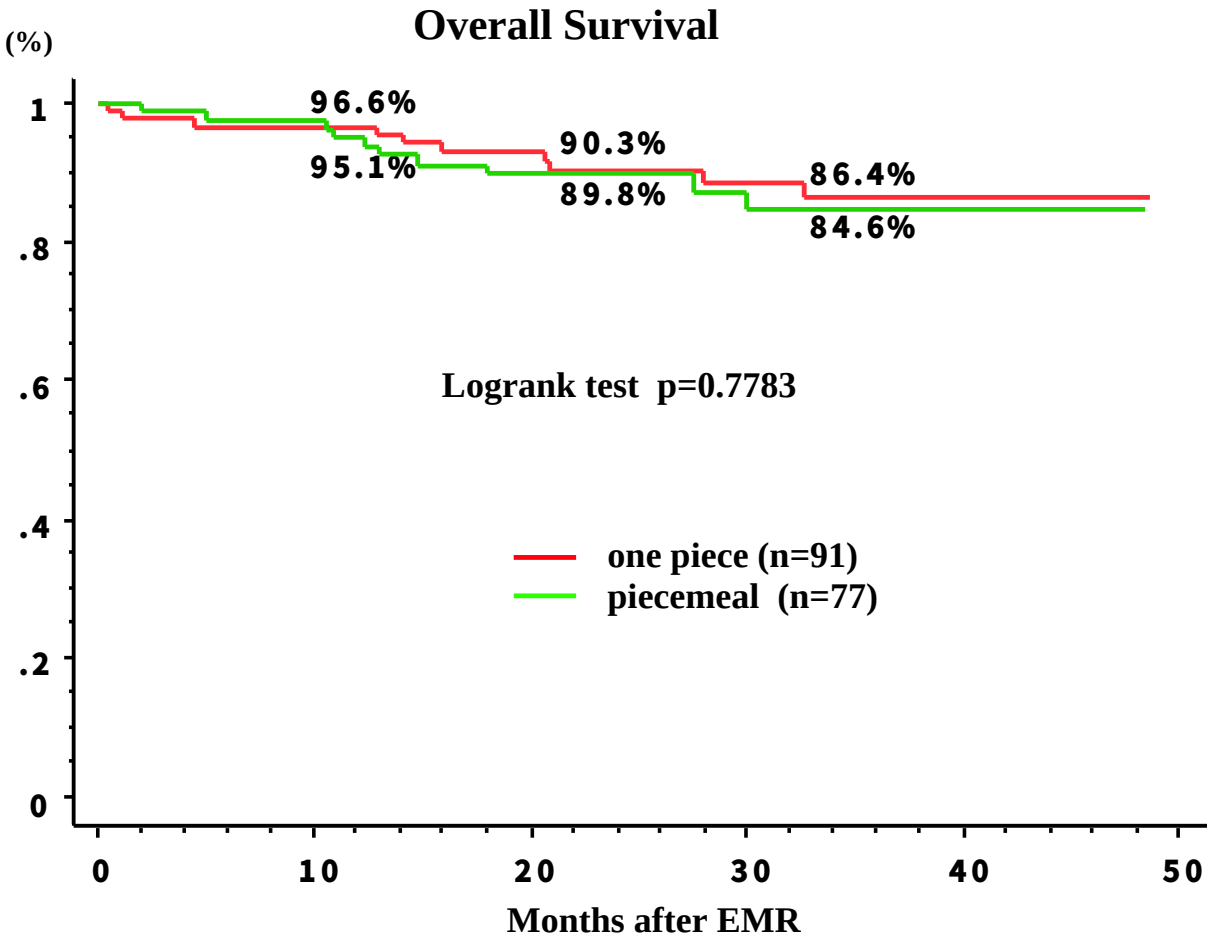


Figure 3) Survival of patients according to type of EMR

(April. 2002)



III. Clinical Results in Patients treated with Chemotherapy and/or Radiotherapy in 1998

Table 26) Radiotherapy and/or chemotherapy (non surgically treated cases)

Treatment	Cases (%)
Radiotherapy alone	264 (33.9%)
Chemoradiotherapy	460 (59.1%)
Chemotherapy alone	55 (7.1%)
Total	779 (100%)

Radiotherapy	Cases (%)
Curative radiation	417 (40.5%)
Palliative radiation	183 (26.1%)
Others	56 (10.6%)
Unknown	68 (22.7%)
Total	724 (100%)

Endo-irradiation	Cases (%)
(-)	514 (68.2%)
(+)	70 (17.8%)
Unknown	140 (14.0%)
Total	724 (100%)

Doses of irradiation (Gy)	Cases (%)
0	0
~ 19	18 (2.5%)
20 ~ 39	66 (9.1%)
40 ~ 59	126 (17.4%)
60 ~ 79	412 (56.9%)
80 ~ 99	2 (0.3%)
100 ~	4 (0.6%)
Unknown	96 (13.3%)
Total	724 (100%)

Table 27) Effectiveness of radiotherapy and/or chemotherapy (non surgically treated cases)

Chemotherapy	Cases (%)
(-)	0
(+)	515 (98.4%)
Unknown	8 (1.6%)
Total	515 (100%)

Response to radiotherapy	Cases (%)
CR	56 (21.2%)
PR	62 (23.5%)
NC	26 (9.8%)
PD	9 (3.4%)
Not evaluated	25 (9.5%)
Unknown	86 (32.6%)
Total	264 (100%)

Response to chemoradiotherapy	Cases (%)
CR	82 (17.8%)
PR	185 (40.2%)
NC	78 (17.0%)
PD	38 (8.3%)
Not evaluated	18 (3.9%)
Unknown	59 (12.8%)
Total	460 (100%)

Response to chemotherapy	Cases (%)
CR	3 (5.5%)
PR	23 (41.8%)
NC	9 (16.4%)
PD	11 (20.0%)
Not evaluated	1 (1.8%)
Unknown	8 (14.5%)
Total	55 (100%)

Figure 4) Cumulative survival curves of patients treated by chemotherapy and/or radiotherapy

(April. 2002)

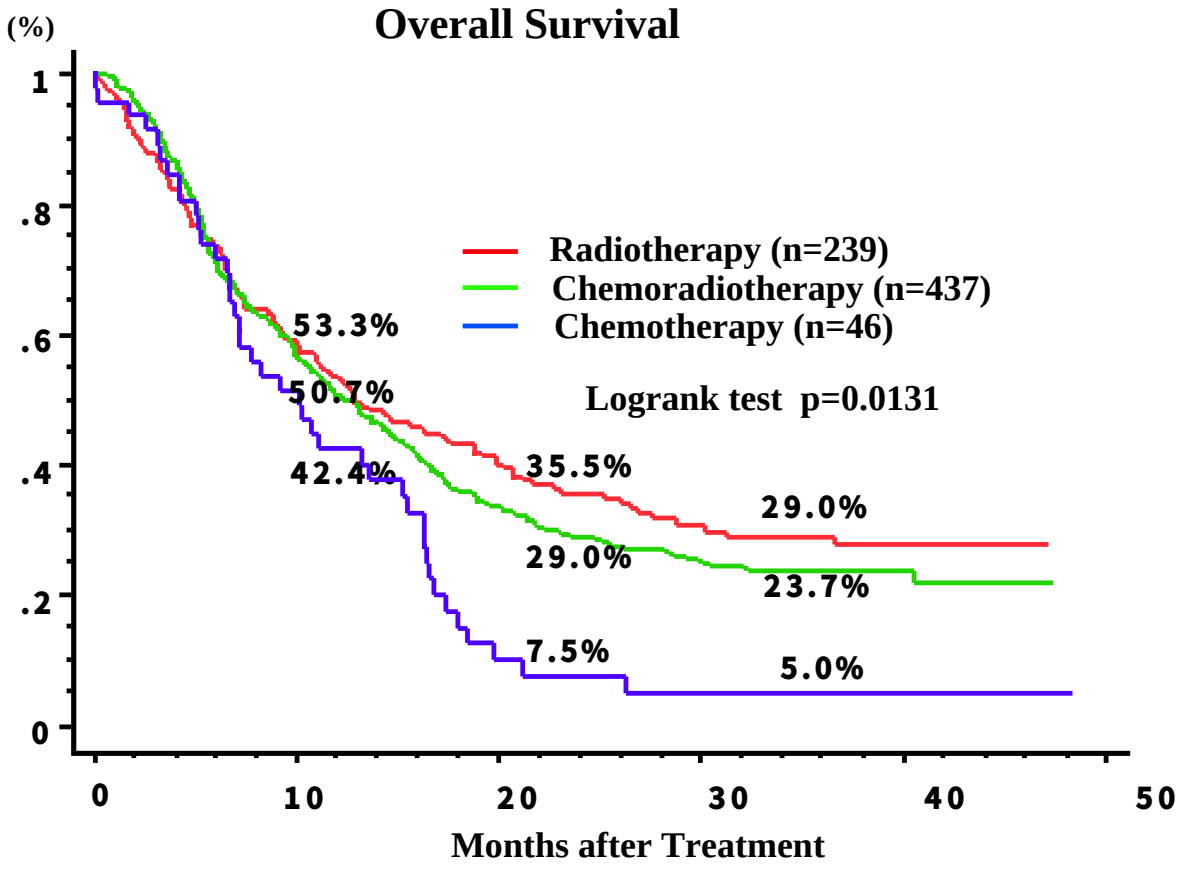


Figure 5) Cumulative survival curves of patients treated by chemotherapy and/or radiotherapy (cStage I-IIA)

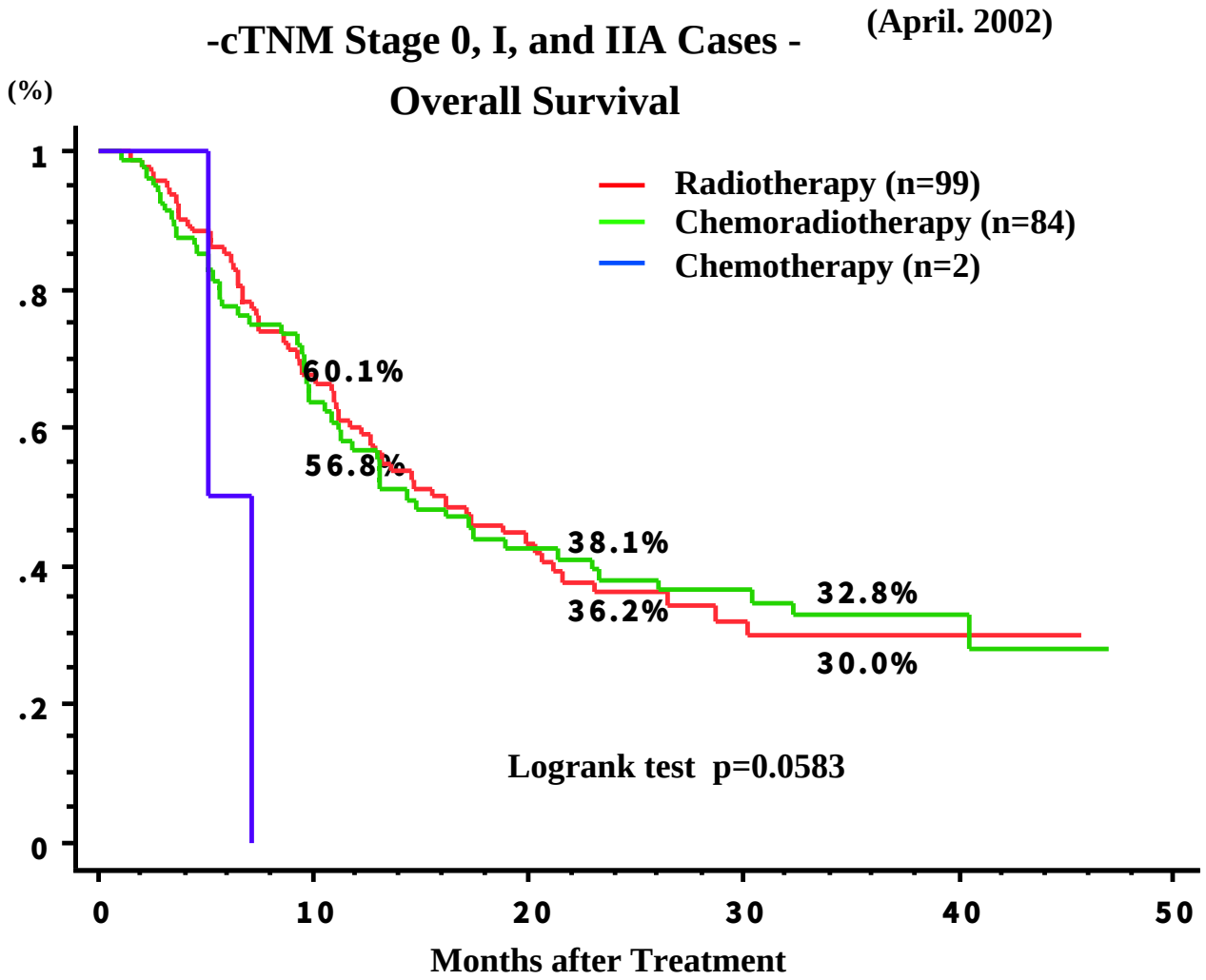
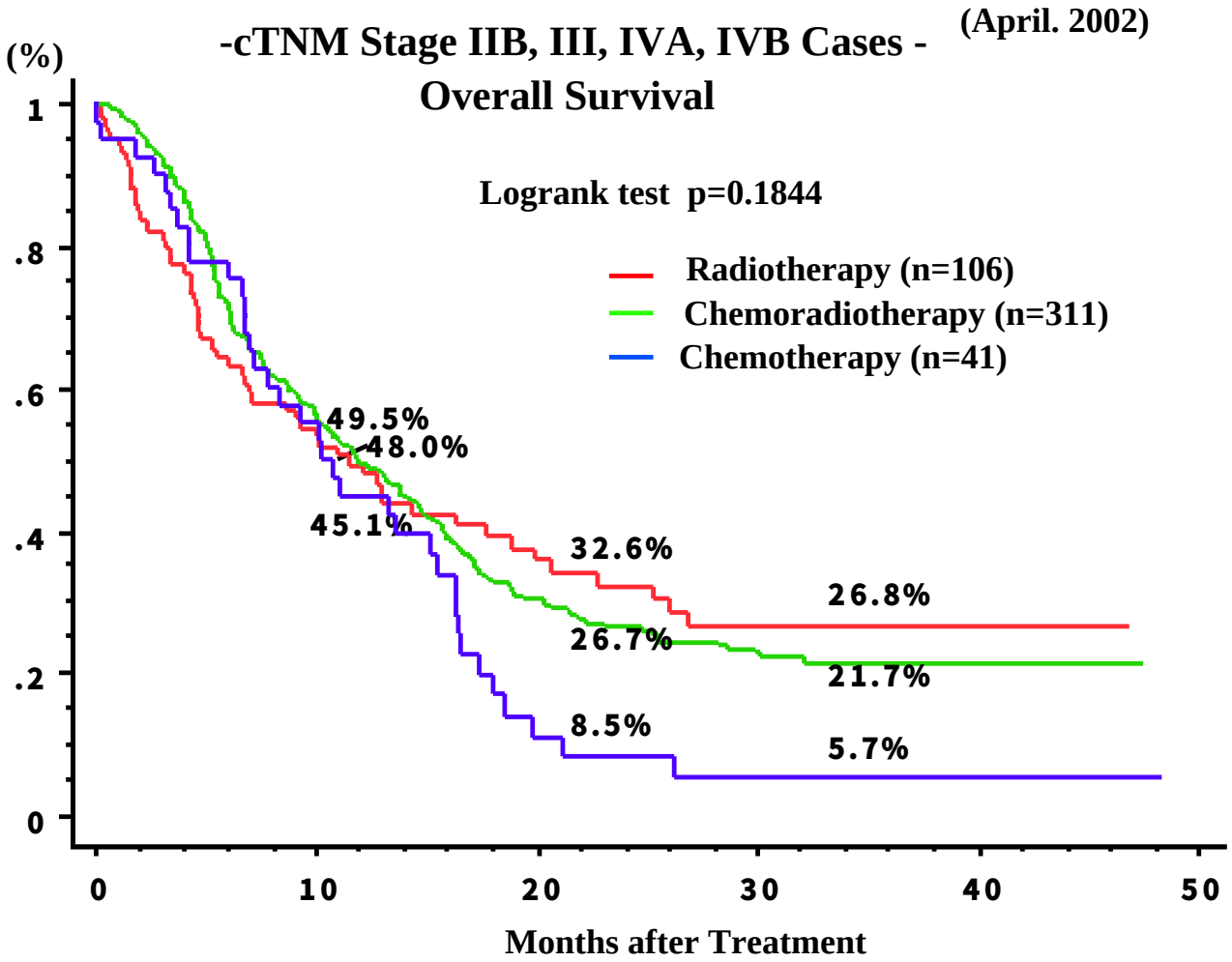


Figure 6) Cumulative survival curves of patients treated by chemotherapy and/or radiotherapy (cStage IIB-IVB)



IV. Clinical Results in Patients treated by Palliative Operation in 1998

Table 28) Palliative operation cases without esophagectomy

Treatment	Cases (%)
Surgery	26 (26.5%)
Surgery +radiotherapy	18 (18.4%)
Surgery + radiotherapy + endoscopic treatment	2 (2.0%)
Surgery + chemoradiotherapy	42 (42.9%)
Surgery + chemotherapy	9 (9.2%)
Surgery + endoscopic treatment	1 (1.0%)
Total	98 (100%)

Surgical treatment	Cases (%)
Probe thoraco / laparotomy	51 (52.0%)
Bypass-operation	14 (14.3%)
Gastrostomy / Jejunostomy	6 (6.1%)
Lymph adenectomy	16 (16.3%)
Others	11 (11.2%)
Total	98 (100%)

Radiotherapy	Cases (%)
No-irradiation	36 (36.7%)
Curative irradiation	33 (33.7%)
Palliative irradiation	29 (29.6%)
Unknown	0
Total	98 (100%)

Total doses (Gy)	Cases (%)
0	36 (36.7%)
2 - 19	2 (2.0%)
20 - 39	6 (6.1%)
40 - 59	24 (24.5%)
60 - 79	21 (21.4%)
80 - 99	2 (2.0%)
100 - `	0
Unknown	7 (7.1%)
Total	98 (100%)

Table 29) Effectiveness of treatments (Palliative operation cases without esophagectomy)

Chemotherapy	Cases (%)
(-)	45 (45.9%)
(+)	53 (54.1%)
Unknown	0
Total	98 (100%)

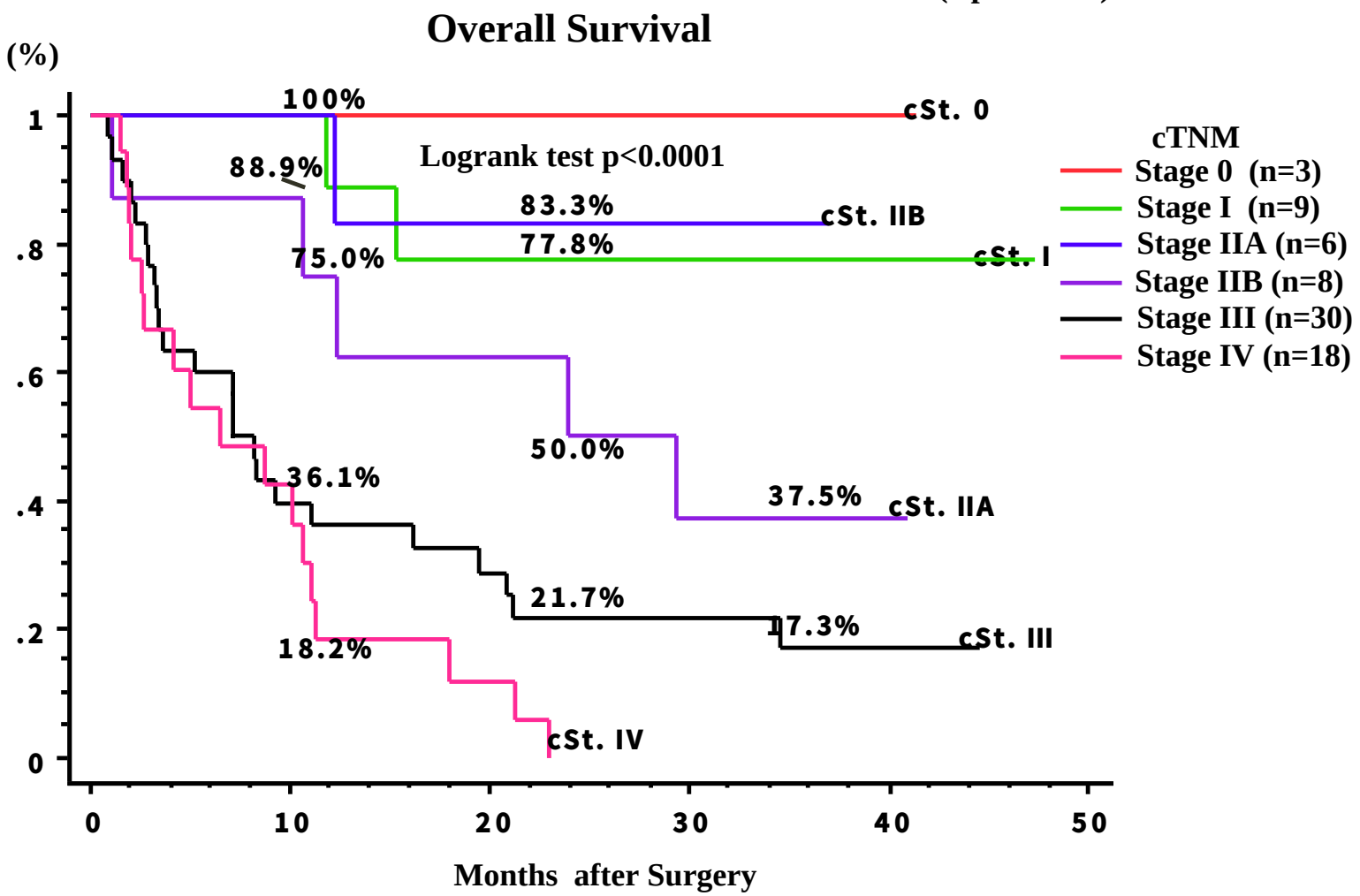
Surg + radiotherapy	Cases (%)
CR	2 (11.1%)
PR	4 (22.2%)
NC	3 (16.7%)
PD	1 (5.6%)
Not evaluated	2 (11.1%)
Unknown	6 (33.3%)
Total	18 (100%)

Surg + chemoradiotherapy	Cases (%)
CR	8 (18.2%)
PR	11 (25.0%)
NC	14 (31.8%)
PD	3 (6.8%)
Not evaluated	4 (9.1%)
Unknown	4 (9.1%)
Total	44 (100%)

Surg + chemotherapy	Cases (%)
CR	0
PR	2 (22.2%)
NC	2 (22.2%)
PD	1 (11.1%)
Not evaluated	1 (11.1%)
Unknown	3 (33.3%)
Total	9 (100%)

Figure 7) Cumurative survival curves of patients treated by palliative surgery (cTNM)

(April. 2002)



V. Clinical Results in Patients treated with Esophagectomy in 1998

Table 30) Cases of esophagectomy (treatment, surgical procedure, and location of the tumor)

Treatment	Cases	(%)
Esophagectomy	652	(34.6%)
Esophagectomy + radiotherapy*	591	(31.4%)
Esophagectomy + chemoradiotherapy**	351	(18.6%)
Esophagectomy + chemotherapy***	277	(14.7%)
Esophagectomy + endoscopic treatment	12	(0.6%)
Esophagectomy + other treatment	0	
Total	1883	(100%)

* : + endoscopic treatment (3 cases) , + other treatment (1 case)
** : + hyperthermia (9 cases), + endoscopic treatment (10 cases)
+ other treatment (1case)
***: + hyperthermia (1cases), + endoscopic treatment (9 cases)

Surgical procedures	Cases	(%)
Esophagectomy without reconstruction	1	(0.05%)
Esophagectomy + reconstruction (2-stage operation)	40	(2.1%)
Esophagectomy with reconstruction	1832	(97.3%)
Unknown	10	(0.5%)
Total	1883	(100%)

Location	Cases	(%)
Pharynx	20	(1.1%)
Cervical esophagus	70	(3.7%)
Upper thoracic esophagus	195	(10.4%)
Middle thoracic esophagus	956	(50.8%)
Lower thoracic esophagus	506	(26.9%)
Abdominal esophagus	107	(5.7%)
EG Junction	15	(0.8%)
Cardia	4	(0.2%)
Unknown	10	(0.5%)
Total	1883	(100%)

Table 31) Cases of esophagectomy (surgical approach and region of lymphadenectomy)

Approach	Cases	(%)
Cervical approach	59	(3.1%)
Right thoracotomy	1495	(79.4%)
Left thoracotomy	31	(1.6%)
Left thoracoabdominal apprroarch	50	(2.7%)
Laparotomy	28	(1.5%)
Transhiatal (without blunt dissection)	15	(0.8%)
Transhiatal (with blunt dissection)	115	(6.1%)
Sternotomy	16	(0.9%)
Others	20	(2.9%)
Unknown	54	(1.1%)
Total	1883	(100%)

Region of lymphadenectomy	Cases	(%)
(-)	40	(2.1%)
C	37	(2.0%)
C+UM	20	(1.1%)
C+UM+MLM	22	(1.2%)
C+UM+MLM+A	636	(33.8%)
C+UM+A	5	(0.3%)
C+MLM	0	
C+MLM+A	4	(0.2%)
C+A	12	(0.6%)
UM	5	(0.3%)
UM+MLM	28	(1.5%)
UM+MLM+A	650	(34.5%)
MLM+A	1	(0.05%)
MLM	10	(0.5%)
MLM+A	198	(10.5%)
A	77	(4.1%)
Unknown	138	(7.3%)
Total	1883	(100%)

C: bilateral cervical nodes
UM: upper mediastinal nodes
MLM:middle-lower mediastinal nodes
A:abdominal nodes

Table 32) Cases of esophagectomy (esophageal reconstruction)

Reconstruction route	Cases	(%)
(-)	1	(0.05%)
Antethoracic	199	(10.6%)
Retrosternal	718	(38.1%)
Posterior mediastinal	473	(25.1%)
High intrathoracic*	228	(12.1%)
Low intrathoracic**	95	(5.0%)
Transhiatal	28	(1.5%)
Cervical	31	(1.6%)
Others	2	(5.7%)
Unknown	108	(0.1%)
Total	1883	(100%)

Organs for esophageal replacement	Cases	(%)
(-)	1	(0.05%)
Whole stomach*	85	(4.5%)
Gastric tube**	1421	(75.4%)
Jejunum***	81	(4.3%)
Free junum****	27	(1.4%)
Colon*****	109	(5.8%)
Free colon	4	(0.2%)
Skin graft	0	
Others	35	(1.9%)
Unknown	120	(6.4%)
Total	1883	(100%)

* with upper mediastinal anastomosis

** with middle/lower mediastinal anastomosis

* : Free jejunum+Whole stomach (1 case)

** : Gastric tube+Jejunum (4 cases), Free jejunum+Gastric tube (3 cases)
Colon+Gastric tube+Free jejunum (1 case), Skin roll+Gastric Tube (1case)

***: Jejunum+Colon (1 case)

****: Free jejunum+Colon (1 case)

*****: Colon+Skin roll (1 case)

Table 33) Cases of intrathoracic esophagectomy (location of the tumor and reconstruction route)

Location	Upper thoracic		Middle thortacic		Lower thoracic		Total thoracic	
Reconstruction route	Cases	(%)	Cases	(%)	Cases	(%)	Cases	(%)
(-)	0		0		0		0	
Antethoracic	32	(164%)	96	(10.0%)	49	(9.7%)	177	(10.7%)
Retrosternal	65	(33.3%)	372	(38.9%)	192	(37.9%)	629	(38.0%)
Posterior mediastinal	44	(22.6%)	251	(26.3%)	130	(25.7%)	425	(25.6%)
High intrathoracic*	24	(12.3%)	112	(11.7%)	67	(13.2%)	203	(12.3%)
Low intrathoracic**	8	(4.1%)	46	(4.8%)	23	(4.5%)	77	(4.6%)
Transhiatal	1	(0.5%)	13	(1.4%)	9	(1.8%)	23	(1.4%)
Cervical	6	(3.1%)	13	(1.4%)	6	(1.2%)	25	(1.5%)
Others	0		1	(0.1%)	1	(0.2%)	2	(0.1%)
Unknown	15	(7.7%)	52	(5.4%)	29	(5.7%)	96	(5.8%)
Total	195	(100%)	956	(100%)	506	(100%)	1657	(100%)

Table 34) Cases of esophagectomy for external lesion of the thorax (location of the tumor and reconstruction route)

Location	Pharynx		Cervical esophagus		Abdominal esophagus		EGJ/Cardia	
Reconstruction route	Cases	(%)	Cases	(%)	Cases	(%)	Cases	(%)
(-)	0		0		1	(0.9%)	0	
Antethoracic	0		13	(18.6%)	8	(7.5%)	1	(5.3%)
Retrosternal	8	(40.0%)	26	(37.1%)	14	(41.1%)	10	(52.6%)
Posterior mediastinal	4	(20.0%)	15	(21.4%)	23	(21.5%)	5	(26.3%)
High intrathoracic*	2	(10.0%)	6	(8.6%)	17	(15.9%)	0	
Low intrathoracic**	3	(15.0%)	4	(5.7%)	9	(8.4%)	2	(10.5%)
Transhiatal	0		2	(2.9%)	2	(1.9%)	0	
Cervical	3	(15.0%)	2	(2.9%)	1	(0.9%)	0	
Others	0		0		0		0	
Unknown	0		2	(2.9%)	2	(1.9%)	1	(5.3%)
Total	20	(100%)	70	(100%)	107	(100%)	19 *	(100%)

* E=G:15cases, G:4 cases

Table 35) Cases of intrathoracic esophagectomy (location of the tumor and lymph node dissection)

Location	Upper thoracic		Middle thoracic		Lower thoracic		Total	
Region of lymphadenectomy	Cases	(%)	Cases	(%)	Cases	(%)	Cases	%)
(-)	5	(2.6%)	20	(2.1%)	10	(2.0%)	35	(2.1%)
C	6	(3.1%)	16	(1.7%)	7	(1.4%)	29	(1.8%)
C+UM	1	(0.5%)	11	(1.2%)	7	(1.4%)	19	(1.1%)
C+UM+MLM	3	(1.5%)	12	(1.3%)	4	(0.8%)	19	(1.1%)
C+UM+MLM+A	67	(34.4%)	327	(34.2%)	168	(33.2%)	562	(33.9%)
C+UM+A	1	(0.5%)	2	(0.2%)	2	(0.4%)	5	(0.3%)
C+MLM	0		0		0		0	
C+MLM+A	0		1	(0.1%)	2	(0.4%)	3	(0.2%)
C+A	3	(1.5%)	4	(0.4%)	5	(1.0%)	12	(0.7%)
UM	0		1	(0.1%)	3	(0.6%)	4	(0.2%)
UM+MLM	1	(0.5%)	18	(1.9%)	7	(1.4%)	26	(1.6%)
UM+MLM+A	67	(34.4%)	334	(34.9%)	172	(34.0%)	573	(34.6%)
UM+A	0		1	(0.1%)	0		1	(0.06%)
MLM	1	(0.5%)	6	(0.6%)	2	(0.4%)	9	(0.5%)
MLM+A	22	(11.3%)	87	(9.1%)	59	(11.7%)	168	(10.1%)
A	5	(2.6%)	48	(5.0%)	19	(3.8%)	72	(4.3%)
Unknown	13	(6.7%)	68	(7.1%)	39	(7.7%)	120	(7.2%)
Total	195	(100%)	956	(100%)	506	(100%)	1657	(100%)

C: bilateral cervical nodes
UM: upper mediastinal nodes
MLM: middle-lower mediastinal nodes
A: abdominal nodes

Table 36) Cases of esophagectomy for external lesion of the thorax (location of the tumor and lymph node dissection)

Location	Pharynx		Cervical esophagus		Abdominal esophagus		EGJ/Cardia	
Region of lymphadenectomy	Cases	(%)	Cases	(%)	Cases	(%)	Cases	(%)
(-)	0		2	(2.9%)	3	(2.8%)	0	
C	4	(20.0%)	2	(2.9%)	1	(0.9%)	1	(5.3%)
C+UM	0		0		1	(0.9%)	0	
C+UM+MLM	0		3	(4.3%)	0		0	
C+UM+MLM+A	5	(25.0%)	28	(40.0%)	36	(33.6%)	5	(26.3%)
C+UM+A	0		0		0		0	
C+MLM	0		0		0		0	
C+MLM+A	0		0		1	(0.9%)	0	
C+A	0		0		0		0	
UM	1	(5.0%)	0		0		0	
UM+MLM	0		0		2	(1.9%)	0	
UM+MLM+A	7	(35.0%)	22	(31.4%)	38	(35.5%)	8	(42.1%)
UM+A	0		0		0		0	
MLM	0		0		1	(0.9%)	0	
MLM+A	3	(15.0%)	11	(15.7%)	13	(12.2%)	3	(15.8%)
A	0		0		5	(4.7%)	0	
Unknown	0		2	(2.9%)	6	(5.6%)	2	(10.5%)
Total	20	(100%)	70	(100%)	107	(100%)	19*	(100%)

*E=G:15cases, G:4cases

Table 37) Cases of esophagectomy (vascular anastomosis and endoscopic surgery)

Vascular anastomosis	Cases	(%)
(-)	1680	(89.2%)
(+)	94	(5.0%)
Unknown	109	(5.8%)
Total	1883	(100%)

Endoscopic surgery	Cases	(%)
(-)	1690	(89.8%)
Thoracoscopy	45	(2.4%)
Thoracoscopy assist	58	(3.1%)
Mediastinoscopy assist	7	(0.4%)
Laparoscopy assist	16	(0.9%)
Thoracoscopy & Laparoscopy assist	2	(0.1%)
Unknown	65	(3.5%)
Total	1883	(100%)

Table 38) Cases of esophagectomy (operative findings of cT and combined resected organs)

Macroscopic T-category (cT)	Cases	(%)
T0	44	(2.3%)
T1	412	(21.9%)
T2	352	(18.7%)
T3	766	(40.7%)
T4	227	(12.1%)
Unknown	82	(4.4%)
Total	1883	(100%)

cT4 by lymphatic metastasis	Cases	(%)
(-)	1663	(88.3%)
N1(T4)	40	(2.1%)
N2(T4)	81	(4.3%)
N3(T4)	29	(1.5%)
N4(T4)	18	(1.0%)
Nx(T4)	3	(0.2%)
Unknown	49	(2.6%)
Total	1883	(100%)

Organs*	Cases	(%)
(-)	198	(46.3%)
Larynx	25	(5.8%)
Trachea	13	(3.0%)
Aorta	1	(0.2%)
Lung	21	(4.9%)
Pericardium	11	(2.6%)
Diaphragm	21	(4.9%)
Stomach	20	(4.6%)
Pancreas+spleen	8	(1.9%)
Thoracic duct	35	(8.2%)
Recurrent nerve	15	(3.5%)
Recurrent nerve (main trunk)	2	(0.5%)
Others	45	(10.5%)
Unknown	13	(3.0%)
Total of resected organs	428	(100%)
Total of cT4 cases	364	

*: Organs resected in addition to the esophagus

Table 39) Cases of esophagectomy (operative findings of the tumor feature and size)

Macroscopic type	Cases	(%)
0-Ip	35	(1.9%)
0-Ipl	89	(4.7%)
0-Isep	29	(1.5%)
0-IIa	105	(5.6%)
0-IIb	52	(2.8%)
0-IIc	215	(11.4%)
0-III	22	(1.2%)
0-V	12	(0.6%)
1p	32	(1.7%)
1c	19	(1.0%)
1pl	65	(3.5%)
1sep	1	(0.05%)
2	524	(27.8%)
3	498	(26.4%)
4s	34	(1.8%)
4ns	7	(0.4%)
5c	12	(0.6%)
5s	7	(0.4%)
5u	71	(3.8%)
Unknown	54	(2.9%)
Total	1883	(100%)

Size of Tumor (mm)	Cases	(%)
- 9	25	(1.3%)
10 - 19	143	(7.6%)
20 - 29	232	(12.3%)
30 - 39	279	(14.8%)
40 - 49	270	(14.3%)
50 - 59	293	(15.6%)
60 - 69	205	(10.9%)
70 - 79	124	(6.6%)
80 - 89	91	(4.8%)
90 - 99	38	(2.0%)
100 -109	24	(1.3%)
110 -119	17	(0.9%)
120 -129	13	(0.7%)
130 -139	6	(0.3%)
140 -149	4	(0.2%)
150 -	10	(0.5%)
Unknown	109	(5.8%)
Total	1883	(100%)

Table 40) Histologic types of resected specimen and multiple primary cancer

Histologic types		Cases	(%)
Not examined		0	
SCC	SCC	128	(6.8%)
	Well diff.	433	(23.0%)
	Moderately diff.	773	(41.1%)
	Poorly diff.	368	(19.5%)
Adenocarcinoma		29	(1.5%)
Barrett's adenocarcinoma		9	(0.5%)
Adenosquamous cell carcinoma		9	(0.5%)
Epidermoid carcinoma		3	(0.2%)
Adenoid cystic carcinoma		3	(0.2%)
Basoloid carcinoma		22	(1.2%)
Undiff. carcinoma (small cell)		12	(0.6%)
Undiff. carcinoma		7	(0.4%)
Sarcoma		2	(0.1%)
So-called carcinosarcoma		13	(0.7%)
Pseudsarcoma		0	
True carcinosarcoma		2	(0.1%)
Malignant melanoma		1	(0.05%)
Dysplasia		2	(0.1%)
Other		17	(0.6%)
Unknown		56	(3.0%)
Total		1883	(100%)

Multiple primary cancer	Cases	(%)
(-)	1587	(84.3%)
(+)	242	(12.9%)
Unknown	54	(2.9%)
Total	1883	(100%)

Table 41) Pathological findings of resected specimen (residual cancer, intraepithelial spread, and infiltrative growth pattern)

Residual cancer cells at the transected stump

proximal (p)/distal (d)	Cases	(%)
p / d (-)	1802	(95.7%)
p / d (+)	39	(2.1%)
Unknown	42	(2.2%)
Total	1883	(100%)

Residual cancer cell in the cut surface of the esophageal wall (ew) of the resected spacemen

ew	Cases	(%)
ew(-)	1720	(91.3%)
ew(+)	126	(6.7%)
Unknown	37	(2.0%)
Total	1883	(100%)

Intraepithelial spread (ie)

ie	Cases	(%)
ie(-)	1094	(58.1%)
ie(+)	628	(33.4%)
ie(++)superficial	48	(2.5%)
Unknown	113	(6.0%)
Total	1883	(100%)

Infiltrative growth pattern (inf)

inf	Cases	(%)
inf **α**	285	(15.1%)
inf **β**	1012	(53.7%)
inf **γ**	203	(10.8%)
Unknown	383	(20.3%)
Total	1883	(100%)

Table 42) Pathological findings of resected specimen (vessel invasion and skip metastasis)

Lympatic vessel invasion (ly)		Cases	(%)
ly0		577	(30.6%)
ly(+)	ly(+)	87	(4.6%)
	ly1	554	(29.4%)
	ly2-3	591	(31.4%)
Unknown		74	(3.9%)
Total		1883	(100%)

Blood vessel invasion (v)		Cases	(%)
v0		905	(48.1%)
v(+)	v(+)	50	(2.7%)
	v1	504	(26.8%)
	v2-3	342	(18.1%)
Unknown		82	(4.4%)
Total		1883	(100%)

Skip metastasis in the esophageal wall (im-e)	Cases	(%)
im-e (-)	1640	(87.1%)
im-e (+)	179	(9.5%)
Unknown	64	(3.4%)
Total	1883	(100%)

Skip metastasis in the stomach wall (im-st)	Cases	(%)
im-st (-)	1750	(92.9%)
im-st (+)	57	(3.0%)
Unknown	76	(4.0%)
Total	1883	(100%)

Table 43) Pathological findings of resected specimen (pT)

Depth of tumor invasion

pT-category	Cases	(%)
Not examined	4	(0.2%)
pT0	17	(0.9%)
pTis	40	(2.1%)
pT1a	126	(6.7%)
pT1b	414	(22.0%)
pT2	233	(12.4%)
pT3	807	(42.9%)
pT4	169	(9.0%)
Unknown	73	(3.9%)
Total	1883	(100%)

Subclassification of superficial carcinoma

Subclassification	Cases	(%)
m1 (pTis)*	36	(6.2%)
m2 (pT1a)**	22	(3.8%)
m3 (pT1a)***	101	(17.4%)
sm1(pT1b)	61	(10.5%)
sm2 (pT1b)	117	(20.2%)
sm3 (pT1b)	152	(26.2%)
Unknown (pT1b)	91	(15.7%)
Total	580	(100%)

* ep = epithel

** lpm = lamina proplia mucosa

*** mm = muscularis mucosa

Table 44) Pathological findings of resected specimen (pN)

Lymph node metastasis	Cases	(%)
n(-)	728	(38.7%)
n1+)	179	(9.5%)
n2(+)	553	(29.4%)
n3(+)	209	(11.1%)
n4(+)	144	(7.6%)
Unknown	70	(3.7%)
Total	1883	(100%)

Number of lymph node metastasis	Cases	(%)
0	728	(38.7%)
1~3	603	(32.0%)
4~7	249	(13.2%)
8~	177	(9.4%)
Unknown	126	(6.7%)
Total	1883	(100%)

Table 45) Pathological findings of resected specimen (grade of lymph node metastasis corrected using number of metastasis and fields of lymph node metastasis)

Grade of lymph node metastasis

(corrected using number of metastasis)

Grade of metastasis	Cases	(%)
gN0	728	(38.7%)
gN1(n1a)	157	(8.3%)
gN2(n1b)	13	(0.7%)
gN2(n2a)	335	(17.8%)
gN3(n1c)	1	(0.05%)
gN3(n2b)	146	(7.8%)
gN3(n3a)	71	(3.8%)
gN4(n2c)	44	(2.3%)
gN4(n3b)	59	(3.1%)
gN4(n3c)	64	(3.4%)
gN4(n4a)	24	(1.3%)
gN4(n4b)	42	(2.2%)
gN4(n4c)	65	(3.5%)
Unknown	134	(7.1%)
Total	1883	(100%)

Number of lymph node metastasis

a : 1~3

b : 4~7

c : 8~

Fields of lymph node metastasis

Field of metastasis	Cases	(%)
n(-)	728	(38.7%)
C	58	(3.1%)
A+C	74	(3.9%)
A+B+C	96	(5.1%)
B+C	11	(0.6%)
A	247	(13.1%)
A+B	274	(14.6%)
B	269	(14.3%)
Unknown	126	(6.7%)
Total	1883	(100%)

A: mediastinal lymph nodes

B: abdominal lymph nodes

C: cervical lymph nodes

Fig. 8) N-category in Japanese Classification (JSED 1998 ~)

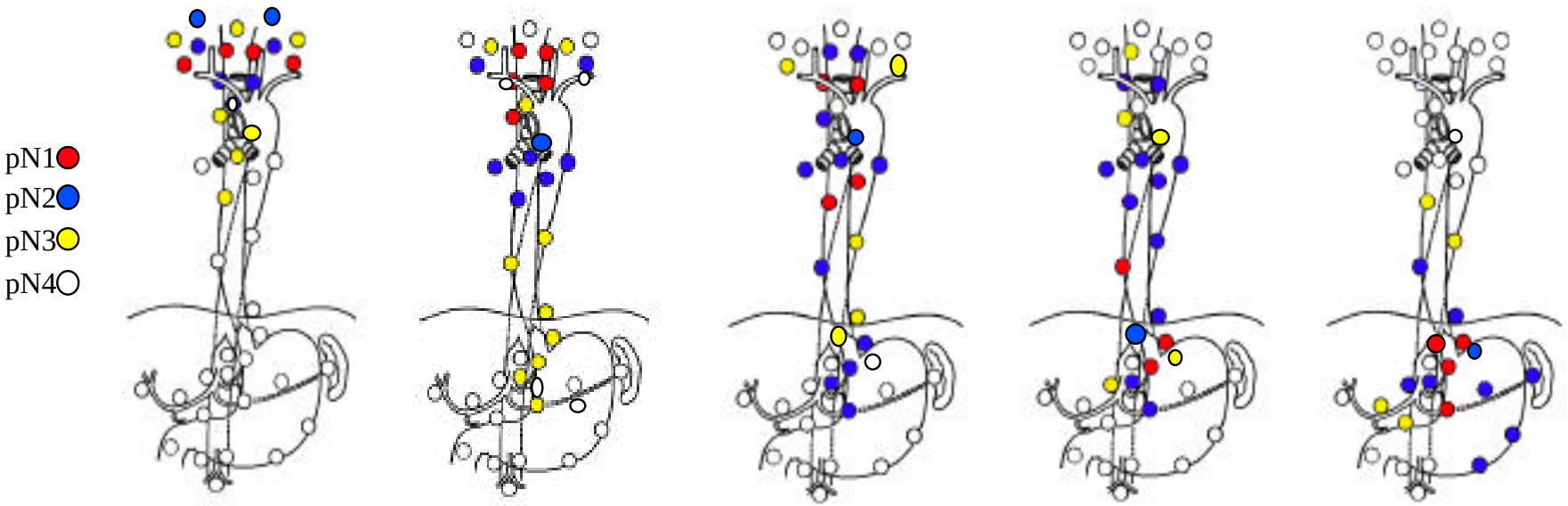


Fig. 9) Grade of metastasis (gN) corrected by number of metastatic node (JSED 1998 ~)

pN-category of JSED	Number of lymph node metastasis			
	0	a:(1~3)	b:(4~7)	c:(8~)
pN0	gN0			
pN1		gN1	gN2	gN3
pN2		gN2	gN3	
pN3		gN3	gN4	
pN4				

Fig. 10) Pathorogical Stage of JSED (1998 ~)

	gN0	gN1	gN2	gN3	gN4	M1
Tis	0					
T1a		I				
T1b	I	II	III	III	IVa	IVb
T2						
T3						
T4	III					

Table 46) Pathological findings of resected specimen (distant metastasis, stage, grade of dissection, and curability)

Distant metastasis (pM)	Cases	(%)
pM0	1753	(93.1%)
pM1	52	(2.8%)
Unknown	78	(4.1%)
Total	1883	(100%)

Pathological stage	Cases	(%)
0	132	(7.0%)
I	215	(11.4%)
II	453	(24.1%)
III	459	(24.4%)
IVa	326	(17.3%)
IVb	42	(2.2%)
Unknown	256	(13.6%)
Total	1883	(100%)

Grade of dissection (D)	Cases	(%)
D0	156	(8.3%)
DI	212	(11.3%)
DII	667	(35.4%)
DIII	757	(40.2%)
Unknown	91	(4.8%)
Total	1883	(100%)

Curability	Cases	(%)
Absolutely curative (a)	1048	(55.7%)
Relatively curative (b)	556	(29.5%)
Absolutely non-curative (c)	208	(11.0%)
Unknown	71	(3.8%)
Total	1883	(100%)

Table 47) Pathological findings of resected specimen (residual tumor, multiple cancers, and multiple lesions)

Residual tumor (R)	Cases	(%)
R0	1529	(81.2%)
R1	125	(6.6%)
R2	134	(7.1%)
Rx	95	(5.1%)
Total	1883	(100%)

Primary multiple cancers	Cases	(%)
(-)	1587	(84.3%)
(+)	242	(12.9%)
Unknown	54	(2.9%)
Total	1883	(100%)

Multiple malignant lesions	Cases	(%)
(-)	1496	(79.4%)
(+)	258	(13.7%)
Unknown	129	(6.9%)
Total	1883	(100%)

Number of malignant lesions	Cases	(%)
0	1496	(79.4%)
1	47	(2.5%)
2	139	(7.4%)
3	42	(2.2%)
4	7	(0.4%)
5 ~	7	(0.4%)
Unknown	145	(7.7%)
Total	1883	(100%)

Table 48) Adjuvant therapy for cases of esophagectomy

Radiotherapy	Cases	(%)
(-)	941	(50.0%)
Preoperative	343	(18.2%)
Pre+intraoperative(IOR)	1	(0.05%)
Pre+postoperative	17	(0.9%)
IOR	4	(0.2%)
IOR+postoperative	22	(1.2%)
Postoperative	406	(21.6%)
Time to recurrence	147	(7.8%)
Unknown	2	(0.1%)
Total	1883	(100%)

Doses of irradiation (Gy)	Cases	(%)
0	941	(68.0%)
1 ~ 19	4	(1.7%)
20 ~ 39	78	(5.6%)
40 ~ 59	195	(13.8%)
60 ~ 79	78	(6.8%)
80 ~ 99	6	(0.5%)
100~	3	(0.2%)
Unknown	578	(3.4%)
Total	1883	(100%)

Chemotherapy	Cases	(%)
(-)	1262	(67.0%)
Preoperative	271	(14.4%)
Pre+intraoperative(IOR)	1	(0.05%)
Pre+IOR+postoperative	1	(0.05%)
Pre+postoperative	39	(2.1%)
Intraoperative (IOR)	1	(0.05%)
IOR+postoperative	1	(0.05%)
Postoperative	244	(13.0%)
Time to recurrence	39	(2.1%)
Unknown	24	(1.3%)
Total	1883	(100%)

Type of chemotherapy	Cases	(%)
(-)	1262	(67.0%)
Chemotherapy alone	282	(47.2%)
Concurent chemoradiotherapy	132	(22.1%)
Sequential chemoradiotherapy	146	(24.5%)
Others	8	(1.3%)
Unknown	29	(4.9%)
Total	1883	(100%)

Table 49) Outcome of cases with esophagectomy

Outcome	Cases (%)
Alive	1040 (55.2%)
Dead	686 (36.4%)
Lost of information	62 (3.3%)
Unknown	95 (5.1%)
Total	1883 (100%)

Courses of death	Cases (%)
Death due to recurrence	499 (72.7%)
Death due to other cancer	8 (1.2%)
Death due to other diseases(rec+)	10 (1.5%)
Death due to other diseases(rec-)	39 (5.7%)
Death due to other diseases(rec?)	5 (0.7%)
Operative death*	30 (4.4%)
Postoperative hospital death**	53 (7.7%)
Unknown	42 (6.1%)
Total death cases	686 (100%)

Initial recurrence lesion of death cases	Cases (%)
None	105 (11.0%)
Lymph node	250 (26.2%)
Lung	102 (10.7%)
Liver	107 (11.2%)
Bone	69 (7.2%)
Brain	9 (0.8%)
Primary lesion	104 (10.9%)
Dissemination	62 (6.5%)
Anastomotic region	7 (0.7%)
Others	37 (3.9%)
Unknown	104 (10.9%)
Total of recurrence lesion	955 (100%)
Total death cases	686

* Death within 30 days

** Death over 30 days

Figure 11) Overall survival curves of patients treated by esophagectomy (1998)

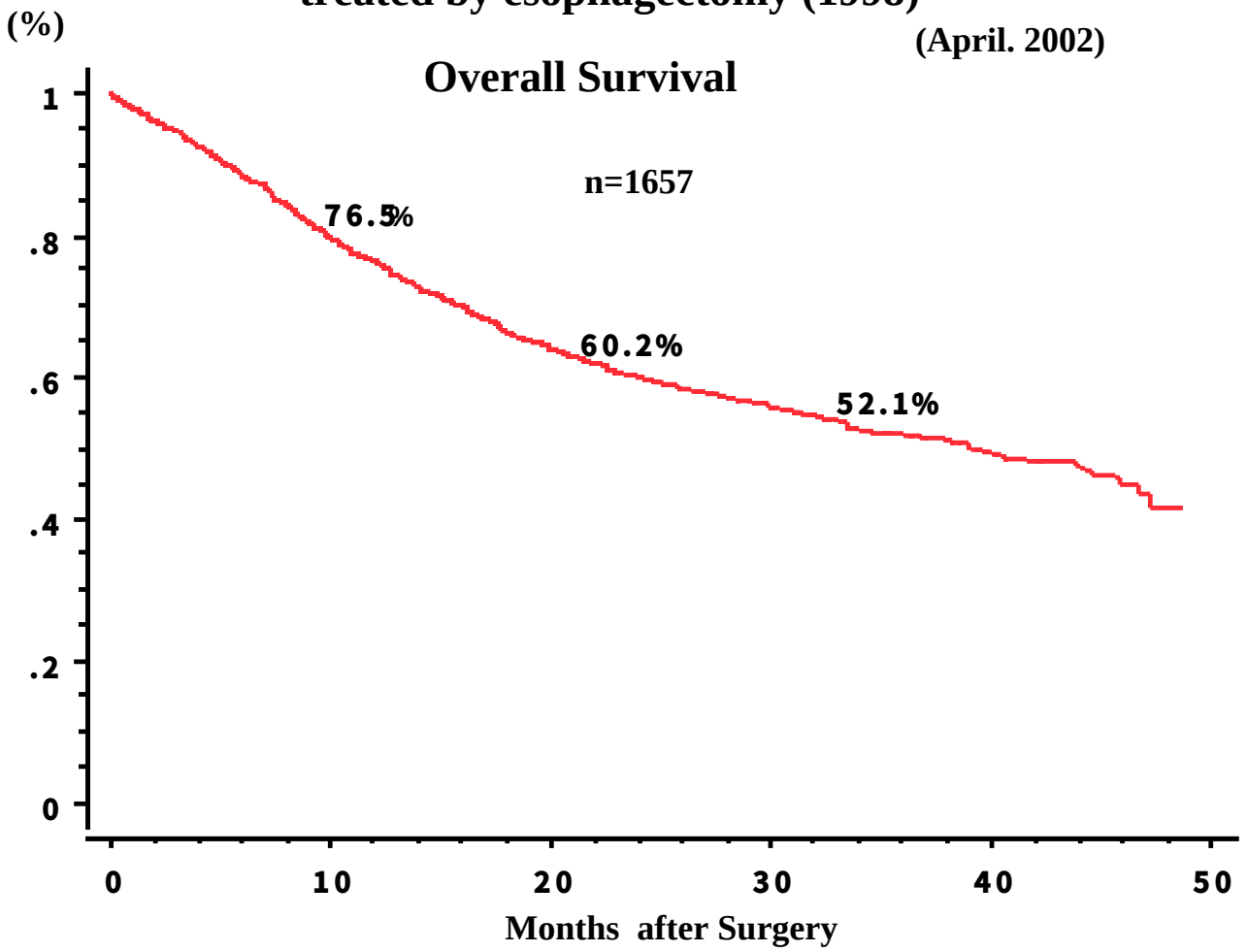


Figure 12) Survival of patients treated by esophagectomy in relation to depth of tumor invasion (pT)

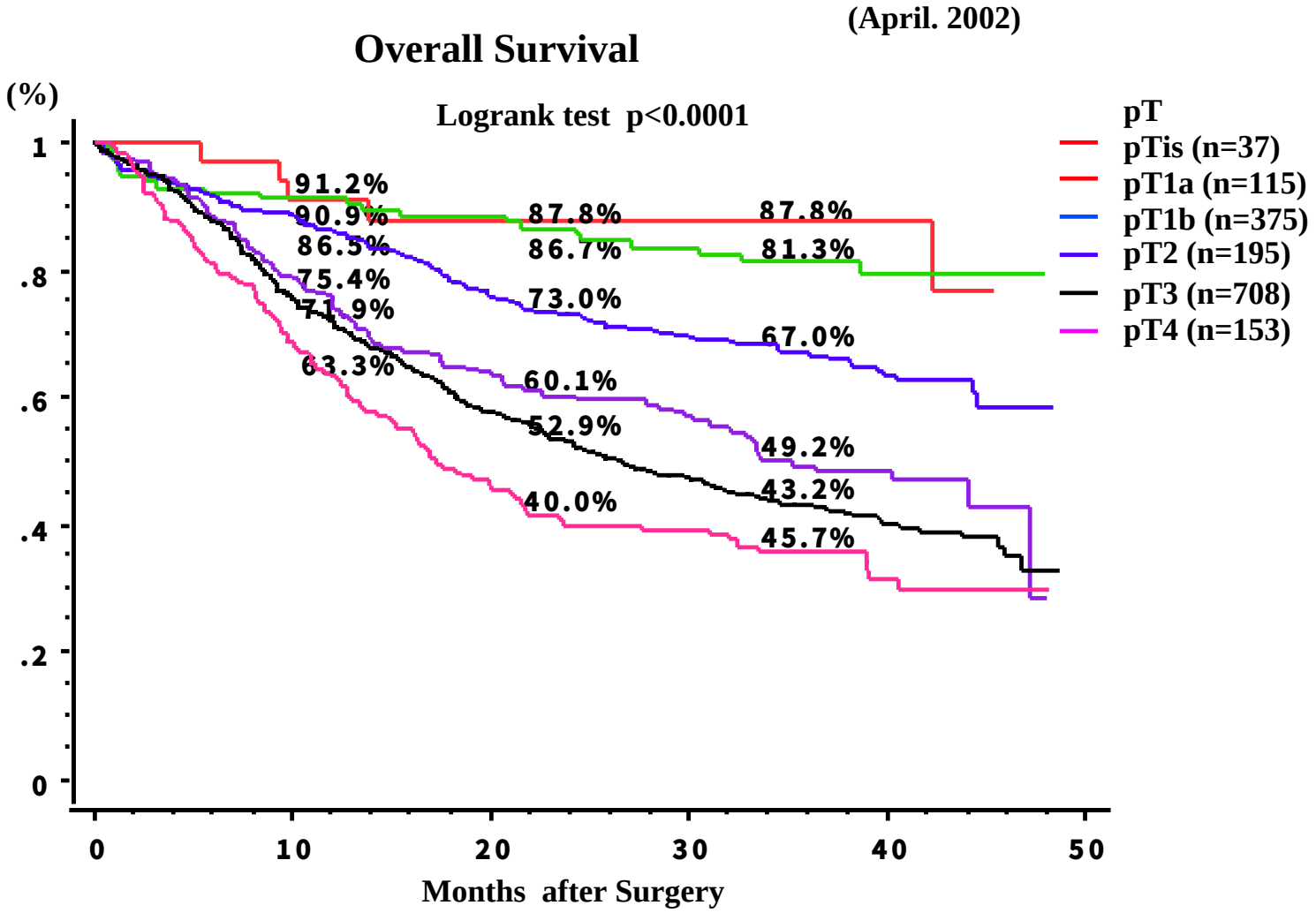


Figure 13) Survival of patients treated by esophagectomy in relation to lymph node metastasis (pN)

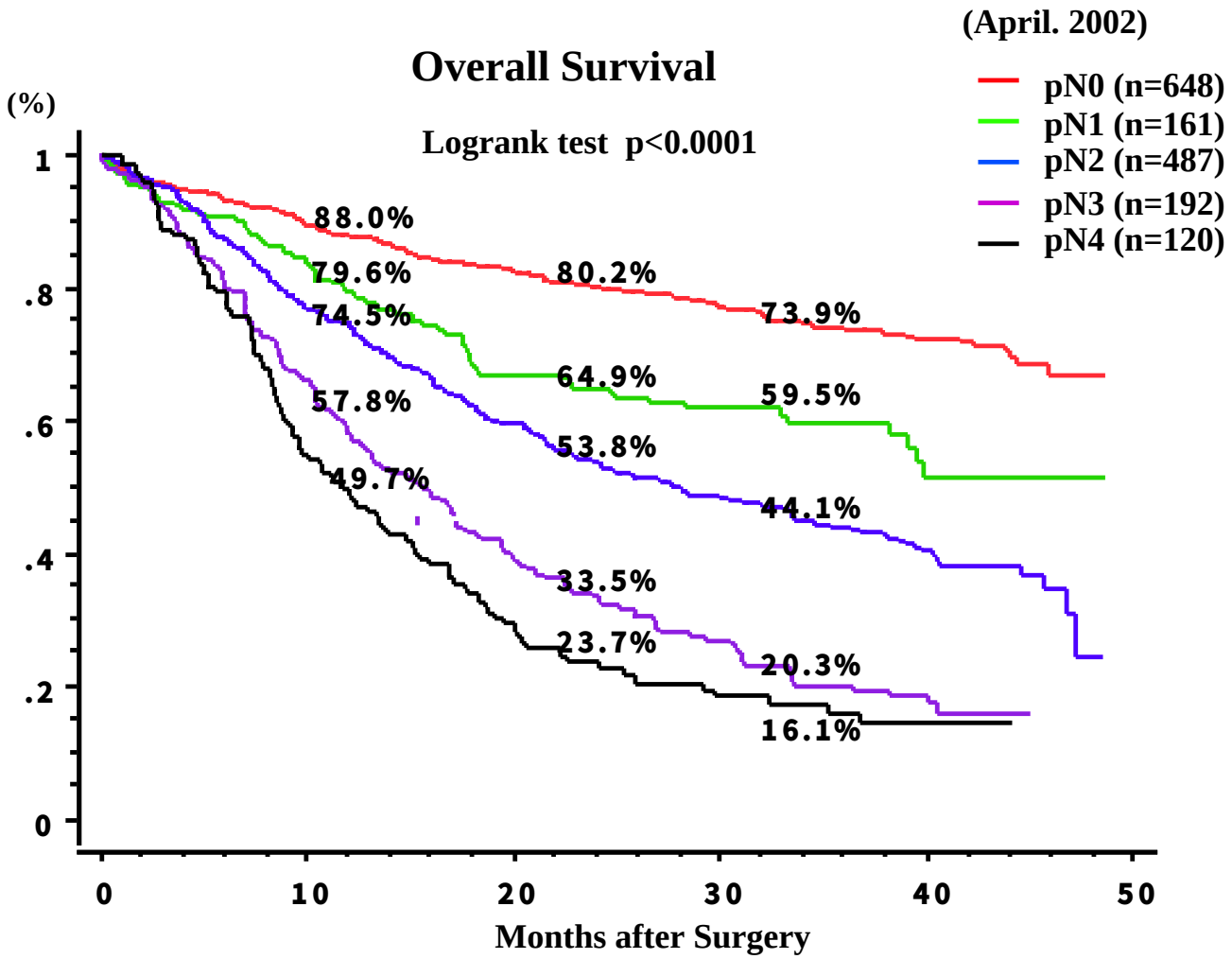


Figure 14) Survival of patients treated by esophagectomy in relation to pathological stage

(April. 2002)

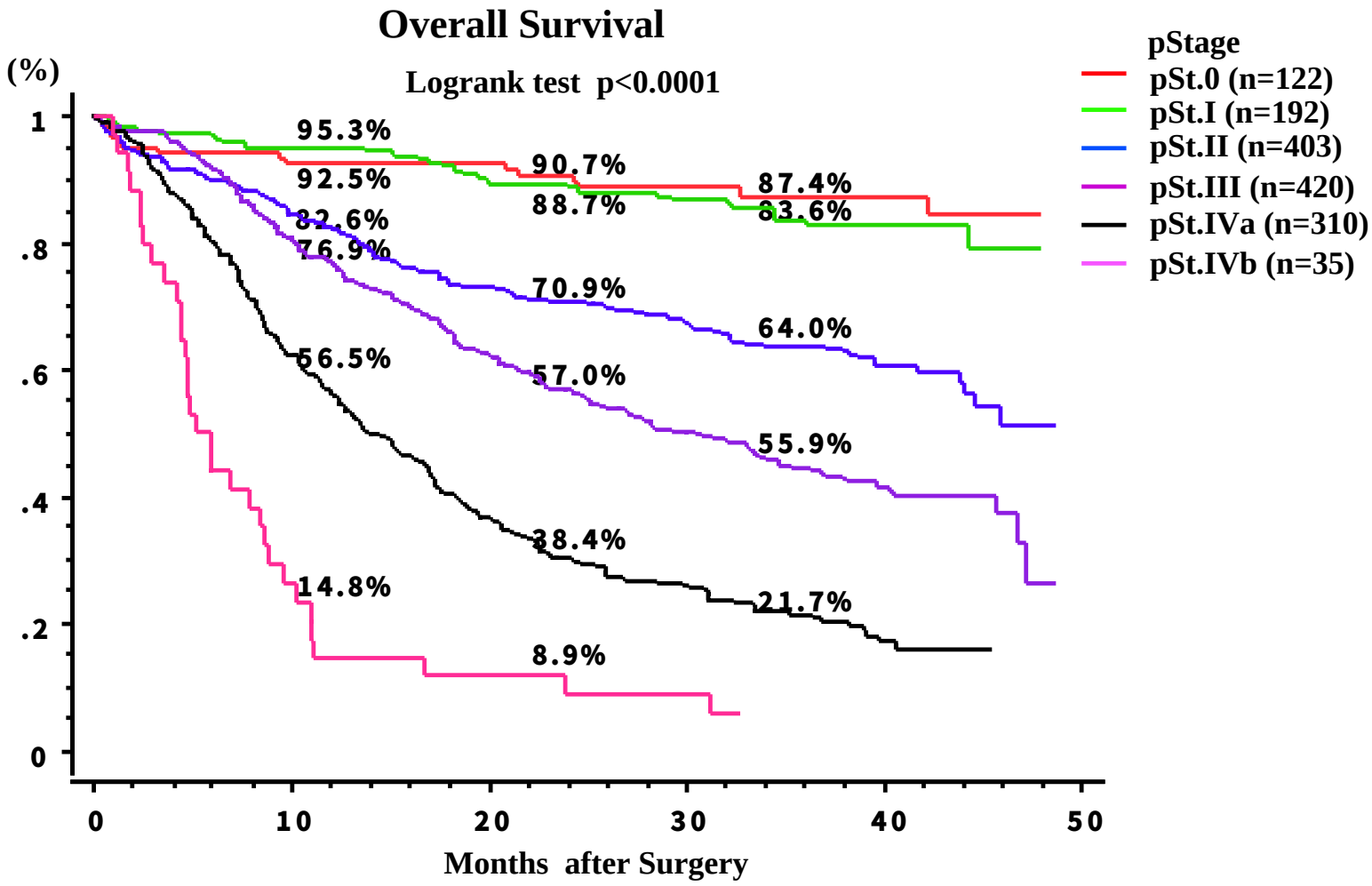


Figure 15) Survival of patients treated by esophagectomy in relation to residual tumor (R)

(April. 2002)

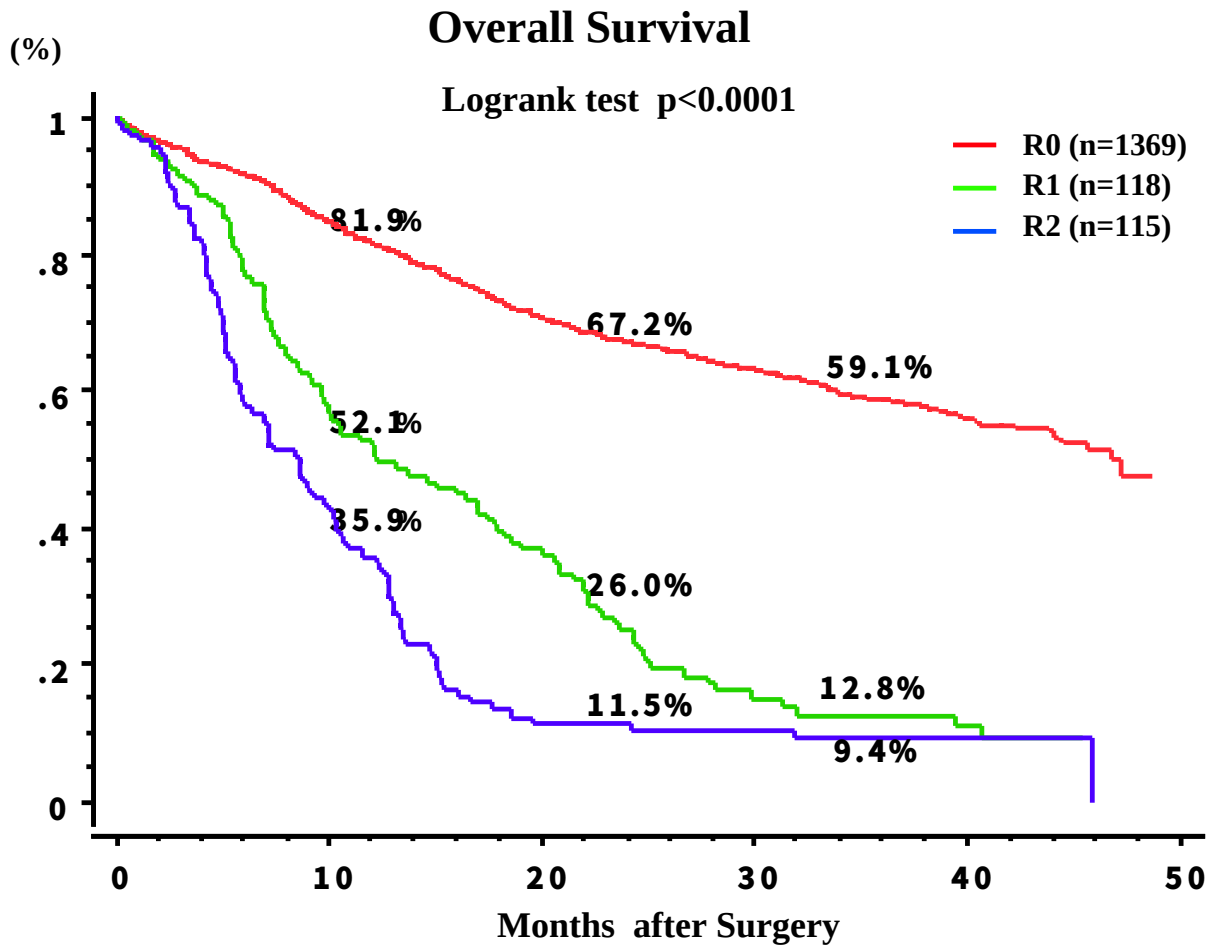


Figure 16) Survival of patients treated by esophagectomy in relation to number of metastatic node

(April. 2002)

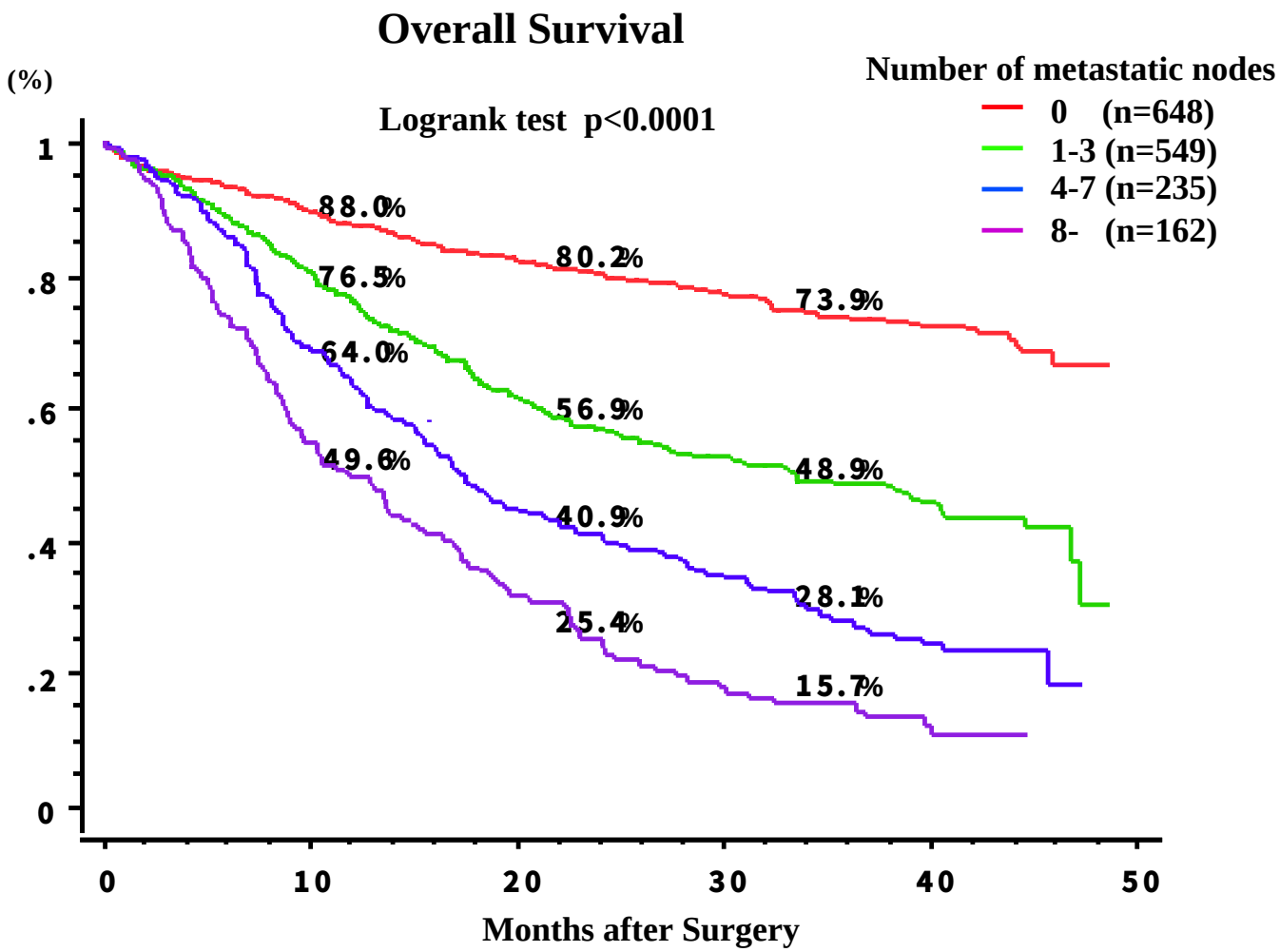
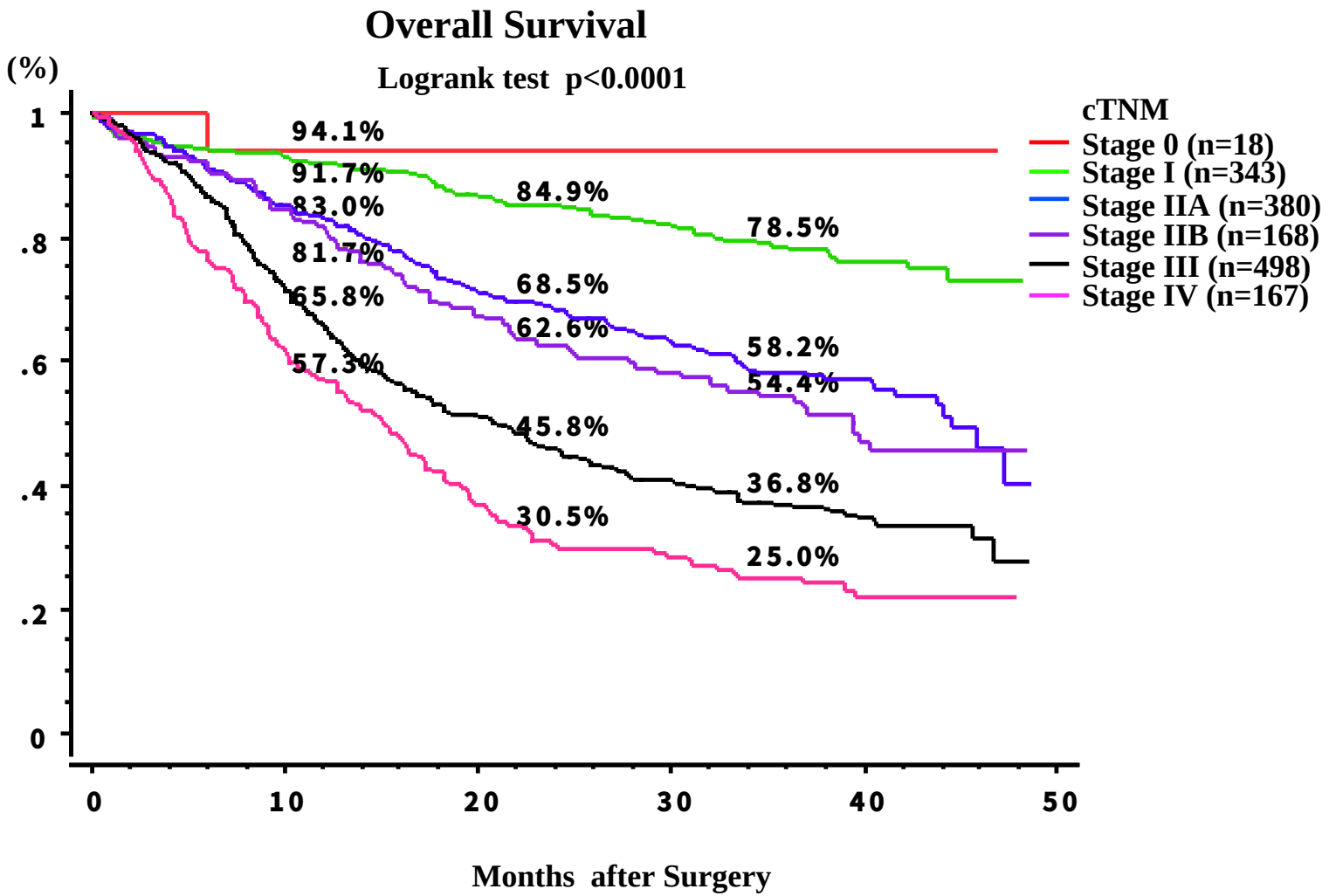


Figure 17) Survival of patients treated by esophagectomy in relation to clinical TNM-Stage

(April. 2002)



Comprehensive Registry of Esophageal Cancer in Japan (1999)

JSED

Contents

IV. Clinical Results in Patients treated by Palliative Operation in 1999

V. Clinical Results in Patients treated with Esophagectomy in 1999

I. Clinical Factors of Esophageal Cancer Patients treated in 1999

1. Institutions registrating cases in 1999

Institutions (No.1)

Inst#	Institutions
03e01	Dept. of Surg. Tokai Univ. School of Med. Tokyo Hospital
1102	Second Dept. of Surg. Hokkaido Univ. School of Med.
1202	First Dept. of Surg. Sapporo Med. Univ.
1203	First Dept. of Medicne. Sapporo Med. Univ.
1302	Second Dept. of Surg. Asahikawa Med. Univ.
1401	First Dept. of Surg. Hirosaki Med. Univ. School of Med.
1406	First Dept. of Medicine Hirosaki Med. Univ. School of Med.
1501	First Dept. of Surg. Iwate Med. Univ. School of Med.
1601	First Dept. of Surg. Yamagata Univ.School of Med.
1802	Second Dept. of Surg. Akita Univ. School of Med.
1901	First Dept. of Surg. Fukushima Medical School
2101	First Dept. of Surg. Gunma Univ. School of Med.
2102	Second Dept. of Surg. Gunma Univ.School of Med.
2106	First Dept. of Medicne. Gunma Univ.School of Med.
2301	First Dept. of Surg. Dokkyo Med. Univ. School of Med.
2311	Dept of Surg. Dokkyo Med. Univ. School of Med. Koshigaya Hospital
2401	Dept.of Surg. Tsukuba Univ. School of Med.
2502	Second Dept. of Surg. Saitama Medical Univ.
2602	Second Dept. of Surg National Defense Medical College
2702	Second Dept. of Surg. Chiba Univ. School of Med.
2705	Dept. of Endscopic Diagnostics & Therapautics, Chiba Univ.
3301	First Dept. of Surg. Tokyo Univ. School of Med.
3303	First Dept. of Surg. Tokyo Med. & Dental Univ.School of Med.
3401	First. Dept. of Surg. Juntendo Univ. School of Med.
3501	First Dept. of Surg. Juntendo Univ.School of Med.
3703	Therd Dept. of Surg. Tokyo Medical Univ.
3804	Dept. of Ragiol. Tokyo Women's Medical Univ.

Inst#	Institutions
3811	Dept. Surg. Institute of Gastroenterology Tokyo Wemen's Medical Univ.
3821	Dept. Surg. Tokyo Wemen's Medical Univ. Second Hospital
3901	First Dept. of Surg.The Jikei Univ. School of Med.
4001	First Dept.of Surg. Yamanashi Med. Univ. School of Med.
4201	Dept of Surg. Tokai Univ. School of Med.
4302	Second Dept. of Surg. Yokohama City Univ.School of Med.
4402	Second Dept. of Surg. St.Marianna Univ.School of Med.
4501	Dept of Surg. Kitazato Univ. School of Med.
4511	Dept. of Digestive Surg. Kitazato Univ. East Hospital
4601	Dept. of Surg. Juntendo Univ. Nagaoka Hospital
5202	Second Dept. of Surg., Toyama Med. and Pharmaceutical Univ.
5301	First Dept. of Surg. Shinsyu Univ.School of Med.
5302	Second Dept. of Surg. Juntendo Univ.School of Med.
5501	First Dept. of Surg. Nagoya Univ.School of Med.
5502	Secondt Dept. of Surg. Nagoya Univ.School of Med.
5506	Second Dept. of Medicine. Nagoya Univ.School of Med.
5601	First Dept. of Surg., Nagoya City Univ. School of Med.
5602	Second Dept. of Surg., Nagoya City Univ. School of Med.
5701	First Dept. of Surg. Gifu Univ.School of Med.
5803	Dept. of Funabiki-Surg. Fujita Health Univ. School of Med.
5811	Fujita Health Univ. School of Med. Houtokukai Hospital
6101	First Dept. of Surg. Shiga Univ. School of Med.
6207	Third Dept. of Kyoto Prefectural Univ. of Med.
6304	Dept. of Radiology Kyoto Univ. School of Med.
6311	Dept. of Surgical oncology Kyoto Univ. School of Med.
6502	Second Dept. of Surg. Kansai Medical Univ.
6601	Div. of General & Gastroenterological Surg. Osaka Univ.

Institutions (No.2)

Inst#	Institutions
6602	Dept. of Surg. and Clinical Oncology(E2) Graduate School of Med. Osaka Univ.
6701	First Dept. of Surg. Osaka City Univ. School of Med.
6704	Dept. of Radiology Osaka City Univ. School of Med.
6801	First Dept. of Surg. Kinki Univ. School of Med.
6802	Second Dept. of Surg. Kinki Univ. School of Med.
7002	Second Dept. of Surg. Wakayama Medical Univ. School of Med.
7102	Second Dept. of Surg. Kanazawa Univ. School of Med.
7201	First Dept. of Surg. Fukui Med. Univ.
7301	First Dept. of Surg. Kobe Univ. School of Med.
7302	Secondt Dept. of Surg. Kobe Univ. School of Med.
7304	Dept. of Radiology, Kobe Univ. School of Med.
7401	First Dept. of Surg. Hyogo Medical Univ.
8001	First Dept. of Surg. Okayama Univ. School of Med.
8002	Second Dept. of Surg. Okayama Univ. School of Med.
8302	Second Dept. of Surg. Shimane Medical Univ.
8402	Second Dept. of Surg.Hiroshima Univ. School of Med.
8411	Dept. of Surg. Reserch Inst. foir Nucler Med. & Biology Hiroshima Univ.
8502	Dept. of Surg. 2, Yamaguchi Univ. School of Med.
8507	First dept. of Int. Med., Yamaguchi Univ. School of Med.
8601	First Dept. of Surg. Tokushima Univ. School of Med.
9102	Second Dept. of Surg. Kyushu Univ. School of Med.
9104	Dept of Radiology Kyushu Univ. School of Med.
9201	Firstd Dept. of Surg. Fukuoka Univ. School of Med.
9202	Second Dept. of Surg. Fukuoka Univ. School of Med.
9211	Dept. of Surg. Fukuoka Univ. School of Med. Tukushi Hospital
9301	Dept. of Surg. Kurume Univ. School of Med.
9302	Dept. of Medicalcenter Kurume Univ. School of Med.

Inst#	Institutions
9502	Second Dept. of Surg. Nagasaki Univ. School of Med
9602	Second Dept. of Surg., Kumamoto Univ., School of Med.
9802	First Dept. of Second Dept. of Surg. Miyazaki Medical Univ.
9901	First Dept. of Surg. Kagoshima Univ. School of Med.
9991	First Dept. of Surg. Univ. of the Ryukyu school of Med.
9994	Dept. of Radiology. Ryukyu Univ. School of Med.
10011	Sapporo National Hospital
10014	Sapporo National Hospital Hokkaido Cancer Center
10021	National Cancer Center Central Hospital
10031	National Cancer Center East Hospital
10081	National Shikoku Cancer Center Hospital
10101	Dept of Surg. Hakodate National Hospital
11201	Dept of Surg. Sendai National Hospital
11301	Dept of Surg. Mito National Hospital
12101	Dept of Surg. Numata National Hospital
13301	Dept of Surg. International Medical Center In Japan
14401	Dept of Surg. Kasumigaura National Hospital
14801	National Kanazawa Hospital
19041	Beppu National Hospital
19061	Dept of Surg. Miyakonojo National Hospital
19071	Dept of Surg. Ibusuki National Hospital
21061	Dept of Surg. Fukushima Prefectual Aizu Sogo Hospital
21091	Dept of Surg. Iwaki City Sogo Iwakikyoritul Hospital
21101	Dept. of Surg. Iwate Prefectural Isawa Hospital
22011	Dept of Surg. Niigata Cancer Center Hospital
22021	Dept of Surg. Niigata Prefectual Shibata Hospital
23011	Metropolitan Komagome General Hospital
23021	Dept of Surg. Metroporitan Hiroo Hospital
23031	Dept of Surg. Metroporitan Futyu Hospital

Institutions (No.3)

Inst#	Institutions
24011	Dept of Surg. Gunma Cancer Center Toumou Hospital
24031	Dept of Surg. Tochigi Cancer Center
24051	Dept of Digestive Surg. Chiba Cancer Center
24061	Dept. Surg. 1 Kanagawa Pref. Cancer Center
24101	Dept of Surg. West Hamamatsu Medical Cancer Center
25021	Dept. of Digestive Surg. Ishikawa Pref. Central Hospital
25032	Dept of Thoracic Surg. Aichi Cancer Center
25041	Dept of Surg. Fukui Prefectual Hospital
26011	Osaka Adult Disease Center
27014	Dept of Radiology Hyogo Adult Disease Center
27031	Dept of Surg. Hyogo Prefectual Kakogawa Hospital
27041	Dept of Surg. Tottori Prefectual Central Hospital
28021	Dept of Surg. Kochi Prefectual Central Hospital
29011	Dept of Surg. Saga Prefectual Kouseikan Hospital
29041	Miyazaki Prefectural Nichinan Hospital
30011	Sapporo City General Hospital
31031	Hachinohe City Hospital
31051	Sakata City Hospital
31061	Dept of Surg. Tsuruoka City Syounai Hospital
34021	Urawa Municipal Hospital
34051	Dept of Surg. Numazu City Hospital
34061	Kakegawa Municipal Hospital
34121	Yamato Municipal Hospital
34131	Hiratsuka City Hospital
35031	Dept of Surg. Ogaki City Hospital
35041	Dept of Surg. Gifu City Hospital
35081	Dept of Surg. Nagahama City Hospital

Inst#	Institutions
36041	Dept of Surg. Suita City Hospital
36081	Dept of Surg. Izumi City Hospital
37111	Dept of Surg. Kobe City Central Hospital
37121	Nishinomiya Municipal Central Hospital
37200	Hiroshima City Asa Hospital
37211	Dept of Surg. Matsue City Hospital
39111	Dept of Surg. Kitakyusyu City Medical Center Hospital
39121	Dept of Surg. Kitakyusyu City Yahata Hospital
40011	Dept of Surg. Tonan Hospital
40311	Dept of Surg. Toranomon Hospital
40711	Dept of Surg. Kinki Center Hospital
41411	Gunmaken Saiseikai Maebashi Hospital
41512	Aich-Saiseikai Hospital
41731	Dept of Surg.Okayama Rousai Hospital
42121	Akita Red Cross Hospital
42211	Dept of Surg. Nagaoka Red Cross Hospital
42311	Japanese Red Cross Medical Center
42651	Dept of Surg. Yamada Red Cross Hospital
42711	Dept of Surg. Oncol. Res. Inst. Rad. Biol. Med. Hiroshima Univ.
42831	Dept. of Surg. Matsuyama Red Cross Hospitral
43021	Dept of Surg. Kushiro Rosai Hospital
43621	Wakayama Rosai Hospital
43711	Dept of Surg. Kansai Rosai Hospital
44011	Sapporo Social Insulance General Hospital
44311	Dept of Surg. Social Insurance General Center Hospital
44541	Social Insurance Chukyo Hospital
44721	Dept of Surg. Social Insurance Shimonoseki Kosei Hospital

Institutions (No.4)

Inst#	Institutions
44911	Dept of Surg. Social Insurance Ogura Memorial Hospital
45111	Dept of Medicine Yamamoto Union General Hospital
45411	Dept of Surg. Kokuho Seitou Hospital
46011	Obihiro Kousei Hospital
46111	Dept. of Surg. Sendai Kosei Hospital
46311	Tohoku Welfare Pension Hospital
46421	Dept. of Surg. Kiryu Kousei Hospital
47111	Dept. of Surg. Tohokukosai Hospital
47311	Dept. of Surg. Tachikawa Hospital
48111	Dept. of Surg. NTT Tohoku Hospital
48611	Dept. of Surg. Osaka Teishin Hospital
52301	Tokyo Metropolitan Police Hospital
53302	Dept. of Surg. Tamananbu-Chiiki Hospital
60019	Dept. of Surg. Nikko Memorial Hospital
60041	Dept. of Surg. Keiyukai Sapporo Hospital
61011	Dept. of Surg. Ota nishinouchi Hospital
61041	Dept. of Surg. Takeda Sogo Hospital
61051	Dept. of Surg. Hirashika Sogo Hospital
63041	Fed. of National Public Services and Personnel Mutual Aid Assoc Mishuku Hospital
64441	Dept. of Surg. NKK Hospital
64521	Dept. of Surg.Showainan Sogo Hospital
66211	Dept. of Abdominal Surg. Tenri Hospital
66351	Dept. of Surg. Matsushita Memorial Hospital
67111	Dept. of Surg.Kobekogyo(Koko) Hospital
67411	Inst. of Gastroenterol. Hofu Digestive Center
68111	Sumitomo Besshi Hospital

Inst#	Institutions
69211	Mitsui Ohmuta Hospital

2. Patient Background

Table 1) Age, gender and treatment

Age	Cases (%)	Male	Female	Unknown	EMR*/ Stenting	Chemotherapy/ Radiotherapy	Palliative operation	Esopha-gectomy	Unknown
~29	0	0	0	0	0	0	0	0	0
30~39	4 (0.1%)	3	1	0	0	2	0	2	0
40~49	146 (4.8%)	122	24	0	4	42	4	96	0
50~59	763 (25.2%)	665	98	0	56	172	18	506	11
60~69	1111 (36.8%)	992	119	0	85	267	22	724	13
70~79	806 (26.7%)	700	106	0	83	263	16	424	20
80~89	130 (4.3%)	112	18	0	18	64	3	41	4
90~	8 (0.3%)	6	2	0	1	6	0	1	0
Unknown	54 (1.8%)	47	7	0	3	24	2	23	2
Total	3022 (100%)	2647 (87.6%)	375 (12.4%)	0	250 (8.3%)	840 (27.8%)	65 (2.2%)	1817 (60.1%)	50 (1.7%)

*EMR:endoscopic mucosal resection

Table 2) Area of patient's residence and occupation

Area	No. of cases (%)	Area	No. of cases (%)
Total	**3022 (100%)**	Miyazaki	29 (1.0%)
Aichi	93 (3.1%)	Nagano	37 (1.2%)
Akita	61 (2.0%)	Nagasaki	30 (1.0%)
Aomori	22 (0.7%)	Nara	23 (0.8%)
Chiba	160 (5.3%)	Niigata	47 (1.6%)
Ehime	21 (0.7%)	Oita	10 (0.3%)
Fukui	21 (0.7%)	Okayama	38 (1.3%)
Fukuoka	158 (5.2%)	Okinawa	34 (1.1%)
Fukushima	35 (1.2%)	Osaka	247 (8.2%)
Gifu	36 (1.2%)	Saga	19 (0.6%)
Gunma	77 (2.5%)	Saitama	105 (3.5%)
Hiroshima	47 (1.6%)	Shiga	32 (1.1%)
Hokkaido	251 (8.3%)	Shimane	24 (0.8%)
Hyogo	149 (4.9%)	Shizuoka	45 (1.5%)
Ibaraki	51 (1.7%)	Tochigi	55 (1.8%)
Ishikawa	19 (0.6%)	Tokushima	7 (0.2%)
Iwate	54 (1.8%)	Tokyo	416 (13.8%)
Kagawa	7 (0.2%)	Tottori	4 (0.1%)
Kagoshima	47 (1.6%)	Toyama	16 (0.5%)
Kanagawa	236 (7.8%)	Wakayama	8 (0.3%)
Kochi	13 (0.4%)	Yamagata	22 (0.7%)
Kumamoto	14 (0.5%)	Yamaguchi	37 (1.2%)
Kyoto	43 (1.4%)	Yamanashi	13 (0.4%)
Mie	16 (0.5%)	Others	0 (0.0%)
Miyagi	46 (1.5%)	Unknown	47 (1.6%)

Occupation	Cases (%)
None	390 (12.9%)
Professional	355 (11.7%)
Management	244 (8.1%)
Office worker	476 (15.8%)
Sales worker	136 (4.5%)
Farm/Forestry/Marine product	182 (6.0%)
Mining and Quarrying	10 (0.3%)
Transport and communication	80 (2.6%)
Industrial technician	198 (6.6%)
General worker/Service industry	166 (5.5%)
Others	58 (1.9%)
Unclassified	18 (0.6%)
Unknown	709 (23.5%)
Total	3022 (100%)

Table 3) Familial history of carcinoma

Familial history	Cases (%)
No	1656 (54.8%)
Yes	882 (29.2%)
Unknown	484 (16.0%)
Total	3022 (100%)

Table 4) Tumors of familial history of carcinoma

Diseases	No. of cases (%)	Diseases	No. of cases (%)
Malig. lymphoma	2 (0.2%)	Gallbladder ca.	5 (0.4%)
Leukemya	20 (1.7%)	Pancreas ca.	55 (4.6%)
Brain tumor	12 (1.0%)	Colon ca.	63 (5.3%)
Mandibular ca.	1 (0.1%)	Rectal ca.	42 (3.5%)
Paranasal sinus ca.	2 (0.2%)	Uterus ca.	64 (5.3%)
Thyroid ca.	2 (0.2%)	Ovarian ca.	3 (0.3%)
Breast ca.	48 (4.0%)	Seminoma	4 (0.3%)
Lung ca.	158 (13.2%)	Renal ca.	11 (0.9%)
Maxilla ca.	3 (0.3%)	Bladder ca.	20 (1.7%)
Tongue ca.	12 (1.0%)	Prostate ca.	5 (0.4%)
Oral ca.	1 (0.1%)	Osteosarcoma	2 (0.2%)
Pharyngeal ca.	8 (0.7%)	Spinal tumor	2 (0.2%)
Laryngeal ca.	41 (3.4%)	Malaig. melanoma	1 (0.1%)
Esophgeal ca.	86 (7.2%)	Skin ca.	7 (0.6%)
Stomach ca.	361 (30.1%)	Others	2 (0.2%)
Hepatoma	84 (7.0%)	Unknown	66 (5.5%)
Cholangioma	4 (0.3%)		
Jejunal ca.	1 (0.1%)	Total cases(%)	1200 (100%)
Duodenal ca..	2 (0.2%)	No. of patients	882

Table 5) Chance and basis of diagnosis according to clinical T-category

Chances of diagnosis	Superficial cancer (cTis,cT1)	Advanced cancer (cT2,cT3,cT4)	Total (%)
Chief complains	123 (30.4%)	1709 (82.5%)	1832 (74.0%)
Detection survey / dock	122 (30.1%)	161 (7.8%)	283 (11.4%)
Examination for other disease	143 (35.3%)	93 (4.5%)	236 (9.5%)
Unknown	17 (4.2%)	108 (5.2%)	125 (5.0%)
Total	405 (100%)	2071 (100%)	2476* (100%)

Detection methods	Superficial cancer (cTis,cT1)	Advanced cancer (cT2,cT3,cT4)	Total (%)
Esohagography	35 (8.6%)	540 (26.1%)	575 (23.2%)
Esohagoscopy	339 (83.7%)	1355 (65.4%)	1694 (68.4%)
CT-scan	5 (1.2%)	34 (1.6%)	39 (1.6%)
US	0	1 (0.05%)	1 (0.04%)
Biopsy	1 (0.2%)	4 (0.2%)	5 (0.2%)
Others	1 (0.2%)	4 (0.2%)	5 (0.2%)
Unknown	24 (5.9%)	133 (6.4%)	157 (6.3%)
Total	405 (100%)	2071 (100%)	2476* (100%)

*: excluding 546 cTX, cT0, cT unknown cases

Table 6) Symptoms according to clinical T-category

Symptom	cTis, cT1		cT2,cT3,cT4		Total (%)	
	Cases (%)		Cases (%)			
None	247	(61.0%)	193	(9.3%)	440	(17.8%)
Chest pain	24	(5.9%)	185	(8.9%)	209	(8.4%)
Sense of stricture	31	(7.7%)	870	(42.0%)	901	(36.4%)
Unusual sensation	28	(6.9%)	109	(5.3%)	137	(5.5%)
Dysphagia	10	(2.5%)	428	(20.7%)	438	(17.7%)
Nausea / Vomiting	5	(1.2%)	31	(1.5%)	36	(1.5%)
Appetite loss	5	(1.2%)	23	(1.1%)	28	(1.1%)
Weight loss	3	(0.7%)	7	(0.3%)	10	(0.4%)
Swollen of lymph node	5	(1.2%)	9	(0.4%)	14	(0.6%)
Hoarseness	4	(1.0%)	24	(1.2%)	28	(1.1%)
Others	21	(5.2%)	86	(4.2%)	107	(4.3%)
Unknown	22	(5.4%)	106	(5.1%)	128	(5.2%)
Total	405	(100%)	2071	(100%)	2476*	(100%)

*; excluding 546 cTX, cT0, cT unknown cases

Table 7) Double / multiple primary cancers

	Endoscopical treatment (EMR/Stenting)	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
None	167 (66.8%)	678 (80.7%)	50 (76.9%)	1477 (81.3%)	2372 (79.8%)
Double	25 (10.0%)	65 (7.7%)	8 (12.3%)	165 (9.1%)	263 (8.8%)
Metachronous					
Before E-Ca	38 (15.2%)	71 (8.5%)	2 (3.1%)	128 (7.0%)	239 (8.0%)
After E-Ca	4 (1.6%)	5 (0.6%)	1 (1.5%)	11 (0.6%)	21 (0.7%)
Multiple	7 (2.8%)	8 (1.0%)	0	11 (0.6%)	26 (0.9%)
Unknown	9 (3.6%)	13 (1.5%)	4 (6.2%)	25 (1.4%)	51 (1.7%)
Total	250 (100 %)	840 (100 %)	65 (100 %)	1817 (100 %)	2972* (100 %)

*; excluding 50 treatment unknown cases

Table 8) Double / multiple primary cancers and Organs

Organs	Synchronous		Metachronous		Multiple		Total	
Larynx/Maxilla	19	(6.7%)	18	(6.5%)	4	(7.3%)	41	(6.7%)
Pharynx	51	(17.9%)	22	(8.0%)	9	(16.4%)	82	(13.3%)
Oral cavity/Gum/Tongue	5	(1.8%)	10	(3.6%)	2	(3.6%)	17	(2.8%)
Stomach	124	(43.5%)	98	(35.6%)	14	(25.5%)	236	(38.4%)
Colon/Rectum	33	(11.6%)	37	(13.5%)	5	(9.1%)	75	(12.2%)
Liver	8	(2.8%)	8	(2.9%)	2	(3.6%)	18	(2.9%)
Choledochus/Gallbladder	1	(0.4%)	3	(1.1%)	1	(1.8%)	5	(0.8%)
Pancreas	2	(0.7%)	3	(1.1%)	0		5	(0.8%)
Lung/Trachea/Bronchus	10	(3.5%)	22	(8.0%)	8	(14.5%)	40	(6.5%)
Remnant esophagus	0		4	(1.5%)	0		4	(0.7%)
Uterus/Ovarium	0		1	(0.4%)	1	(1.8%)	2	(0.3%)
Breast	2	(0.7%)	12	(4.4%)	0		14	(2.3%)
Prostate	1	(0.4%)	10	(3.6%)	1	(1.8%)	12	(2.0%)
Urinary bladder	2	(0.7%)	11	(4.0%)	1	(1.8%)	14	(2.3%)
Leukemia	2	(0.7%)	2	(0.7%)	0		4	(0.7%)
Skin	1	(0.4%)	1	(0.4%)	0		2	(0.3%)
Brain	0		0		0		0	
Thyroid	10	(3.5%)	1	(0.4%)	0		11	(1.8%)
Bone	0		1	(0.4%)	0		1	(0.2%)
Kidney	2	(0.7%)	1	(0.4%)	1	(1.8%)	4	(0.7%)
Others	12	(4.2%)	10	(3.6%)	5	(9.1%)	27	(4.4%)
Unknown	0		0		1	(1.8%)	1	(0.2%)
Lesions	285	(100%)	275	(100%)	55	(100%)	615	(100%)
Cases	263		260		26		549	

Table 9) Double primary cancer - Organs (in endoscopically treated cases)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After E-Ca	
Larynx/Maxilla		2 (5.0%)		1 (6.7%)
Pharynx	9 (31.0%)	4 (10.0%)	2 (50.0%)	2 (13.3%)
Oral cavity/Gum/Tongue				)
Stomach	13 (44.8%)	22 (55.0%)		4 (26.7%)
Colon/Rectum	2 (6.9%)	5 (12.5%)	1 (25.0%)	1 (6.7%)
Liver	1 (3.4%)	3 (7.5%)	1 (25.0%)	
Choledochus/Gallbladder		1 (2.5%)		1 (6.7%)
Pancreas				
Lung/Trachea/Bronchus		1 (2.5%)		3 (20.0%)
Remnant esophagus				
Uterus/Ovarium				
Breast				
Prostate		2 (5.0%)		
Urinary bladder				1 (6.7%)
Leukemia				
Skin	1 (3.4%)			
Brain				
Thyroid				
Bone				
Kidney				
Others	3 (10.3%)			2 (13.3%)
Unknown				
Lesions	29 (100%)	40 (100%)	4 (100%)	15 (100%)
Cases	25	38	4	7

Table 10) Double primary cancer - Organs (in cases of chemotherapy and/or radiotherapy)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After e-Ca	
Larynx/Maxillary	6 (8.8%)	6 (7.8%)		
Pharynx	10 (14.7%)	1 (1.3%)		1 (5.6%)
Oral cavity/Gum/Tongue	2 (2.9%)	2 (2.6%)		
Stomach	25 (36.8%)	21 (27.3%)	1 (20.0%)	4 (22.2%)
Colon/Rectum	7 (10.3%)	13 (16.9%)	1 (20.0%)	3 (16.7%)
Liver	4 (5.9%)	3 (3.9%)		2 (11.1%)
Choledocus/Gallbladder		1 (1.3%)		
Pancreas	1 (1.5%)	1 (1.3%)		
Lung/Trachea/Bronchus	4 (5.9%)	8 (10.4%)	1 (20.0%)	5 (27.8%)
Remnant esophagus		2 (2.6%)	1 (20.0%)	
Uterus/Ovarium				1 (5.6%)
Breast	1 (1.5%)	6 (7.8%)	1 (20.0%)	
Prostate	1 (1.5%)	3 (3.9%)		1 (5.6%)
Urinary bladder	1 (1.5%)	4 (5.2%)		
Leukemia	1 (1.5%)	1 (1.3%)		
Skin		1 (1.3%)		
Brain				
Thyroid	1 (1.5%)			
Bone				
Kidney				
Others	4 (5.9%)	4 (5.2%)		
Unknown				1 (5.6%)
Lesions	68 (100%)	77 (100%)	5 (100%)	18 (100%)
Cases	65	71	5	8

Table 11) Double primary cancer - Organs (in cases of palliative operation)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After E-Ca	
Larynx/Maxillary	1 (11.1%)	1 (50.0%)		
Pharynx				
Oral cavity/Gum/Tongue				
Stomach	6 (66.7%)			
Colon/Rectum	1 (11.1%)			
Liver			1 (50.0%)	
Choledocus/Gallbladder				
Pancreas				
Lung/Trachea/Bronchus	1 (11.1%)	1 (50.0%)		
Remnant esophagus				
Uterus/Ovarium				
Breast				
Prostate				
Urinary bladder				
Leukemia				
Skin				
Brain				
Thyroid				
Bone			1 (50.0%)	
Kidney				
Others				
Unknown				
Lesions	9 (100%)	2 (100%)	2 (100%)	0 (0%)
Cases	8	2	1	0

Table 12) Double primary cancer - Organs (in cases of esophagectomy)

Organs	Synchronous	Metachronous		Multiple
		Before E-Ca	After E-Ca	
Larynx/Maxillary	12 (6.7%)	8 (6.0%)	1 (8.3%)	3 (14.3%)
Pharynx	32 (17.9%)	12 (9.0%)	3 (25.0%)	5 (23.8%)
Oral cavity/Gum/Tongue	3 (1.7%)	7 (5.3%)	1 (8.3%)	2 (9.5%)
Stomach	80 (44.7%)	51 (38.3%)	3 (25.0%)	6 (28.6%)
Colon/Rectum	23 (12.8%)	17 (12.8%)		1 (4.8%)
Liver	3 (1.7%)			
Choledocus/Gallbladder	1 (0.6%)		1 (8.3%)	
Pancreas	1 (0.6%)	1 (0.8%)	1 (8.3%)	
Lung/Trachea/Bronchus	5 (2.8%)	10 (7.5%)	1 (8.3%)	
Remnant esophagus		1 (0.8%)		
Uterus/Ovarium		1 (0.8%)		
Breast	1 (0.6%)	5 (3.8%)		
Prostate		5 (3.8%)		
Urinary bladder	1 (0.6%)	7 (5.3%)		
Leukemia	1 (0.6%)	1 (0.8%)		
Skin				
Brain				
Thyroid	9 (5.0%)	1 (0.8%)		
Bone				
Kidney	2 (1.1%)	1 (0.8%)	1 (8.3%)	1 (4.8%)
Others	5 (2.8%)	5 (3.8%)		3 (14.3%)
Unknown				
Lesions	179 (100%)	133 (100%)	12 (100%)	21 (100%)
Cases	165	128	11	11

Table 13) Location of tumor

Location	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
Not detected	1 (0.4%)	1 (0.1%)		2 (0.1%)	4 (0.1%)
Pharynx		4 (0.5%)	2 (3.1%)	7 (0.4%)	13 (0.4%)
Cervical esophagus	2 (0.8%)	47 (5.6%)	2 (3.1%)	80 (4.4%)	131 (4.4%)
Upper thoracic eso.	29 (11.6%)	148 (17.6%)	12 (18.4%)	174 (9.6%)	363 (12.2%)
Middle thoracic eso.	153 (61.2%)	453 (53.9%)	31 (47.7%)	938 (51.6%)	1575 (53.0%)
Lower thoracic eso.	43 (17.2%)	151 (18.0%)	14 (21.5%)	499 (27.5%)	707 (23.8%)
Abdominal esophagus	4 (1.6%)	23 (2.7%)	1 (1.5%)	98 (5.4%)	126 (4.2%)
EG-Junction (E=G)	1 (0.4%)	1 (0.1%)		14 (0.8%)	16 (0.5%)
Cardia (G)				2 (0.1%)	2 (0.07%)
Unknown	17 (6.8%)	12 (1.4%)	3 (4.6%)	3 (0.2%)	35 (1.2%)
Total	250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

Table 14) Longitudinal tumor length on esophagography

Length	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
not examined	105 (42.0%)	61 (7.6%)	8 (12.3%)	53 (2.9%)	227 (7.6%)
~1cm	7 (2.8%)	7 (0.8%)	1 (1.5%)	38 (2.1%)	52 (1.8%)
~2cm	27 (10.8%)	28 (3.3%)	4 (6.2%)	77 (4.2%)	133 (4.5%)
~3cm	26 (10.4%)	44 (5.2%)	4 (6.2%)	173 (9.5%)	247 (8.3%)
~4cm	12 (4.8%)	52 (6.2%)	3 (4.6%)	225 (12.4%)	293 (9.9%)
~5cm	6 (2.4%)	72 (8.6%)	9 (13.8%)	241 (13.3%)	322 (10.8%)
~6cm	5 (2.0%)	78 (9.3%)	7 (10.8%)	247 (13.6%)	339 (11.4%)
~7cm	3 (1.2%)	103 (12.3%)	7 (10.8%)	201 (11.1%)	314 (10.6%)
~8cm	4 (1.6%)	105 (12.5%)	7 (10.8%)	146 (8.0%)	262 (8.8%)
~9cm	1 (0.4%)	75 (8.9%)	1 (1.5%)	94 (5.2%)	177 (6.0%)
~10cm	1 (0.4%)	36 (4.3%)	3 (4.6%)	53 (2.9%)	91 (3.1%)
~11cm	2 (0.8%)	45 (5.4%)	1 (1.5%)	49 (2.7%)	99 (3.3%)
~12cm	0	19 (2.3%)	3 (4.6%)	22 (1.2%)	42 (1.4%)
~13cm	2 (0.8%)	19 (2.3%)	0	15 (0.8%)	39 (1.3%)
~14cm	1 (0.4%)	11 (1.3%)	0	7 (0.4%)	19 (0.6%)
~15cm	0	3 (0.4%)	0	5 (0.3%)	8 (0.3%)
~16cm	2 (0.8%)	5 (0.6%)	0	5 (0.3%)	12 (0.4%)
~17cm	0	2 (0.2%)	0	3 (0.2%)	5 (0.2%)
17.1cm~	1 (0.4%)	4 (0.5%)	2 (3.1%)	1 (0.06%)	8 (0.3%)
Unknown	45 (20.3%)	71 (8.5%)	5 (7.7%)	162 (8.9%)	283 (9.5%)
Total	250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

Table 15) Endoscopic features

Type	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
Not examined	0	6 (0.7%)	1 (1.5%)	5 (0.3%)	12 (0.4%)
0-I	5 (2.0%)	29 (3.5%)	1 (1.5%)	102 (5.6%)	137 (4.6%)
0-IIa	25 (10.0%)	21 (2.5%)	1 (1.5%)	100 (5.5%)	147 (4.9%)
0-IIb	53 (21.2%)	12 (1.4%)	0	27 (1.5%)	92 (3.1%)
0-IIc	130 (52.0%)	70 (8.3%)	1 (1.5%)	248 (13.6%)	449 (15.1%)
0-III	0	8 (1.0%)	0	22 (1.2%)	30 (1.0%)
0-V	0	4 (0.5%)	0	6 (0.3%)	10 (0.3%)
1	0	47 (5.6%)	4 (6.2%)	135 (7.4%)	186 (6.3%)
2	10 (4.0%)	239 (28.5%)	16 (24.6%)	553 (30.4%)	818 (27.5%)
3	10 (4.0%)	279 (33.2%)	24 (36.9%)	504 (27.7%)	817 (27.5%)
4	2 (0.8%)	28 (3.3%)	6 (9.2%)	31 (1.7%)	67 (2.3%)
5	2 (0.8%)	12 (1.4%)	0	26 (1.4%)	40 (1.3%)
Unknown	13 (5.2%)	85 (10.1%)	11 (16.9%)	58 (3.2%)	167 (5.6%)
Total	250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

0- I : superficical and protruding type
0- IIa : superficical and slight elevated type
0- IIb : superficical and flat type
0- IIc : superficical and slightly depressed
0- III : superficical and distinctly depressed

1 : protruding type
2 : ulcerative and localized type
3 : ulcerative and infiltrating type
4 : diffusely infiltrating type
5 : miscellaneous type

Table 16) Histologic types of biopsy

Histologic types		Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
				Palliative operation	Esophagectomy	
Not examined		18 (7.2%)	13 (1.5%)	2 (3.1%)	13 (0.7%)	46 (1.5%)
SCC	SCC	138 (55.2%)	385 (45.8%)	30 (46.2%)	796 (43.8%)	1349 (45.4%)
	Well diff.	20 (8.0%)	52 (6.2%)	5 (7.7%)	170 (9.4%)	247 (8.3%)
	Moderately diff	36 (14.4%)	234 (27.9%)	18 (27.7%)	530 (29.2%)	818 (27.5%)
	Poorly diff.	11 (4.4%)	111 (13.2%)	4 (6.2%)	212 (11.7%)	338 (11.4%)
Adenocarcinoma		3 (1.2%)	9 (1.1%)	0	36 (2.0%)	48 (1.6%)
Undifferentiated		0	9 (1.1%)	0	15 (0.8%)	24 (0.8%)
So-called carcinosarcoma		0	0	0	3 (0.2%)	3 (0.1%)
Malignant .melanoma		0	1 (0.1%)	0	1 (0.06%)	2 (0.07%)
Others		2 (0.8%)	5 (0.6%)	1 (1.5%)	16 (0.9%)	24 (0.8%)
Dysplasia		4 (1.6%)	1 (0.1%)	1 (1.5%)	1 (0.06%)	7 (0.2%)
Unknown		18 (7.2%)	20 (2.4%)	4 (6.2%)	24 (1.3%)	66 (2.2%)
Total		250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

Table 17) Depth of tumor invasion cT (Clinical TNM-classification)

cT	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
cTx	4 (1.6%)	1 (0.1%)	2 (3.1%)	3 (0.2%)	10 (0.3%)
cT0	3 (1.2%)	0	0	3 (0.2%)	6 (0.2%)
cTis	64 (25.6%)	6 (0.7%)	0	15 (0.8%)	85 (2.9%)
cT1	31 (12.4%)	55 (6.5%)	2 (3.1%)	81 (4.6%)	169 (5.7%)
cT1a	84 (33.6%)	17 (2.0%)	0	45 (2.5%)	146 (4.9%)
cT1b	18 (7.2%)	61 (7.3%)	2 (3.1%)	327 (18.0%)	408 (13.7%)
cT2	2 (0.8%)	87 (10.4%)	7 (10.8%)	355 (19.5%)	451 (15.2%)
cT3	10 (4.0%)	297 (35.4%)	23 (35.4%)	778 (42.8%)	1108 (37.3%)
cT4	9 (3.6%)	284 (33.8%)	25 (38.5%)	159 (8.8%)	477 (16.1%)
Unknown	25 (10.0%)	32 (3.8%)	4 (6.2%)	51 (2.8%)	112 (3.8%)
Total	250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

Table 18) Lymph node metastasis, cN; and Organ metastasis, cM (Clinical TNM-classification)

cN	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
cNx	16 (6.4%)	26 (3.1%)	4 (6.2%)	28 (1.5%)	74 (2.5%)
cN0	193 (77.2%)	262 (31.2%)	9 (13.8%)	845 (46.5%)	1309 (44.0%)
cN1	13 (5.2%)	522 (62.1%)	46 (70.8%)	885 (48.7%)	1466 (49.3%)
Unknown	28 (11.2%)	30 (3.6%)	6 (9.2%)	59 (3.2%)	123 (4.1%)
Total	250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

cM	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
cMx	9 (3.6%)	20 (2.4%)	2 (3.1%)	1 (0.06%)	32 (1.1%)
cM0	206 (82.4%)	542 (64.5%)	36 (55.4%)	1618 (89.0%)	2402 (80.8%)
cM1	2 (0.8%)	55 (6.5%)	7 (10.8%)	18 (1.0%)	82 (2.8%)
cM1a	0	45 (5.4%)	4 (6.2%)	44 (2.4%)	93 (3.1%)
cM1b	6 (2.4%)	151 (18.0%)	11 (16.9%)	84 (4.6%)	252 (8.5%)
Unknown	27 (10.8%)	27 (3.2%)	5 (7.7%)	52 (2.9%)	111 (3.7%)
Total	250 (100%)	840 (100%)	65 (100%)	1817 (100%)	2972 (100%)

Table 19) Metastatic Organs of cM1 (Clinical TNM classification)

Metastatic organs	Endoscopic treatment	Chemotherapy and/or radiotherapy	Surgery		Total (%)
			Palliative operation	Esophagectomy	
PUL	6 (66.7%)	52 (16.4%)	7 (26.9%)	4 (2.6%)	69 (13.7%)
OSS	0 (11.1%)	17 (5.4%)	1 (3.8%)	0	18 (3.6%)
HEP	2 (11.1%)	64 (20.2%)	2 (7.7%)	17 (11.2%)	85 (16.9%)
BRA	0	5 (1.6%)	0	1 (0.7%)	6 (1.2%)
LYM	1 (11.1%)	148 (46.7%)	12 (46.2%)	109 (71.7%)	270 (53.6%)
MAR	0	1 (0.3%)	0	1 (0.7%)	2 (0.4%)
PLE	0	1 (0.3%)	1 (3.8%)	2 (1.3%)	4 (0.8%)
PER	0	0	0	0	0
SKI	0	0	0	0	0
OTH	0	5 (1.6%)	0	3 (2.0%)	8 (1.6%)
Unknown	0	20 (6.3%)	3 (11.5%)	15 (9.9%)	38 (7.5%)
Lesions	9 (100%)	317 (100%)	26 (100%)	152 (100%)	504 (100%)
One organ	7 (87.5%)	178 (70.9%)	15 (68.2%)	124 (84.9%)	324 (75.9%)
Two organs	1 (12.5%)	40 (15.9%)	4 (18.2%)	7 (4.8%)	52 (12.2%)
Three organs	0	10 (4.0%)	0	0	10 (2.3%)
Four organs~	0	3 (1.2%)	0	0	3 (0.7%)
Unknown	0	20 (8.0%)	3 (13.6%)	15 (10.3%)	38 (8.9%)
Total cases	8 (100%)	251 (100%)	22 (100%)	146 (100%)	427 (100%)

Table 20) Clinical Stage (Clinical TNM-classification)

cStage	Endoscopic treatment		Chemotherapy and/or radiotherapy		Surgery				Total (%)	
					Palliative operation		Esophagectomy			
0	63	(25.2%)	5	(0.6%)	0		18	(1.0%)	86	(2.9%)
I	125	(50.0%)	103	(12.3%)	3	(4.6%)	365	(20.1%)	596	(20.1%)
IIA	3	(1.2%)	99	(11.8%)	3	(4.6%)	419	(23.1%)	524	(17.6%)
IIB	1	(0.4%)	42	(5.0%)	5	(7.7%)	214	(11.8%)	262	(8.8%)
III	6	(2.4%)	274	(32.6%)	25	(38.5%)	564	(31.0%)	869	(29.2%)
IV	2	(0.8%)	52	(6.2%)	5	(7.7%)	17	(0.9%)	76	(2.6%)
IVA	0		48	(5.7%)	5	(7.7%)	45	(2.5%)	98	(3.3%)
IVB	5	(2..0%)	150	(17.9%)	11	(16.9%)	83	(4.6%)	249	(8.4%)
Unknown	45	(18.0%)	67	(8.0%)	8	(12.3%)	92	(5.1%)	212	(7.1%)
Total	250	(100%)	840	(100%)	65	(100%)	1817	(100%)	2972	(100%)

II. Clinical Results of Patients treated with Endoscopically in 1999

Table 21) Treatment details in patients with endoscopic treatment

Treatment details	Cases (%)
Endoscopic treatment only	250 (100%)
Endoscopic treatment + Radiotherapy	0
Endoscopic treatment + Chemotherapy	0
Endoscopic treatment + Hyperthermia	0
Endoscopic treatment + Chemoradiotherapy	0
Total	231 (100%)

Treatment details	Cases (%)
EMR	214 (85.6%)
EMR+PDT	4 (1.6%)
EMR+YAG laser	2 (0.8%)
EMR+MCT	0
EMR+Esophageal stenting	2 (0.8%)
EMR+Other treatment	2 (0.8%)
Esophageal stenting	21 (8.4%)
Esophageal stenting+YAG laser	1 (0.4%)
Esophageal stenting + tracheal stenting	1 (0.4%)
Others	3 (1.2%)
Total	250 (100%)

EMR: endoscopic mucosal resection
PDT: photodynamic therapy
MCT:microwave coaguration therapy

Table 22) Endoscopic mucosal resection (EMR)

Method of EMR	Cases	(%)
One piece resection	82	(36.6%)
Piecemeal resection	138	(61.6%)
Unknown	4	(1.8%)
Total	224	(100%)

No. of lesions treated by EMR	Cases	(%)
1	137	(61.2%)
2	42	(18.8%)
3	18	(8.0%)
4	3	(1.3%)
5	3	(1.3%)
6	0	
7	1	(0.4%)
8	2	(0.9%)
9	0	(0.9%)
10 and/or over	2	(0.9%)
Unknown	16	(7.1%)
Total	224	(100%)

Radicality of EMR	Cases	(%)
Complete resection	165	(73.7%)
Non-complete resection	34	(15.2%)
Unknown	25	(11.2%)
Total	224	(100%)

Complications of EMR	Cases	(%)
None	192	(85.7%)
Perforation	3	(1.3%)
Bleeding	5	(2.2%)
Mediastinitis	0	
Stenosis	9	(4.0%)
Others	1	(0.4%)
Unknown	14	(6.3%)
Total	224	(100%)

Table 23) Prognosis of patients underwent endoscopic mucosal resection (EMR)

Outcome	Cases	(%)
Alive	203	(90.6%)
Dead	14	(6.2%)
Lost of follow up	2	(0.9%)
Unknown	5	(2.2%)
Total	224	(100%)

Causes of Death	Cases	(%)
Death due to esophageal cancer	1	(7.1%)
Death due to other cancer	3	(21.4%)
Death due to other disease (rec+)	0	
Death due to other disease (rec-)	5	(35.7%)
Death due to other disease (rec?)	0	
Death related to treatment within 30days	0	
Death related to treatment after 30 days	0	
Unknown	5	(35.7%)
Total	14	(100%)

Type of recurrence	Cases	(%)
None	201	(89.7%)
Lymph node	0	
Lung	0	
Liver	0	
Bone	0	
Brain	0	
Local	10	(4.5%)
Dissemination	0	
Stump	0	
Other	1	(0.4%)
Unknown	12	(5.4%)
Total	224	(100%)

rec : recurrence

Table 24) Histologic findings of EMR specimen (tumor size, histologic type, and depth of tumor invasion)

Size of lesion	Cases (%)
~ 9mm	16 (7.1%)
10 ~19mm	59 (26.3%)
20~29mm	33 (14.7%)
30~39mm	8 (3.6%)
40~49mm	1 (0.4%)
50~59mm	6 (2.7%)
60~69mm	1 (0.4%)
70mm~`	1 (0.4%)
Unknown	99 (44.2%)
Total	224 (100%)

Histologic type of EMR specimen	Cases (%)
Squamous cell ca (SCC)	108 (48.2%)
Well diff. SCC	14 (6.3%)
Moderately diff. SCC	51 (22.8%)
Poorly diff. SCC	5 (2.2%)
Adenocarcinima	2 (0.9%)
Barrett's carcinoma	0
Dysplasia	3 (1.3%)
Others	4 (1.8%)
Unknown	37 (16.5%)
Total	224 (100%)

Pathological depth of tumor invasion (pT)	Cases (%)
pT0	1 (0.4%)
pTis	60 (26.8%)
pT1a(lpm)	41 (18.3%)
pT1a(mm)	43 (19.2%)
pt1b	14 (6.3%)
Unknown	65 (29.0%)
Total	224 (100%)

Sub-classification of histological depth of invasion in superficial cancer	Cases (%)
m1(ep)	71 (31.7%)
m2(lpm)	48 (21.4%)
m3(mm)	44 (19.6%)
sm1	10 (4.5%)
sm2	1 (0.4%)
sm3	1 (0.4%)
Unknown	49 (21.9%)
Total	224 (100%)

ep: epithelium
lpm: lamina propria mucosa
mm: muscularis mucosa

Table 25) Histologic findings of EMR specimen (intraepithelial spread, vessel invasion, multiple cancer, and multiple lesion)

Intraepithelial spread (ie)	Cases (%)
(-)	53 (23.7%)
(+)	10 (4.5%)
(+++) superficial spread	0
Unknown	161 (71.9%)
Total	224 (100%)

Lympatic vessel invasion (ly)	Cases (%)
(-)	133 (59.4%)
(+)	10 (4.5%)
Unknown	81 (36.2%)
Total	224 (100%)

Blood vessel invasion (v)	Cases (%)
(-)	141 (62.9%)
(+)	5 (2.2%)
Unknown	78 (34.8%)
Total	224 (100%)

Multiple primary cancer	Cases (%)
(-)	69 (30.8%)
(+)	21 (9.4%)
Unknown	134 (59.8%)
Total	224 (100%)

Multiple malignant lesions	Cases (%)
(-)	70 (31.2%)
(+)	22 (9.8%)
Unknown	132 (58.9%)
Total	224 (100%)

No. of multiple primary lesions	Cases (%)
2	14 (60.8%)
3	1 (4.3%)
5	2 (8.7%)
Unknown	6 (26.1%)
Total	23 (100%)

Figure 1) Survival of patients treated with endoscopy

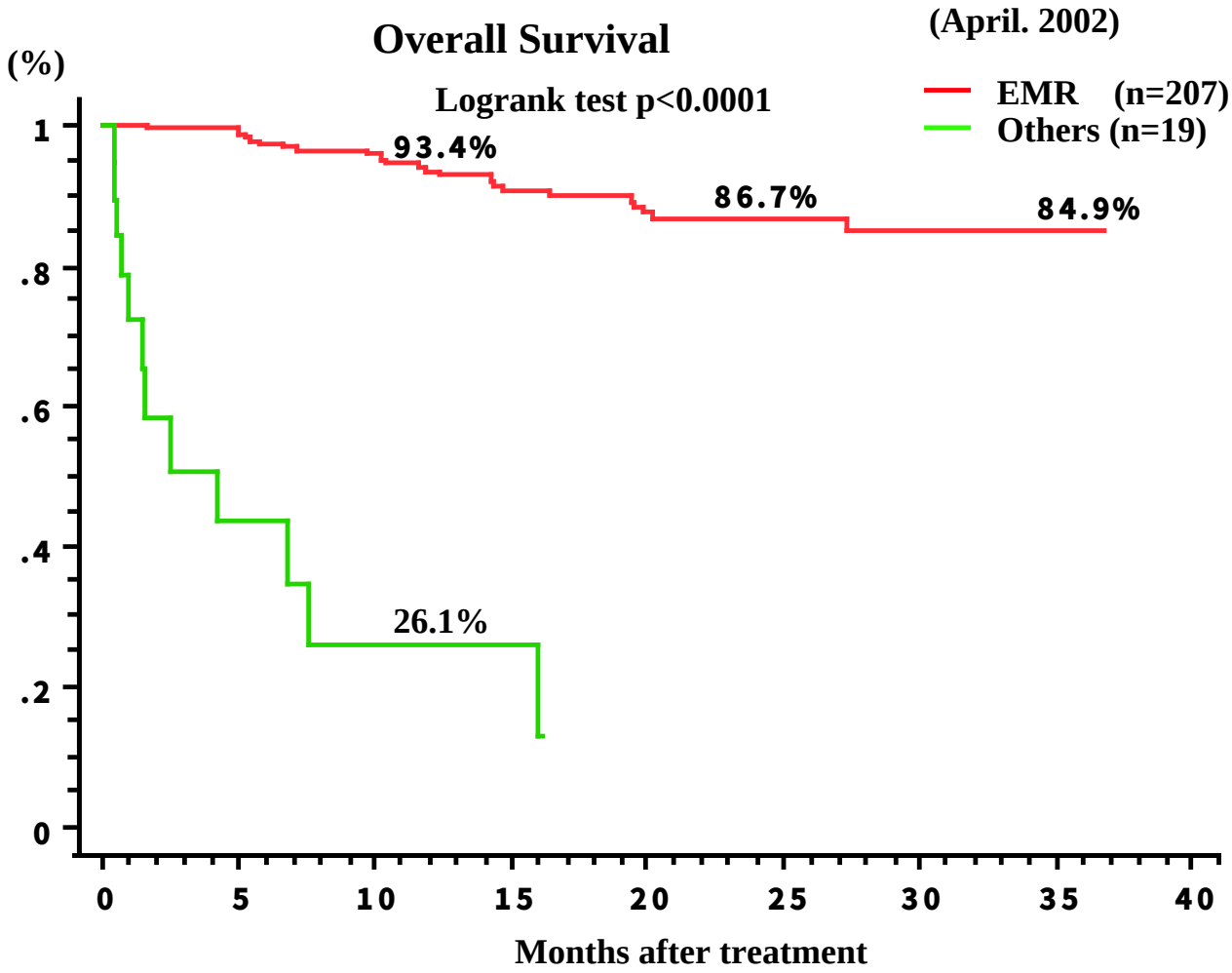


Figure 2) Survival of patients treated with EMR

(April. 2002)

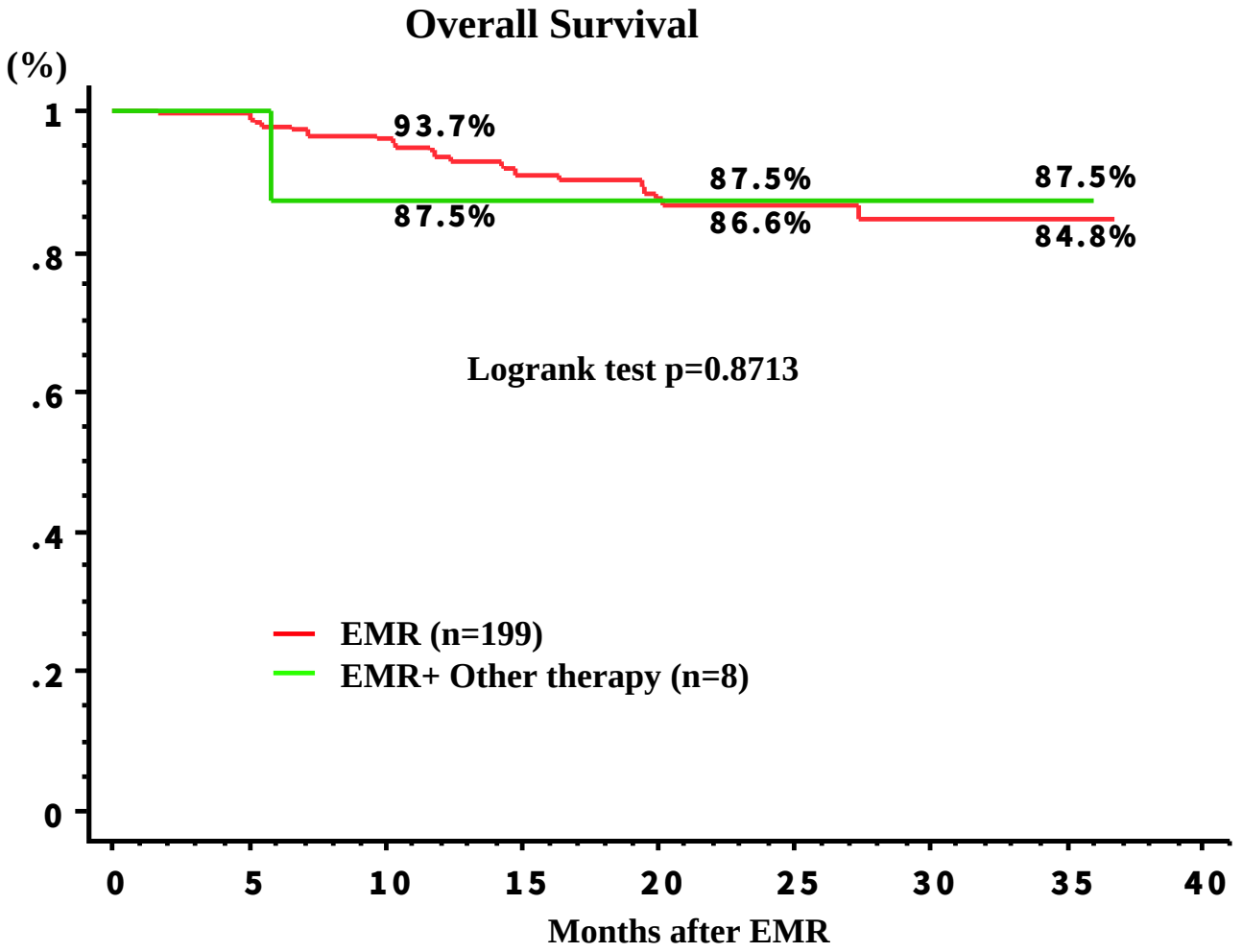
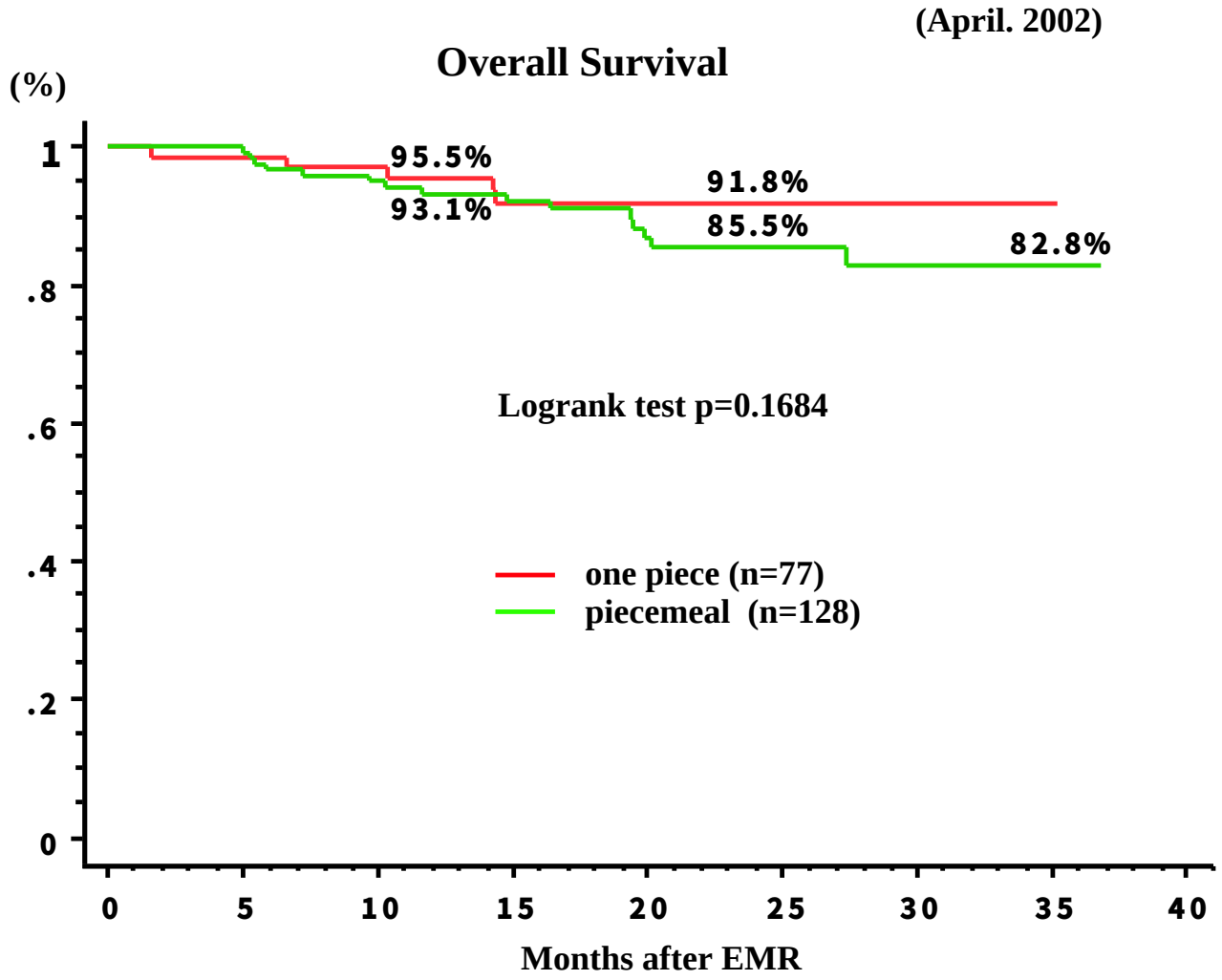


Figure 3) Survival of patients according to type of EMR



III. Clinical Results in Patients treated with Chemotherapy and/or Radiotherapy in 1999

Table 26) Radiotherapy and/or chemotherapy (non surgically treated cases)

Treatment	Cases (%)
Radiotherapy alone	232 (27.6%)
Chemoradiotherapy	526 (62.6%)
Chemotherapy alone	82 (9.8%)
Total	840 (100%)

Radiotherapy	Cases (%)
Curative radiation	611 (80.6%)
Palliative radiation	141 (18.6%)
Others	1 (0.7%)
Unknown	5 (0.1%)
Total	758 (100%)

Endo-irradiation	Cases (%)
(-)	652 (86.0%)
(+)	61 (8.0%)
Unknown	45 (5.9%)
Total	758 (100%)

Doses of irradiation (Gy)	Cases (%)
0	0
~ 19	21 (2.8%)
20 ~ 39	50 (6.6%)
40 ~ 59	123 (16.2%)
60 ~ 79	511 (67.4%)
80 ~ 99	7 (0.9%)
100 ~	1 (0.1%)
Unknown	45 (5.9%)
Total	758 (100%)

Table 27) Effectiveness of radiotherapy and/or chemotherapy (non surgically treated cases)

Chemotherapy	Cases (%)
(-)	0
(+)	607 (99.8%)
Unknown	1 (0.2%)
Total	608 (100%)

Response to radiotherapy	Cases (%)
CR	35 (15.1%)
PR	64 (27.6%)
NC	20 (8.6%)
PD	7 (3.0%)
Not evaluated	17 (7.3%)
Unknown	89 (38.4%)
Total	232 (100%)

Response to chemoradiotherapy	Cases (%)
CR	115 (21.9%)
PR	204 (38.8%)
NC	60 (11.4%)
PD	44 (8.4%)
Not evaluated	26 (4.9%)
Unknown	77 (14.6%)
Total	526 (100%)

Response to chemotherapy	Cases (%)
CR	1 (1.2%)
PR	21 (25.6%)
NC	26 (31.7%)
PD	14 (17.1%)
Not evaluated	5 (6.1%)
Unknown	15 (18.3%)
Total	82 (100%)

Figure 4) Cumulative survival curves of patients treated by chemotherapy and/or radiotherapy

(April. 2002)

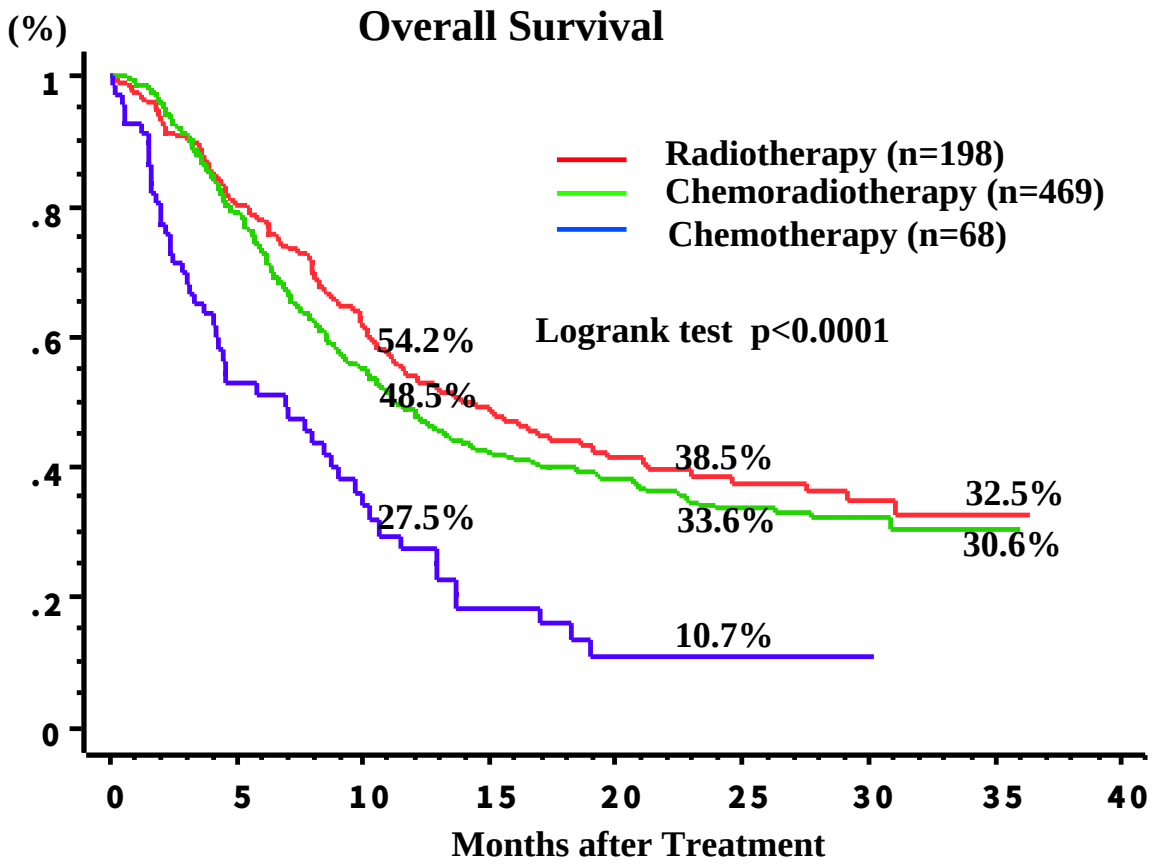


Figure 5) Cumulative survival curves of patients treated by chemotherapy and/or radiotherapy (cStage I-IIA)

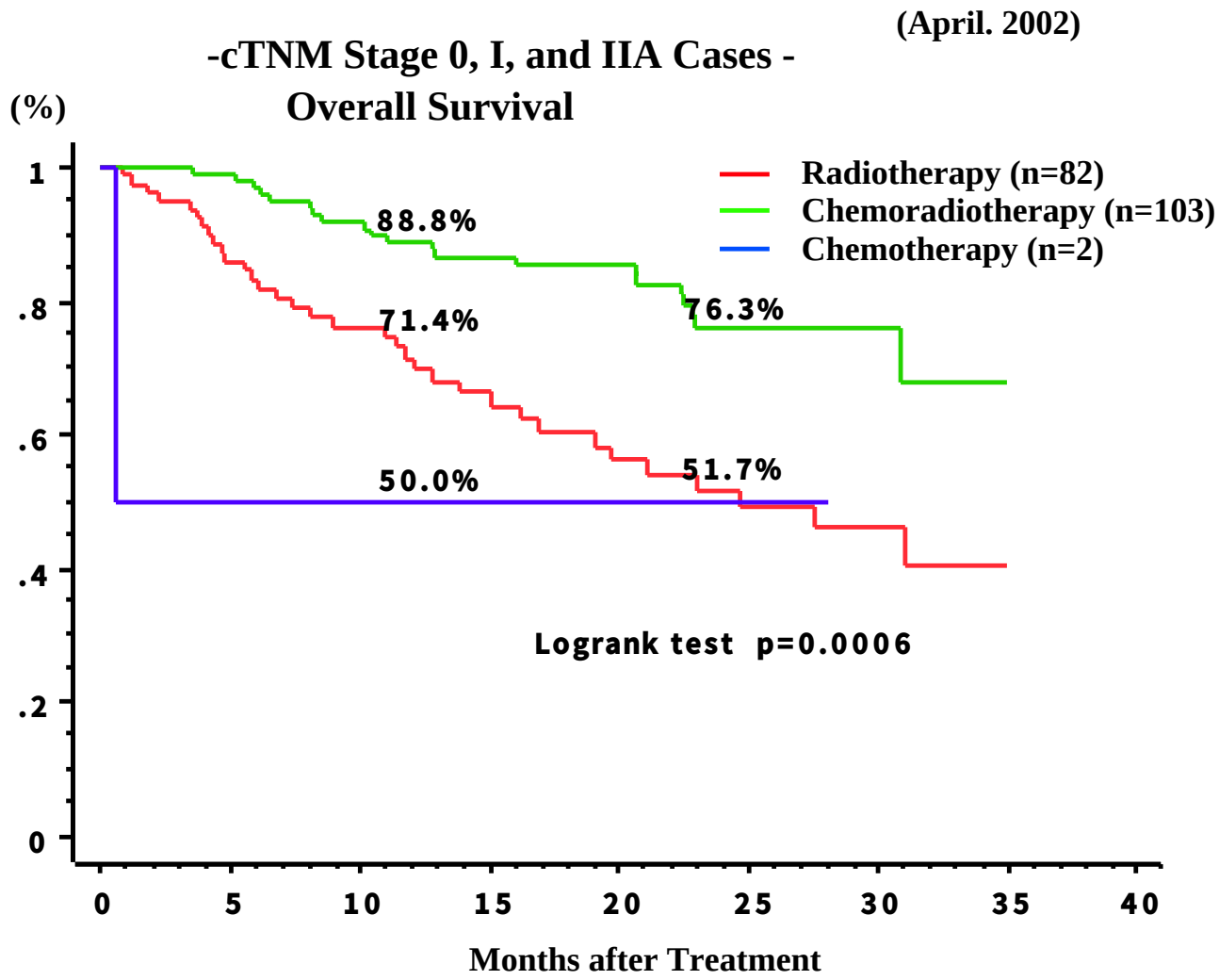
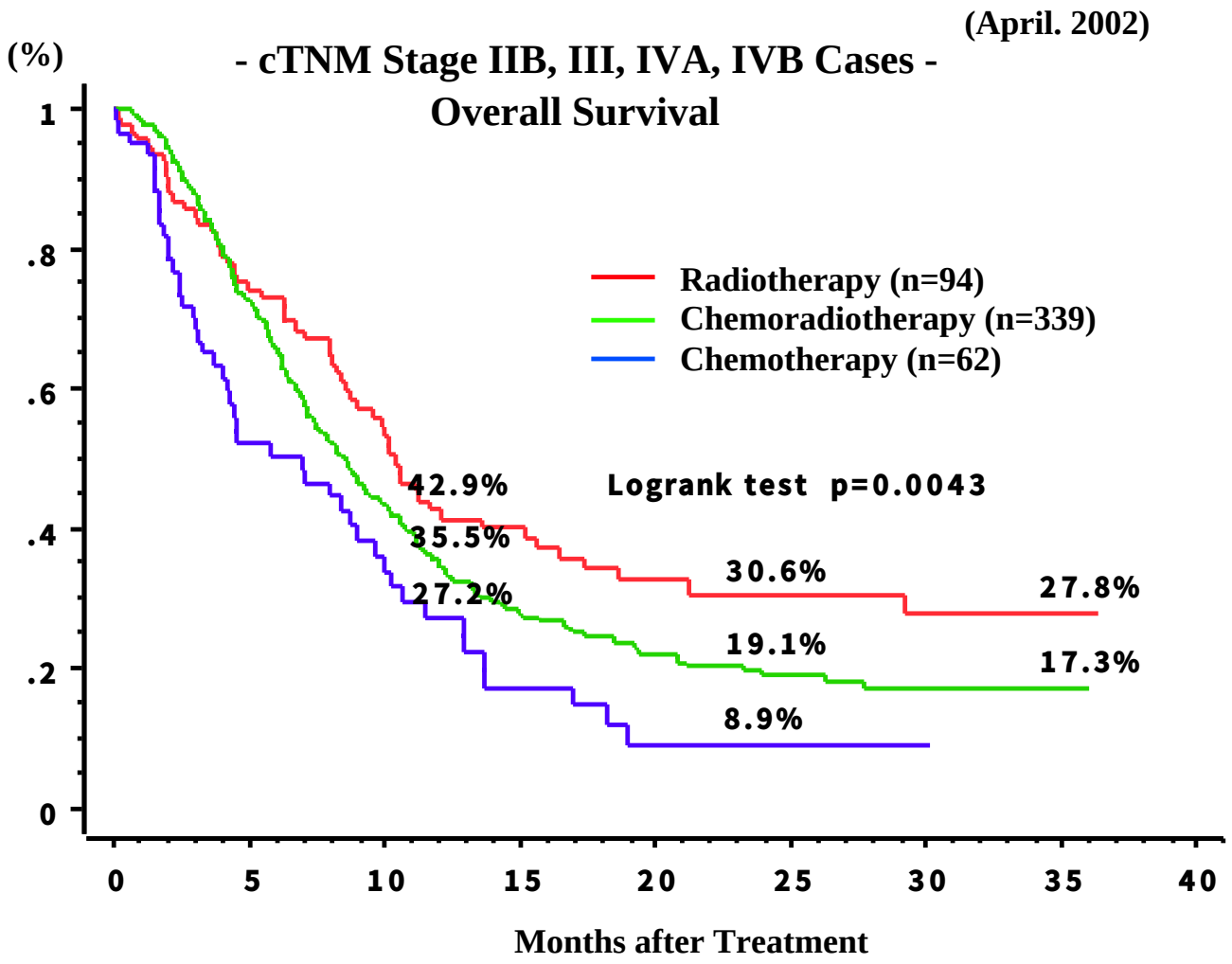


Figure 6) Cumulative survival curves of patients treated by chemotherapy and/or radiotherapy (cStage IIB-IVB)



IV. Clinical Results in Patients treated by Palliative Operation in 1999

Table 28) Palliative operation cases without esophagectomy

Treatment	Cases	(%)
Surgery	11	(16.9%)
Surgery +radiotherapy	9	(13.8%)
Surgery + radiotherapy + endoscopic treatment	1	(1.5%)
Surgery + chemoradiotherapy	35	(53.8%)
Surgery + chemotherapy	7	(10.8%)
Surgery + endoscopic treatment	2	(3.1%)
Total	65	(100%)

Surgical treatment	Cases	(%)
Probe thoraco / laparotomy	24	(36.9%)
Bypass-operation	12	(18.5%)
Gastrostomy / Jejunostomy	14	(21.5%)
Lymph adenectomy	6	(9.2%)
Others	5	(7.7%)
Unknown	4	(6.2%)
Total	65	(100%)

Radiotherapy	Cases	(%)
No-irradiation	20	(30.8%)
Curative irradiation	33	(50.8%)
Palliative irradiation	12	(18.5%)
Unknown	0	
Total	65	(100%)

Total doses (Gy)	Cases	(%)
0	20	(30.8%)
2 - 19	2	(3.1%)
20 - 39	6	(9.2%)
40 - 59	12	(18.5%)
60 - 79	20	(30.8%)
80 - 99	0	
100 - `	1	(1.5%)
Unknown	4	(6.2%)
Total	65	(100%)

Table 29) Effectiveness of treatments (Palliative operation cases without esophagectomy)

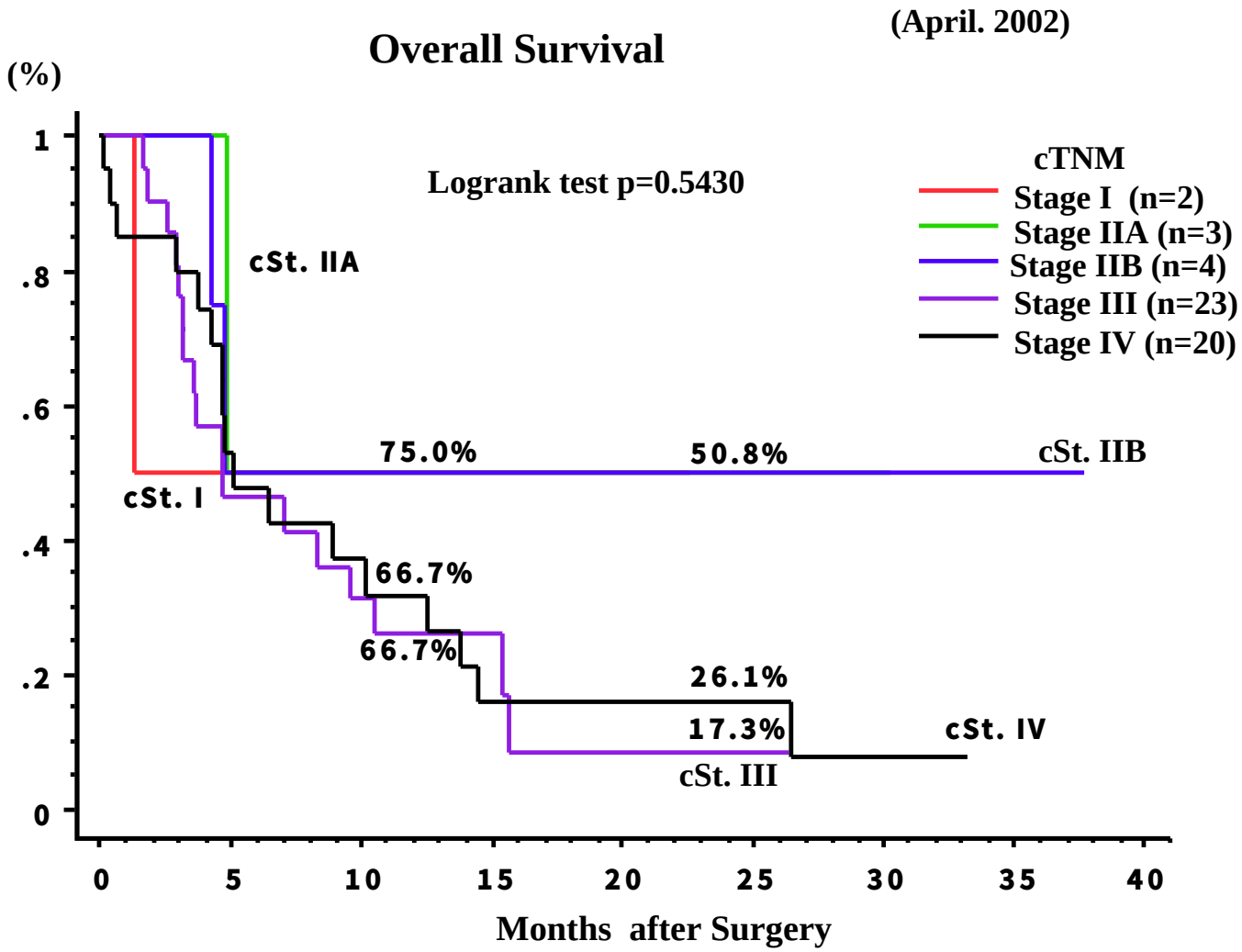
Chemotherapy	Cases (%)
(-)	23 (35.4%)
(+)	42 (64.6%)
Unknown	0
Total	65 (100%)

Surg + radiotherapy	Cases (%)
CR	0
PR	1 (10.0%)
NC	2 (20.0%)
PD	1 (10.0%)
Not evaluated	1 (10.0%)
Unknown	5 (50.0%)
Total	10 (100%)

Surg + chemoradiotherapy	Cases (%)
CR	2 (5.7%)
PR	15 (42.9%)
NC	10 (28.6%)
PD	4 (11.4%)
Not evaluated	0
Unknown	4 (11.4%)
Total	35 (100%)

Surg + chemotherapy	Cases (%)
CR	0
PR	1 (14.3%)
NC	3 (42.9%)
PD	2 (28.6%)
Not evaluated	0
Unknown	1 (14.3%)
Total	7 (100%)

Figure 7) Cumurative survival curves of patients treated by palliative surgery (cTNM)



V. Clinical Results in Patients treated with Esophagectomy in 1999

Table 30) Cases of esophagectomy (treatment, surgical procedure, and location of the tumor)

Treatment	Cases	(%)
Esophagectomy	971	(53.4%)
Esophagectomy + radiotherapy*	170	(9.4%)
Esophagectomy + chemoradiotherapy**	326	(17.9%)
Esophagectomy + chemotherapy***	318	(17.5%)
Esophagectomy + endoscopic treatment	31	(1.7%)
Esophagectomy + other treatment	1	(0.06%)
Total	1817	(100%)

* : + endoscopic treatment (1 cases)
** : + hyperthermia (9 cases), + endoscopic treatment (3 cases), + other treatment (1 case)
+ other treatment (1 case)
***: + hyperthermia (2 cases), + endoscopic treatment (3 cases), + hyperthermia + endoscopic treatment (1 case), + other treatment (1 case)

Surgical procedures	Cases	(%)
Esophagectomy without reconstruction	3	(0.2%)
Esophagectomy + reconstruction (2-stage operation)	37	(2.0%)
Esophagectomy with reconstruction	1777	(97.8%)
Unknown	0	
Total	1817	(100%)

Location	Cases	(%)
Pharynx	5	(0.3%)
Cervical esophagus	78	(4.3%)
Upper thoracic esophagus	181	(10.0%)
Middle thoracic esophagus	902	(49.6%)
Lower thoracic esophagus	490	(27.0%)
Abdominal esophagus	100	(5.5%)
EG Junction	15	(0.8%)
Cardia	3	(0.2%)
Unknown	43	(2.4%)
Total	1817	(100%)

Table 31) Cases of esophagectomy (surgical approach and region of lymphadenectomy)

Approach	Cases	(%)
Cervical approach	51	(2.8%)
Right thoracotomy	1464	(80.6%)
Left thoracotomy	27	(1.5%)
Left thoracoabdominal apprroarch	60	(3.3%)
Laparotomy	28	(1.5%)
Transhiatal (without blunt dissection)	7	(0.4%)
Transhiatal (with blunt dissection)	95	(5.2%)
Sternotomy	15	(0.8%)
Others	15	(0.8%)
Unknown	55	(3.0%)
Total	1817	(100%)

Region of lymphadenectomy	Cases	(%)
(-)	39	(2.1%)
C	56	(3.1%)
C+UM	23	(1.3%)
C+UM+MLM	36	(2.0%)
C+UM+MLM+A	638	(35.1%)
C+UM+A	4	(0.2%)
C+MLM	0	
C+MLM+A	4	(0.2%)
C+A	15	(0.8%)
UM	4	(0.2%)
UM+MLM	25	(1.4%)
UM+MLM+A	599	(33.0%)
UM+A	6	(0.3%)
MLM	23	(1.3%)
MLM+A	196	(10.8%)
A	67	(3.7%)
Unknown	82	(4.5%)
Total	1817	(100%)

C: bilateral cervical nodes
UM: upper mediastinal nodes
MLM:middle-lower mediastinal nodes
A:abdominal nodes

Table 32) Cases of esophagectomy (esophageal reconstruction)

Reconstruction route	Cases	(%)
(-)	5	(0.3%)
Antethoracic	193	(10.6%)
Retrosternal	648	(35.7%)
Posterior mediastinal	465	(25.6%)
High intrathoracic*	245	(13.5%)
Low intrathoracic**	113	(6.2%)
Transhiatal	33	(1.8%)
Cervical	26	(1.4%)
Others	5	(0.3%)
Unknown	84	(4.6%)
Total	1817	(100%)

* with upper mediastinal anastomosis

** with middle/lower mediastinal anastomosis

Organs for esophageal replacement	Cases	(%)
(-)	5	(0.3%)
Whole stomach*	91	(5.0%)
Gastric tube**	1409	(77.5%)
Jejunum***	97	(5.3%)
Free jejunum	28	(1.5%)
Colon	122	(6.7%)
Free colon	5	(0.3%)
Skin graft	0	
Others	0	
Unknown	60	(3.3%)
Total	1817	(100%)

* : Free jejunum+Whole stomach (1 case)

** : Gastric tube+Jejunum (7 cases), Free jejunum+Gastric tube (2 cases)
Colon+Gastric tube(1 case), Free Colon+Gastric tube(1 case),
Skin roll+Gastric tube (1case)

***: Jejunum+Colon (2 case)

Table 33) Cases of intrathoracic esophagectomy (location of the tumor and reconstruction route)

Location	Upper thoracic		Middle thortacic		Lower thoracic		Total thoracic	
Reconstruction route	Cases	(%)	Cases	(%)	Cases	(%)	Cases	(%)
(-)	0		3	(0.3%)	1	(0.2%)	4	(0.3%)
Antethoracic	24	(13.3%)	107	(11.9%)	57	(11.6%)	188	(12.0%)
Retrosternal	73	(40.3%)	374	(41.5%)	172	(35.1%)	619	(39.4%)
Posterior mediastinal	70	(38.7%)	238	(26.4%)	100	(20.4%)	408	(25.9%)
High intrathoracic*	9	(5.0%)	121	(13.4%)	95	(19.4%)	225	(14.3%)
Low intrathoracic**	0		25	(2.8%)	51	(10.4%)	76	(4.8%)
Transhiatal	0		0		7	(1.4%)	7	(0.4%)
Cervical	0		2	(0.2%)	0		2	(0.1%)
Others	0		1	(0.1%)	0		1	(0.06%)
Unknown	5	(2.8%)	31	(3.4%)	7	(1.4%)	43	(2.7%)
Total	181	(100%)	902	(100%)	490	(100%)	1573	(100%)

Table 34) Cases of esophagectomy for external lesion of the thorax (location of the tumor and reconstruction route)

Location	Pharynx		Cervical esophagus		Abdominal esophagus		EGJ/Cardia	
Reconstruction route	Cases	(%)	Cases	(%)	Cases	(%)	Cases	(%)
(-)	0		1	(1.3%)	0		0	
Antethoracic	0		2	(2.6%)	2	(2.0%)	0	
Retrosternal	0		9	(11.5%)	15	(15.0%)	1	(5.6%)
Posterior mediastinal	1	(20.0%)	41	(52.6%)	12	(12.0%)	0	
High intrathoracic*	0		0		19	(19.0%)	1	(5.6%)
Low intrathoracic**	0		0		30	(30.0%)	7	(38.9%)
Transhiatal	0		0		17	(17.0%)	9	(50.0%)
Cervical	3	(60.0%)	21	(26.9%)	0		0	
Others	1	(20.0%)	1	(1.3%)	2	(2.0%)	0	
Unknown	0		3	(3.8%)	3	(3.0%)	0	
Total	5	(100%)	78	(100%)	100	(100%)	18 *	(100%)

* E=G:15cases, G:3 cases

Table 35) Cases of intrathoracic esophagectomy (location of the tumor and lymph node dissection)

Location	Upper thoracic		Middle thoracic		Lower thoracic		Total	
Region of lymphadenectomy	Cases	(%)	Cases	(%)	Cases	(%)	Cases	%)
(-)	9	(5.0%)	14	(1.6%)	9	(1.8%)	32	(2.0%)
C	5	(2.8%)	16	(1.8%)	6	(1.2%)	27	(1.7%)
C+UM	2	(1.1%)	0		1	(0.2%)	3	(0.2%)
C+UM+MLM	8	(4.4%)	17	(1.9%)	9	(1.8%)	34	(2.2%)
C+UM+MLM+A	90	(49.7%)	382	(42.4%)	138	(28.2%)	610	(38.8%)
C+UM+A	0		0		0		0	
C+MLM	0		0		0		0	
C+MLM+A	1	(0.6%)	2	(0.2%)	0		3	(0.2%)
C+A	2	(1.1%)	3	(0.3%)	2	(0.4%)	7	(0.4%)
UM	1	(0.6%)	2	(0.2%)	1	(0.2%)	4	(0.3%)
UM+MLM	3	(1.7%)	16	(1.8%)	5	(1.0%)	24	(1.5%)
UM+MLM+A	42	(23.2%)	339	(37.6%)	196	(40.0%)	577	(36.7%)
UM+A	1	(0.6%)	3	(0.3%)	2	(0.4%)	6	(0.4%)
MLM	3	(1.7%)	9	(1.0%)	6	(1.2%)	18	(1.1%)
MLM+A	4	(2.2%)	55	(6.1%)	82	(16.7%)	141	(9.0%)
A	3	(1.7%)	20	(2.2%)	22	(4.5%)	45	(2.9%)
Unknown	7	(3.9%)	24	(2.7%)	11	(2.2%)	42	(2.7%)
Total	181	(100%)	902	(100%)	490	(100%)	1573	(100%)

C: bilateral cervical nodes
UM: upper mediastinal nodes
MLM: middle-lower mediastinal nodes
A: abdominal nodes

Table 36) Cases of esophagectomy for external lesion of the thorax (location of the tumor and lymph node dissection)

Location	Pharynx		Cervical esophagus		Abdominal esophagus		EGJ/Cardia	
Region of lymphadenectomy	Cases	(%)	Cases	(%)	Cases	(%)	Cases	(%)
(-)	0		4	(5.1%)	1	(1.0%)	0	
C	5	(100%)	22	(28.2%)	0		0	
C+UM	0		20	(25.6%)	0		0	
C+UM+MLM	0		1	(1.3%)	0		0	
C+UM+MLM+A	0		19	(24.4%)	9	(9.0%)	0	
C+UM+A	0		4	(5.1%)	0		0	
C+MLM	0		0		0		0	
C+MLM+A	0		0		1	(1.0%)	0	
C+A	0		6	(7.7%)	2	(2.0%)	0	
UM	0		0		0		0	
UM+MLM	0		1	(1.3%)	0		0	
UM+MLM+A	0		0		18	(18.0%)	1	(5.6%)
UM+A	0		0		0		0	
MLM	0		0		3	(3.0%)	2	(11.1%)
MLM+A	0		0		46	(46.0%)	9	(50.0%)
A	0		1	(1.3%)	16	(16.0%)	5	(27.8%)
Unknown	0		0		4	(4.0%)	1	(5.6%)
Total	5	(100%)	78	(100%)	100	(100%)	18*	(100%)

*E=G:15cases, G:3cases

Table 37) Cases of esophagectomy (vascular anastomosis and endoscopic surgery)

Vascular anastomosis	Cases	(%)
(-)	1636	(90.0%)
(+)	105	(5.8%)
Unknown	76	(4.2%)
Total	1817	(100%)

Endoscopic surgery	Cases	(%)
(-)	1557	(85.7%)
Thoracoscopy	64	(3.5%)
Thoracoscopy assist	85	(4.7%)
Mediastinoscopy assist	30	(1.7%)
Laparoscopy assist	6	(0.3%)
Thoracoscopy & Laparoscopy assist	1	(0.06%)
Unknown	74	(4.1%)
Total	1817	(100%)

Table 38) Cases of esophagectomy (operative findings of cT and combined resected organs)

Macroscopic T-category (cT)	Cases	(%)
T0	58	(3.2%)
T1	418	(23.0%)
T2	397	(21.8%)
T3	683	(37.6%)
T4	197	(10.8%)
Unknown	64	(3.5%)
Total	1817	(100%)

cT4 by lymphatic metastasis	Cases	(%)
(-)	1692	(93.1%)
N1(T4)	13	(0.7%)
N2(T4)	19	(1.0%)
N3(T4)	6	(0.3%)
N4(T4)	8	(0.4%)
Nx(T4)	3	(0.2%)
Unknown	76	(4.2%)
Total	1817	(100%)

Organs*	Cases	(%)
(-)	76	(26.2%)
Larynx	28	(9.7%)
Trachea	21	(7.2%)
Aorta	5	(1.7%)
Lung	29	(10.0%)
Pericardium	21	(7.2%)
Diaphragm	23	(7.9%)
Stomach	8	(2.8%)
Pancreas+spleen	16	(5.5%)
Thoracic duct	21	(7.2%)
Recurrent nerve	11	(3.8%)
Recurrent nerve (main trunk)	6	(2.1%)
Others	20	(6.9%)
Unknown	5	(1.7%)
Total of resected organs	290	(100%)
Total of cT4 cases	197	

*: Organs resected in addition to the esophagus

Table 39) Cases of esophagectomy (operative findings of the tumor feature and size)

Macroscopic type	Cases	(%)
0-Ip	34	(1.9%)
0-Ipl	71	(3.9%)
0-Isep	19	(1.0%)
0-IIa	108	(5.9%)
0-IIb	38	(2.1%)
0-IIc	236	(13.0%)
0-III	28	(1.5%)
0-V	17	(0.9%)
1p	29	(1.6%)
1c	9	(0.5%)
1pl	59	(3.2%)
1sep	3	(0.2%)
2	505	(27.8%)
3	455	(25.0%)
4s	20	(1.1%)
4ns	4	(0.2%)
5c	13	(0.7%)
5s	6	(0.3%)
5u	73	(4.0%)
Unknown	90	(5.0%)
Total	1817	(100%)

Size of Tumor (mm)	Cases	(%)
- 9	27	(1.5%)
10 - 19	129	(7.1%)
20 - 29	227	(12.5%)
30 - 39	224	(12.3%)
40 - 49	296	(16.3%)
50 - 59	292	(16.1%)
60 - 69	184	(10.1%)
70 - 79	135	(7.4%)
80 - 89	79	(4.3%)
90 - 99	35	(1.9%)
100 -109	32	(1.8%)
110 -119	11	(0.6%)
120 -129	14	(0.8%)
130 -139	8	(0.4%)
140 -149	5	(0.3%)
150 -	11	(0.6%)
Unknown	108	(5.9%)
Total	1817	(100%)

Table 40) Histologic types of resected specimen and multiple primary cancer

Histologic types		Cases	(%)
Not examined		1	(0.06%)
SCC	SCC	106	(5.8%)
	Well diff.	400	(22.0%)
	Moderately diff.	774	(42.6%)
	Poorly diff.	341	(18.8%)
Adenocarcinoma		29	(1.6%)
Barrett's adenocarcinoma		9	(0.5%)
Adenosquamous cell carcinoma		10	(0.6%)
Epidermoid carcinoma		4	(0.2%)
Adenoid cystic carcinoma		3	(0.2%)
Basoloid carcinoma		26	(1.4%)
Undiff. carcinoma (small cell)		14	(0.8%)
Undiff. carcinoma		5	(0.3%)
Sarcoma		0	
So-called carcinosarcoma		12	(0.7%)
Pseudsarcoma		1	(0.06%)
True carcinosarcoma		0	
Malignant melanoma		2	(0.1%)
Dysplasia		3	(0.2%)
Other		11	(0.6%)
Unknown		66	(3.6%)
Total		1817	(100%)

Multiple primary cancer	Cases	(%)
(-)	1524	(83.9%)
(+)	220	(12.1%)
Unknown	73	(4.0%)
Total	1817	(100%)

Table 41) Pathological findings of resected specimen (residual cancer, intraepithelial spread, and infiltrative growth pattern)

Residual cancer cells at the transected stump

proximal (p)/distal (d)	Cases	(%)
p / d (-)	1695	(93.3%)
p / d (+)	59	(3.2%)
Unknown	63	(3.5%)
Total	1817	(100%)

Residual cancer cell in the cut surface of the esophageal wall (ew) of the resected specimen

ew	Cases	(%)
ew(-)	1620	(89.2%)
ew(+)	121	(6.7%)
Unknown	76	(4.2%)
Total	1817	(100%)

Intraepithelial spread (ie)

ie	Cases	(%)
ie(-)	1017	(56.0%)
ie(+)	641	(35.3%)
ie(++)superficial	40	(2.2%)
Unknown	119	(6.5%)
Total	1817	(100%)

Infiltrative growth pattern (inf)

inf	Cases	(%)
inf **α**	264	(14.5%)
inf **β**	981	(54.0%)
inf **γ**	206	(11.3%)
Unknown	366	(20.1%)
Total	1817	(100%)

Table 42) Pathological findings of resected specimen (vessel invasion and skip metastasis)

Lympatic vessel invasion (ly)		Cases	(%)
ly0		550	(30.3%)
ly(+)	ly(+)	52	(2.9%)
	ly1	542	(29.8%)
	ly2-3	563	(31.0%)
Unknown		110	(6.1%)
Total		1817	(100%)

Blood vessel invasion (v)		Cases	(%)
v0		885	(48.7%)
v(+)	v(+)	17	(0.9%)
	v1	456	(25.1%)
	v2-3	345	(19.0%)
Unknown		114	(6.3%)
Total		1817	(100%)

Skip metastasis in the esophageal wall (im-e)	Cases	(%)
im-e (-)	1566	(86.2%)
im-e (+)	166	(9.1%)
Unknown	85	(4.7%)
Total	1817	(100%)

Skip metastasis in the stomach wall (im-st)	Cases	(%)
im-st (-)	1664	(91.6%)
im-st (+)	60	(3.3%)
Unknown	93	(5.1%)
Total	1817	(100%)

Table 43) Pathological findings of resected specimen (pT)

Depth of tumor invasion

pT-category	Cases	(%)
Not examined	0	
pT0	21	(1.2%)
pTis	24	(1.3%)
pT1a	130	(7.2%)
pT1b	410	(22.6%)
pT2	248	(13.6%)
pT3	757	(41.7%)
pT4	162	(8.9%)
Unknown	65	(3.6%)
Total	1817	(100%)

Subclassification of superficial carcinoma

Subclassification	Cases	(%)
m1 (pTis)*	24	(6.2%)
m2 (pT1a)**	49	(3.8%)
m3 (pT1a)***	81	(17.4%)
sm1(pT1b)	70	(10.5%)
sm2 (pT1b)	111	(20.2%)
sm3 (pT1b)	176	(26.2%)
Unknown (pT1b)	53	(15.7%)
Total	564	(100%)

* ep = epithel

** lpm = lamina proplia mucosa

*** mm = muscularis mucosa

Table 44) Pathological findings of resected specimen (pN)

Lymph node metastasis	Cases	(%)
n(-)	715	(39.4%)
n1+)	231	(12.7%)
n2(+)	509	(28.0%)
n3(+)	168	(9.2%)
n4(+)	131	(7.2%)
Unknown	63	(3.5%)
Total	1817	(100%)

Number of lymph node metastasis	Cases	(%)
0	715	(39.4%)
1~3	594	(32.7%)
4~7	259	(14.3%)
8~	154	(8.5%)
Unknown	95	(5.2%)
Total	1817	(100%)

Table 45) Pathological findings of resected specimen (grade of lymph node metastasis corrected using number of metastasis and fields of lymph node metastasis)

Grade of lymph node metastasis (corrected using number of metastasis)

Grade of metastasis	Cases	(%)
gN0	715	(39.4%)
gN1(n1a)	200	(11.0%)
gN2(n1b)	15	(0.8%)
gN2(n2a)	309	(17.0%)
gN3(n1c)	5	(0.3%)
gN3(n2b)	149	(8.2%)
gN3(n3a)	58	(3.2%)
gN4(n2c)	42	(2.3%)
gN4(n3b)	61	(3.4%)
gN4(n3c)	41	(2.3%)
gN4(n4a)	25	(1.4%)
gN4(n4b)	34	(1.9%)
gN4(n4c)	68	(3.7%)
Unknown	95	(5.2%)
Total	1817	(100%)

Number of lymph node metastasis
a : 1~3
b : 4~7
c : 8~

Fields of lymph node metastasis

Field of metastasis	Cases	(%)
n(-)	715	(39.4%)
C	65	(3.6%)
A+C	73	(4.0%)
A+B+C	81	(4.5%)
C+B	25	(1.4%)
A	239	(13.2%)
A+B	264	(14.5%)
B	260	(14.3%)
Unknown	95	(5.2%)
Total	1817	(100%)

A: mediastinal lymph nodes
B: abdominal lymph nodes
C: cervical lymph nodes

Fig. 8) N-category in Japanese Classification (JSED 1998 ~)

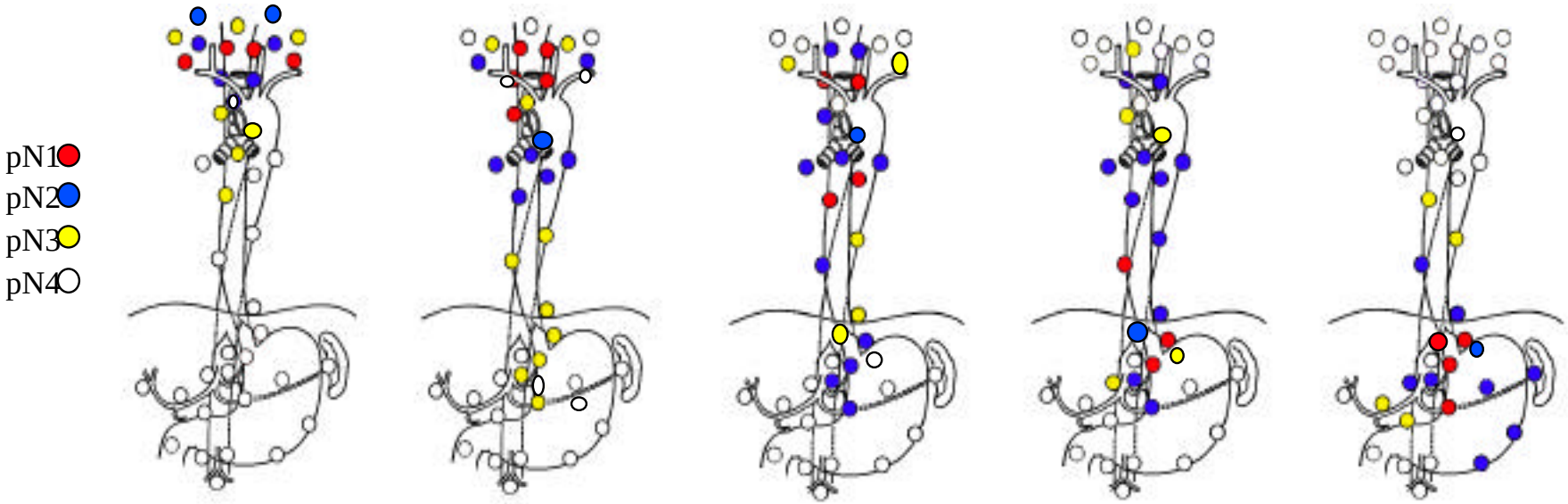


Fig. 9) Grade of metastasis (gN) corrected by number of metastatic node (JSED 1998 ~)

pN-category of JSED	Number of lymph node metastasis			
	0	a:(1~3)	b:(4~7)	c:(8~)
pN0	gN0			
pN1		gN1	gN2	gN3
pN2		gN2	gN3	
pN3		gN3	gN4	
pN4				

Fig. 10) Pathorogical Stage of JSED (1998 ~)

	gN0	gN1	gN2	gN3	gN4	M1
Tis	0					
T1a		I				
T1b	I	II	III	III	IVa	IVb
T2						
T3						
T4	III					

Table 46) Pathological findings of resected specimen (distant metastasis, stage, grade of dissection, and curability)

Distant metastasias (pM)	Cases	(%)
pM0	1675	(92.2%)
pM1	43	(2.4%)
Unknown	99	(5.4%)
Total	1817	(100%)

Pathological stage	Cases	(%)
0	151	(8.3%)
I	241	(13.3%)
II	435	(23.9%)
III	486	(26.7%)
IVa	305	(16.8%)
IVb	41	(2.3%)
Unknown	158	(8.7%)
Total	1817	(100%)

Grade of dissection (D)	Cases	(%)
D0	136	(7.5%)
DI	224	(12.3%)
DII	719	(39.6%)
DIII	651	(35.8%)
Unknown	87	(4.8%)
Total	1817	(100%)

Curability	Cases	(%)
Absolutely curative (a)	1023	(56.3%)
Relatively curative (b)	521	(28.7%)
Absolutely non-curative (c)	170	(9.4%)
Unknown	103	(5.7%)
Total	1817	(100%)

Table 47) Pathological findings of resected specimen (residual tumor, multiple cancers, and multiple lesions)

Residual tumor (R)	Cases	(%)
R0	1490	(82.0%)
R1	105	(5.8%)
R2	120	(6.6%)
Rx	31	(1.7%)
Total	1817	(100%)

Primary multiple cancers	Cases	(%)
(-)	1524	(83.9%)
(+)	220	(12.1%)
Unknown	73	(4.0%)
Total	1883	(100%)

Multiple malignant lesions	Cases	(%)
(-)	1358	(74.7%)
(+)	350	(19.3%)
Unknown	109	(6.0%)
Total	1817	(100%)

Number of malignant lesions	Cases	(%)
0	1358	(74.7%)
1	119	(6.5%)
2	102	(5.6%)
3	31	(1.7%)
4	7	(0.4%)
5 ~	10	(0.6%)
Unknown	190	(10.5%)
Total	1817	(100%)

Table 48) Adjuvant therapy for cases of esophagectomy

Radiotherapy	Cases	(%)
(-)	1256	(69.1%)
Preoperative	201	(11.1%)
Pre+intraoperative(IOR)+Post	1	(0.06%)
Pre+postoperative	2	(0.1%)
IOR	3	(0.2%)
IOR+postoperative	1	(0.6%)
Postoperative	312	(17.2%)
Time to recurrence	39	(2.1%)
Unknown	2	(0.1%)
Total	1817	(100%)

Doses of irradiation (Gy)	Cases	(%)
0	1256	(69.1%)
1 ~ 19	19	(1.0%)
20 ~ 39	89	(4.9%)
40 ~ 59	283	(15.6%)
60 ~ 79	106	(5.8%)
80 ~ 99	3	(0.2%)
100~	5	(0.3%)
Unknown	56	(3.1%)
Total	1817	(100%)

Chemotherapy	Cases	(%)
(-)	1128	(62.1%)
Preoperative	276	(15.2%)
Pre+intraoperative(IOR)	1	(0.06%)
Pre+postoperative	52	(2.9%)
Intraoperative (IOR)	0	
IOR+postoperative	0	
Postoperative	309	(17.0%)
Time to recurrence	49	(2.7%)
Unknown	2	(0.1%)
Total	1817	(100%)

Type of chemotherapy	Cases	(%)
(-)	1128	(62.1%)
Chemotherapy alone	371	(20.4%)
Concurent chemoradiotherapy	238	(13.1%)
Sequential chemoradiotherapy	36	(2.0%)
Others	8	(0.4%)
Unknown	36	(2.0%)
Total	1817	(100%)

Table 49) Outcome of cases with esophagectomy

Outcome	Cases (%)
Alive	1022 (56.2%)
Dead	700 (38.5%)
Lost of information	38 (2.1%)
Unknown	57 (3.1%)
Total	1817 (100%)

Courses of death	Cases (%)
Death due to recurrence	532 (76.0%)
Death due to other cancer	13 (1.9%)
Death due to other diseases(rec+)	10 (1.4%)
Death due to other diseases(rec-)	43 (6.1%)
Death due to other diseases(rec?)	10 (1.4%)
Operative death*	25 (3.6%)
Postoperative hospital death**	35 (5.0%)
Unknown	32 (4.6%)
Total death cases	700 (100%)

Initial recurrence lesion of death cases	Cases (%)
None	193 (21.8%)
Lymph node	186 (21.0%)
Lung	70 (7.9%)
Liver	92 (10.4%)
Bone	61 (6.9%)
Brain	13 (1.5%)
Primary lesion	83 (6.4%)
Dissemination	31 (3.5%)
Anastomotic region	2 (0.2%)
Others	21 (2.4%)
Unknown	135 (15.2%)
Total of recurrence lesion	887 (100%)
Total death cases	700

* Death within 30 days
** Death over 30 days

Figure 11) Overall survival curves of patients treated by esophagectomy (1999)

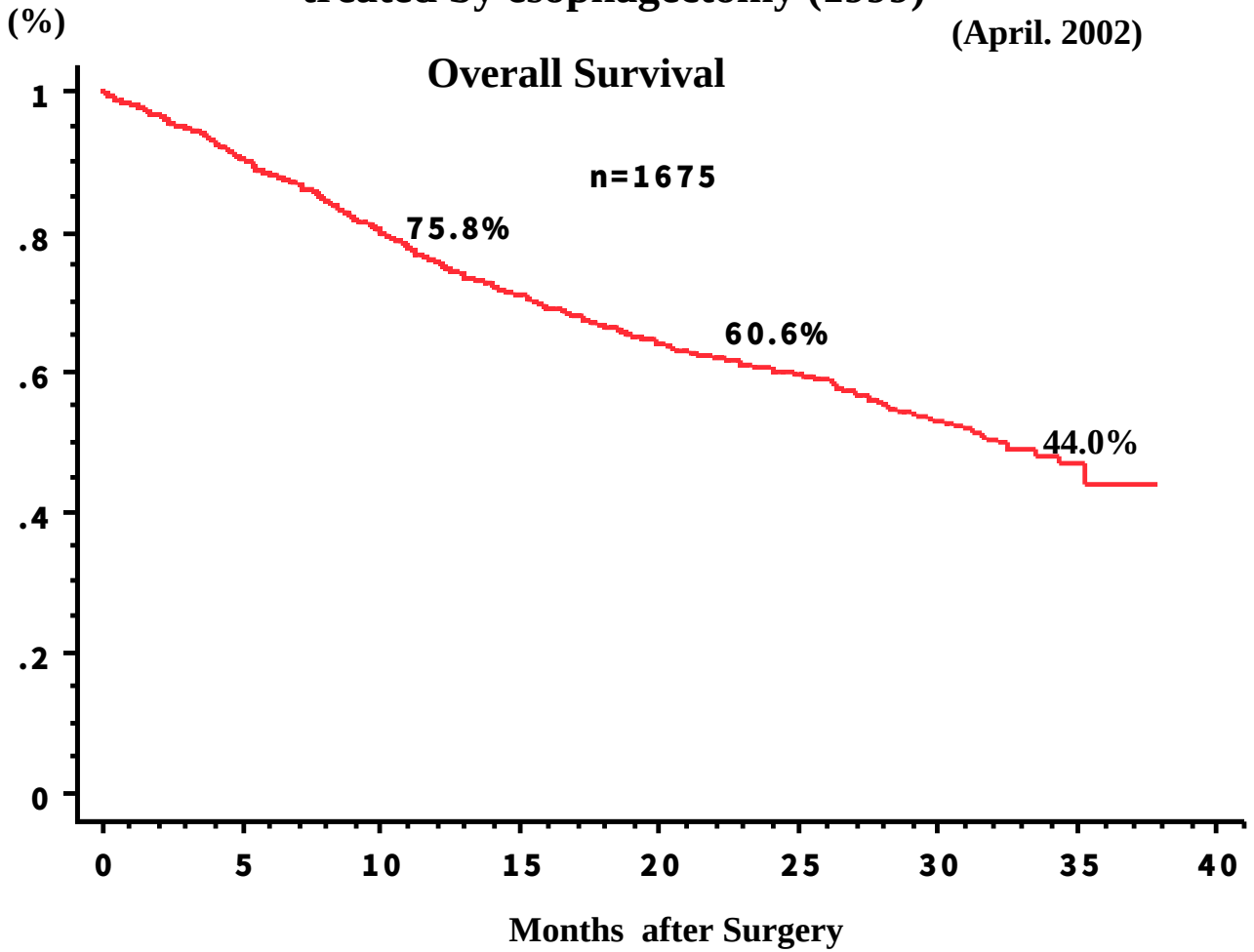


Figure12) Survival of patients treated by esophagectomy in relation to depth of tumor invasion (pT)

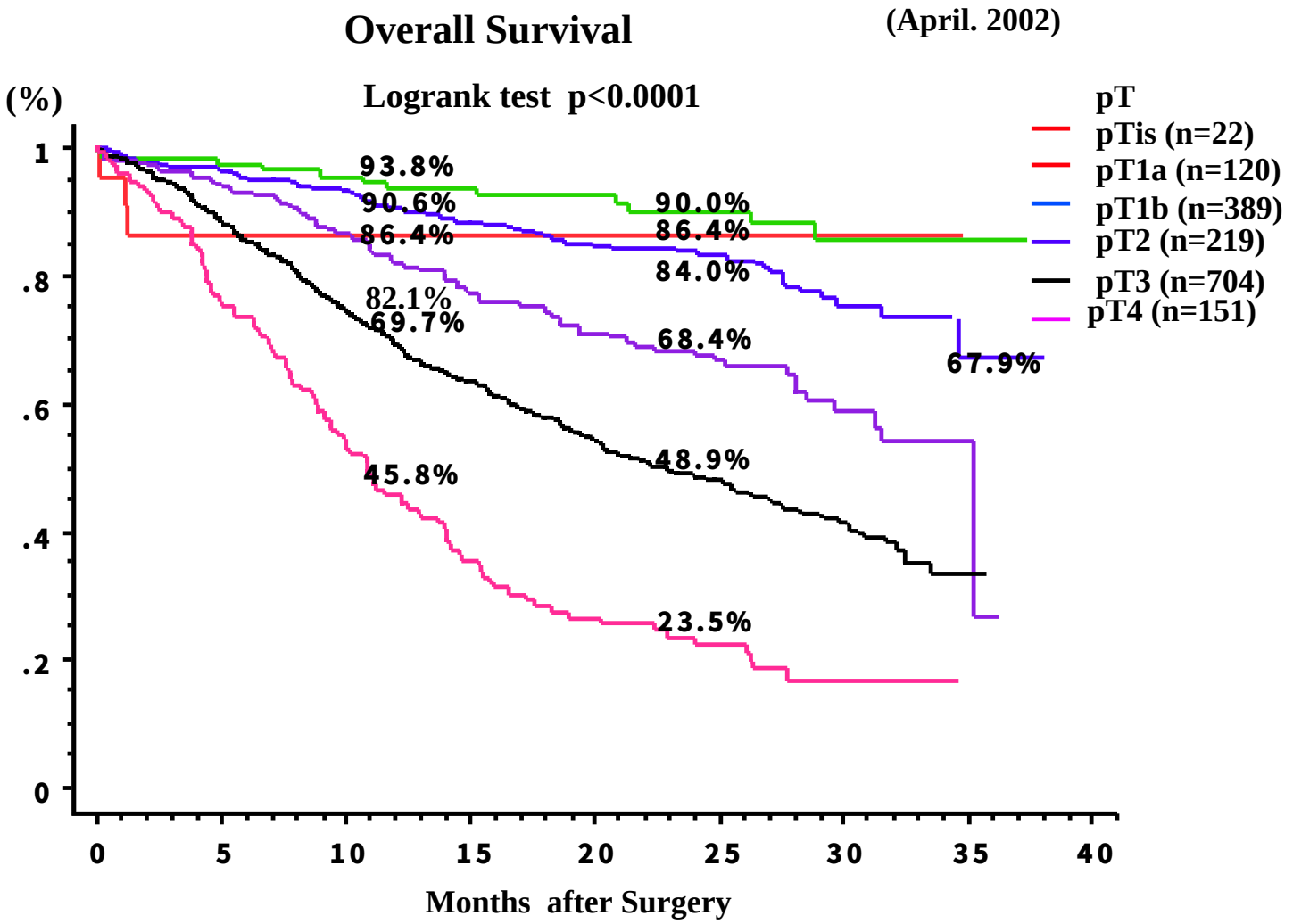


Figure 13) Survival of patients treated by esophagectomy in relation to lymph node metastasis (pN)

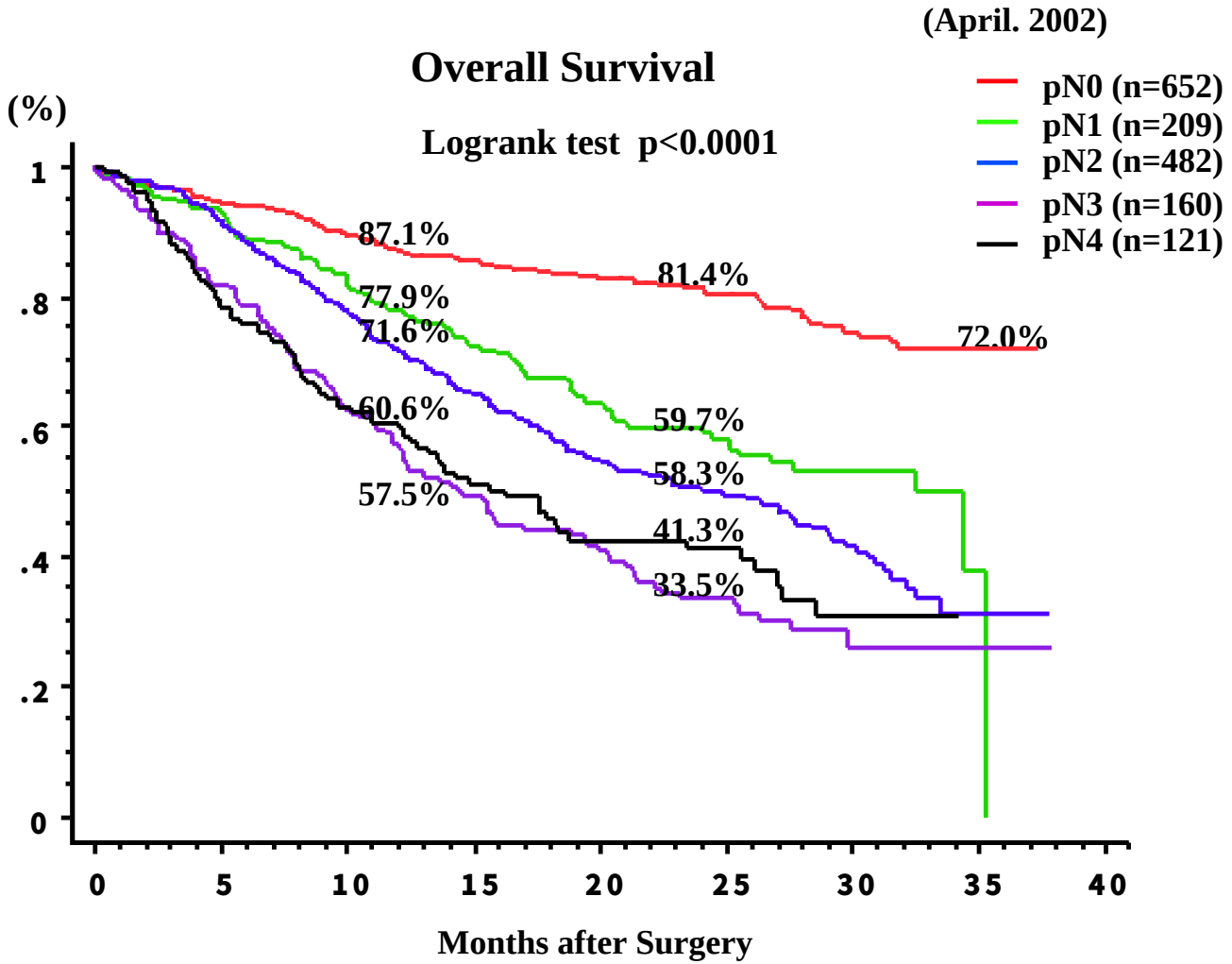


Figure 14) Survival of patients treated by esophagectomy in relation to pathological stage

(April. 2002)

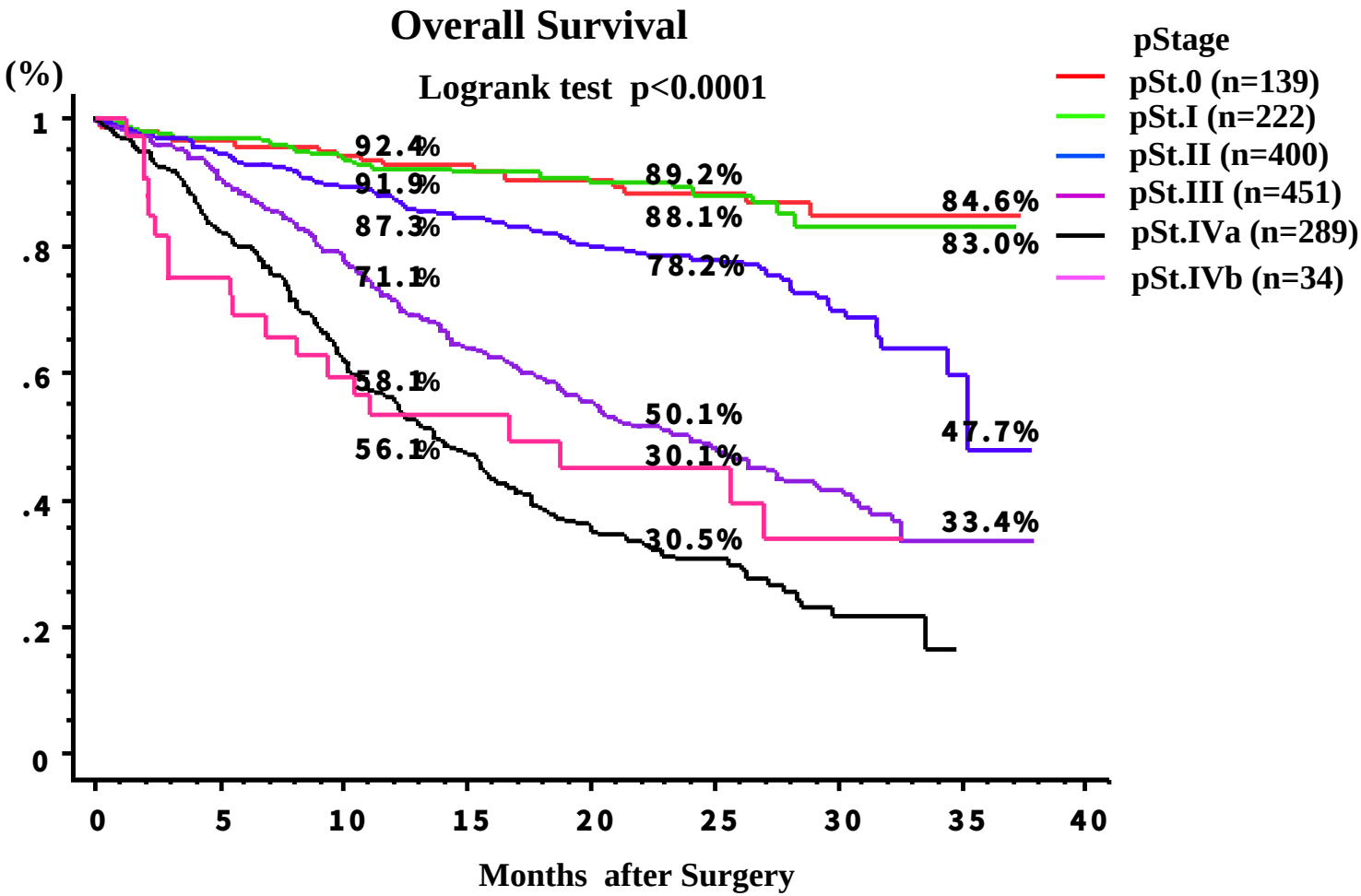


Figure 15) Survival of patients treated by esophagectomy in relation to residual tumor (R)

(April. 2002)

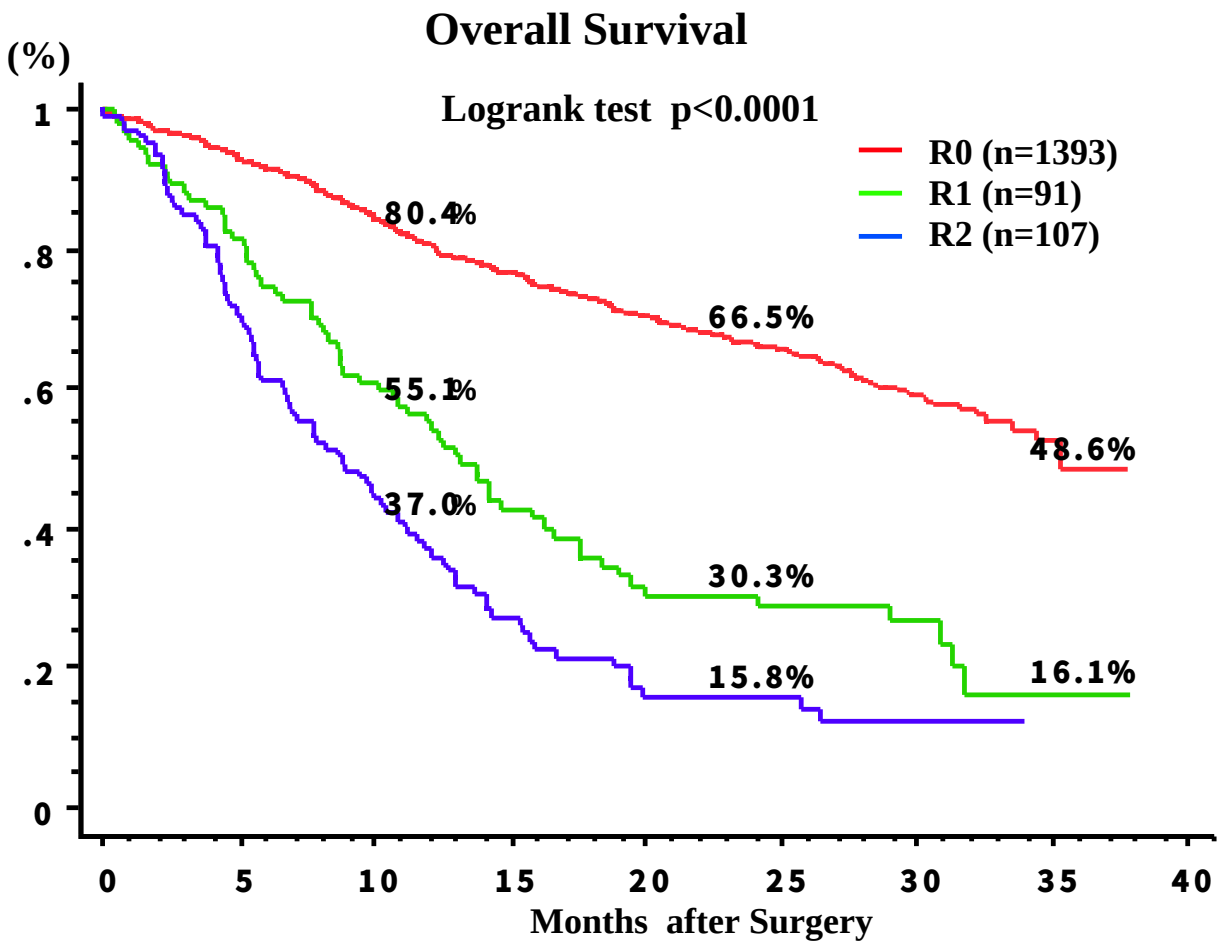


Figure 16) Survival of patients treated by esophagectomy in relation to number of metastatic node

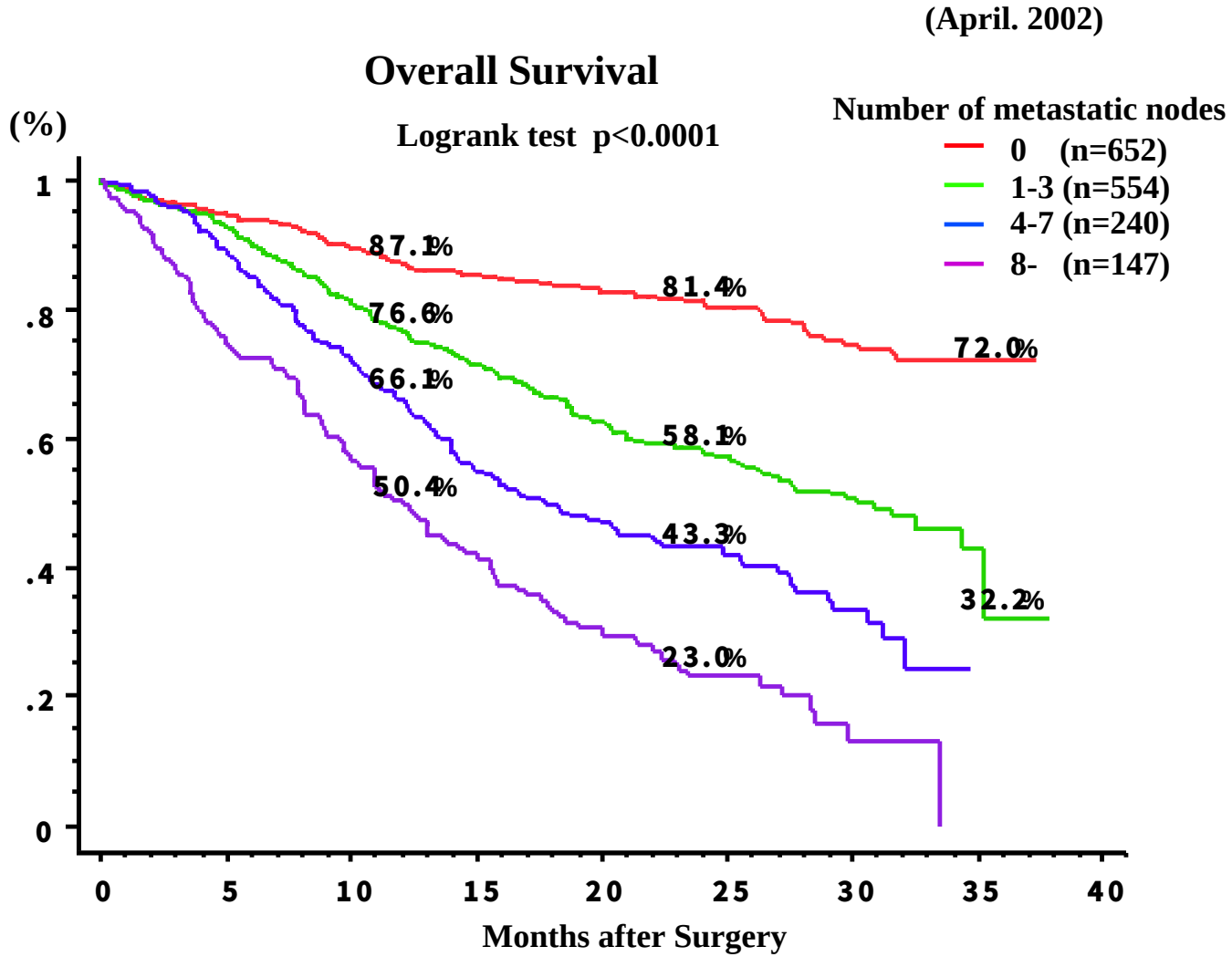
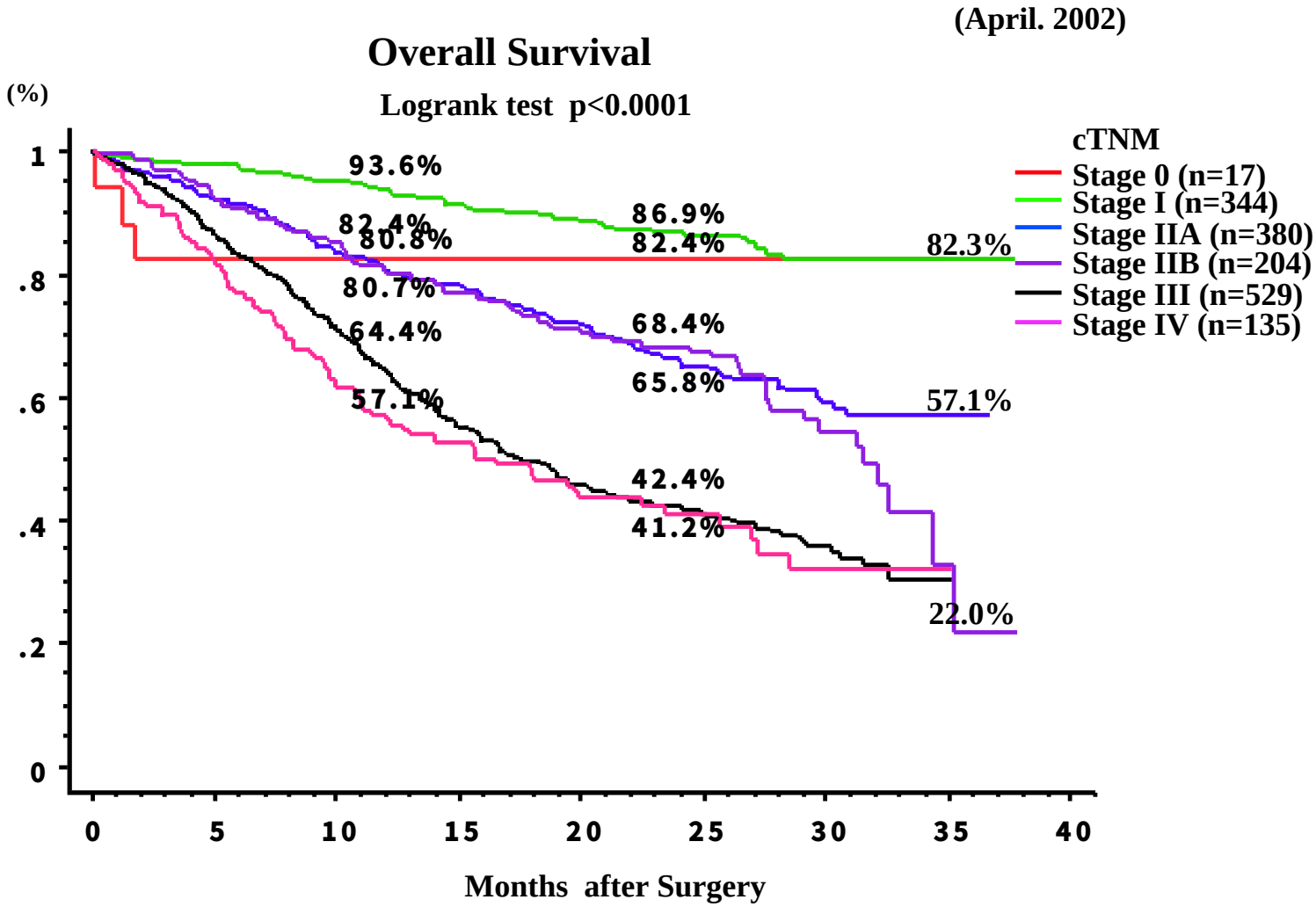


Figure 17) Survival of patients treated by esophagectomy in relation to clinical TNM-Stage



Long-term Results of Esophagectomy for Esophageal Cancer in Japan (1988-1997)

JSED

Contents

Figure 1) Overall survival curves of patients treated by esophagectomy (1988-1997)

(April. 2002)

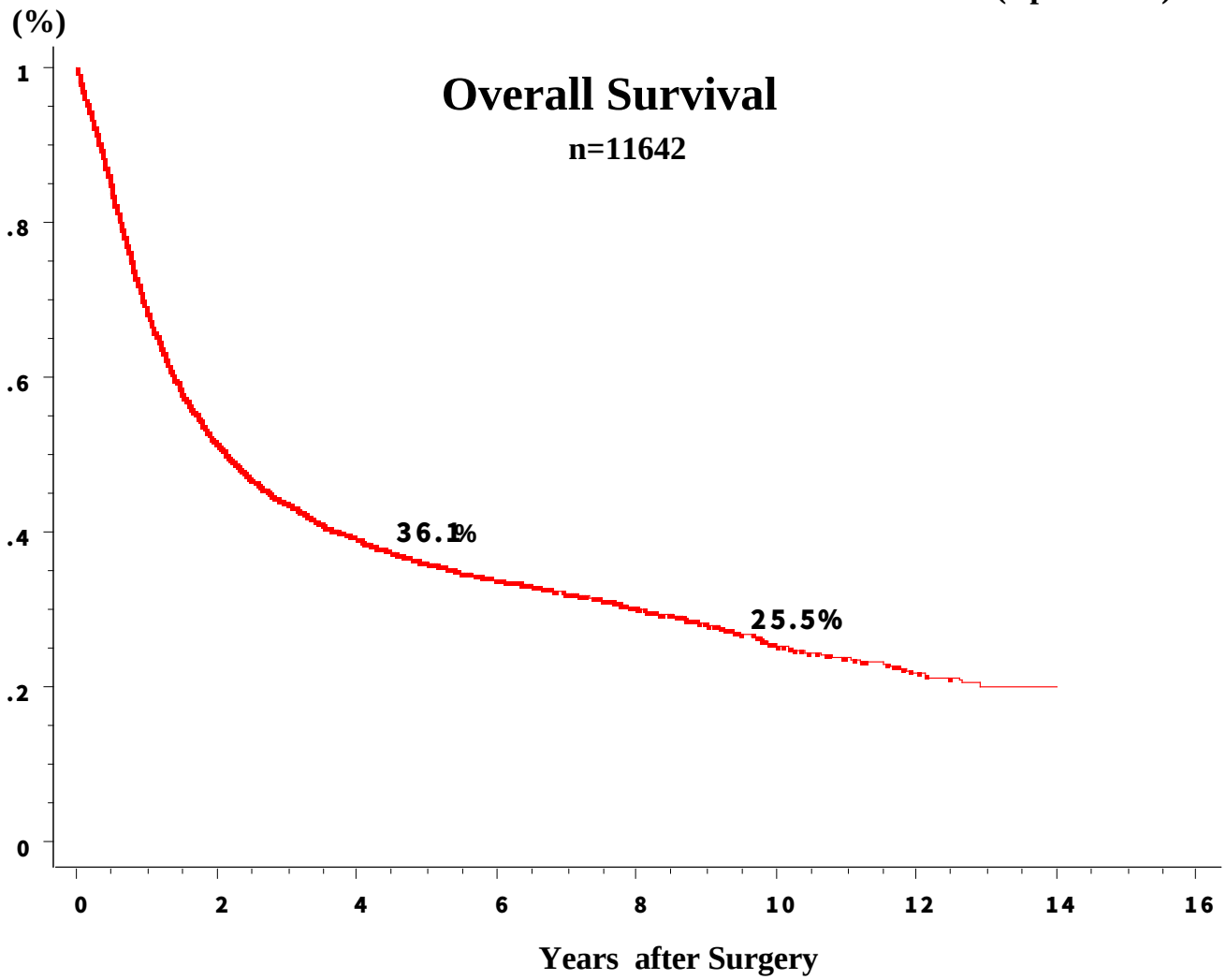


Figure 2) Survival of patients treated by esophagectomy in relation to depth of tumor invasion (pT)

(April. 2002)

(Cases registered between 1988 and 1997)

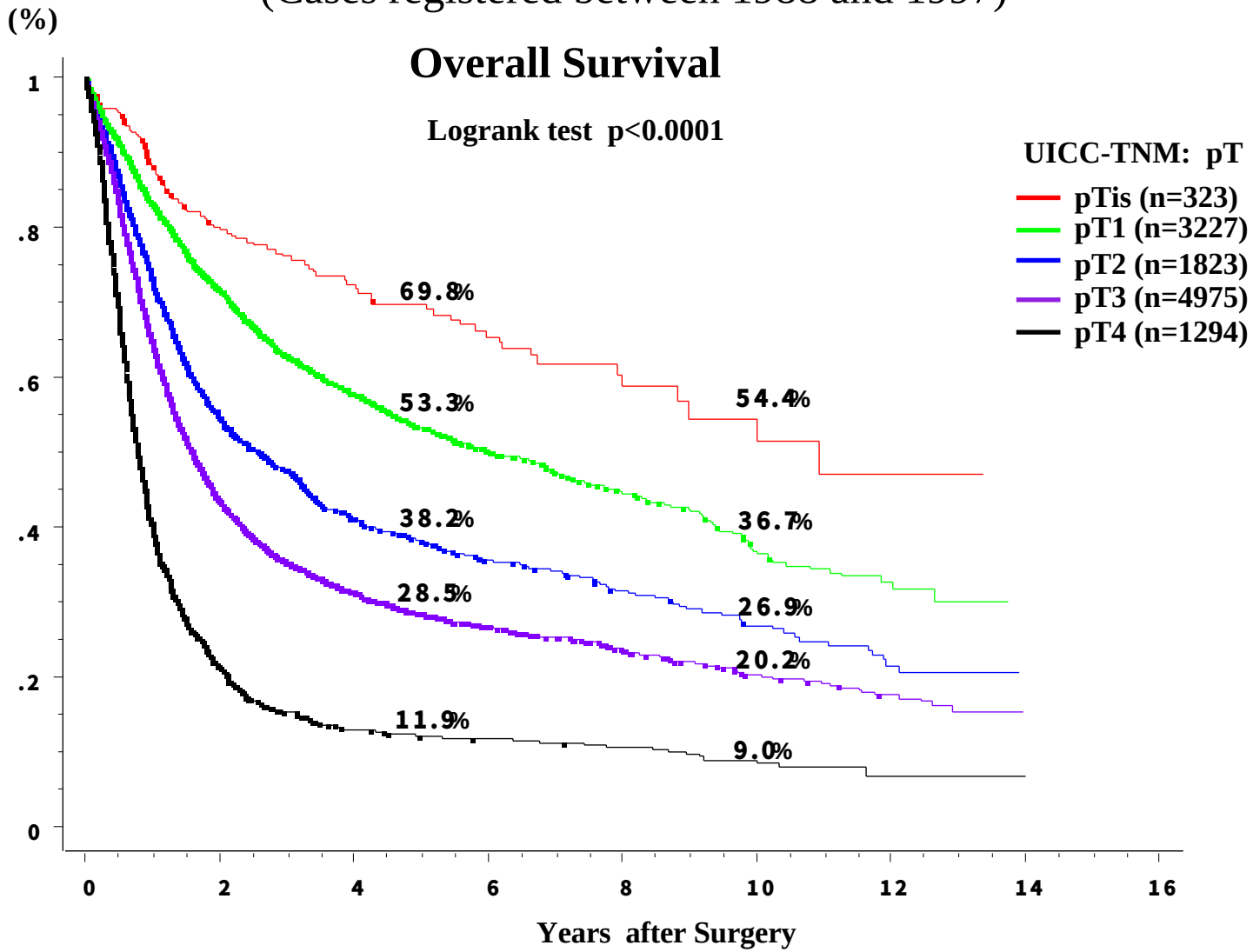


Figure 3) Survival of patients treated by esophagectomy in relation to lymph node metastasis (pN) **(April. 2002)**

(Cases registered between 1988 and 1997)

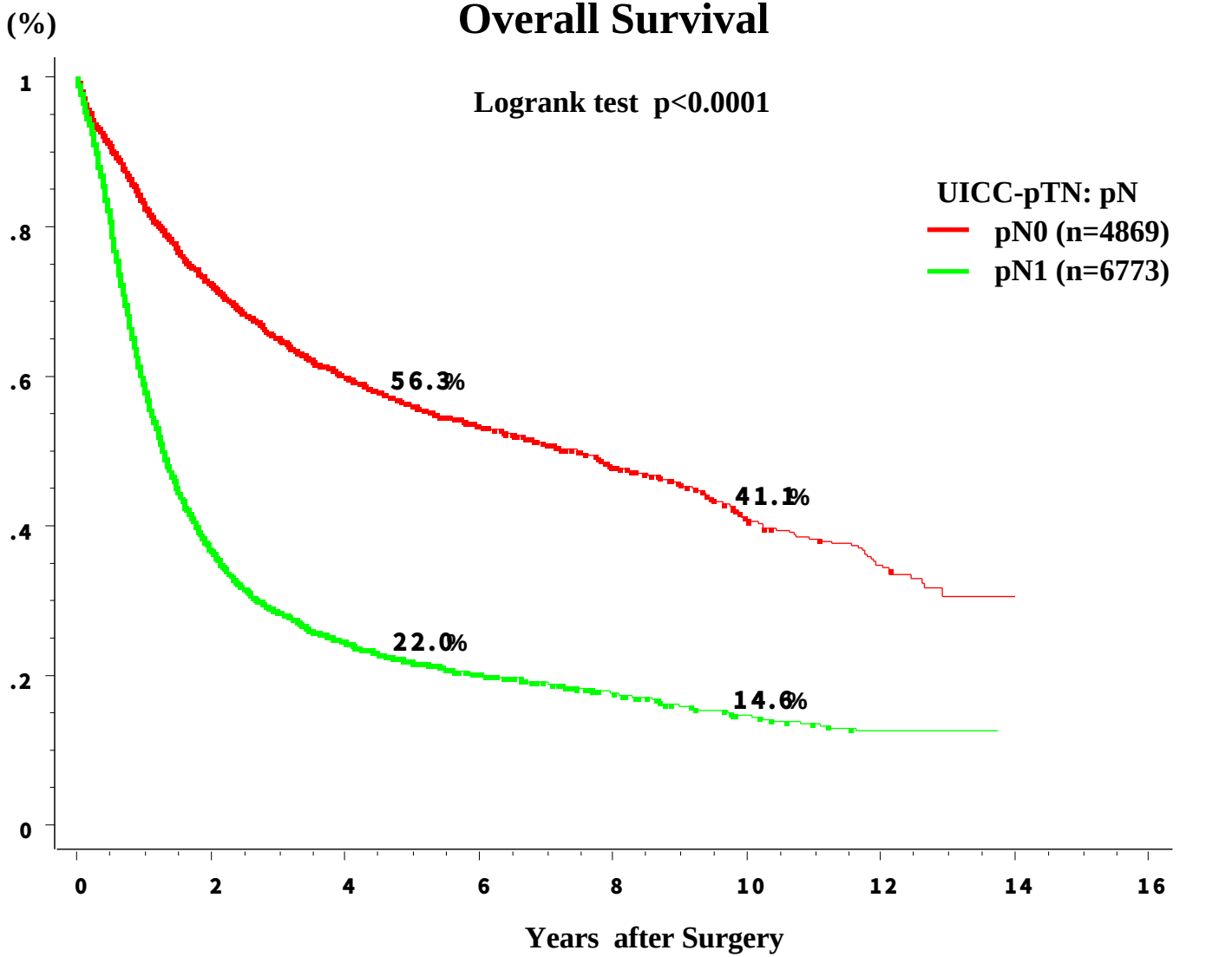


Figure 4) Survival of patients treated by esophagectomy in relation to distant metastasis (pM)

(Cases registered between 1988 and 1997)

(April. 2002)

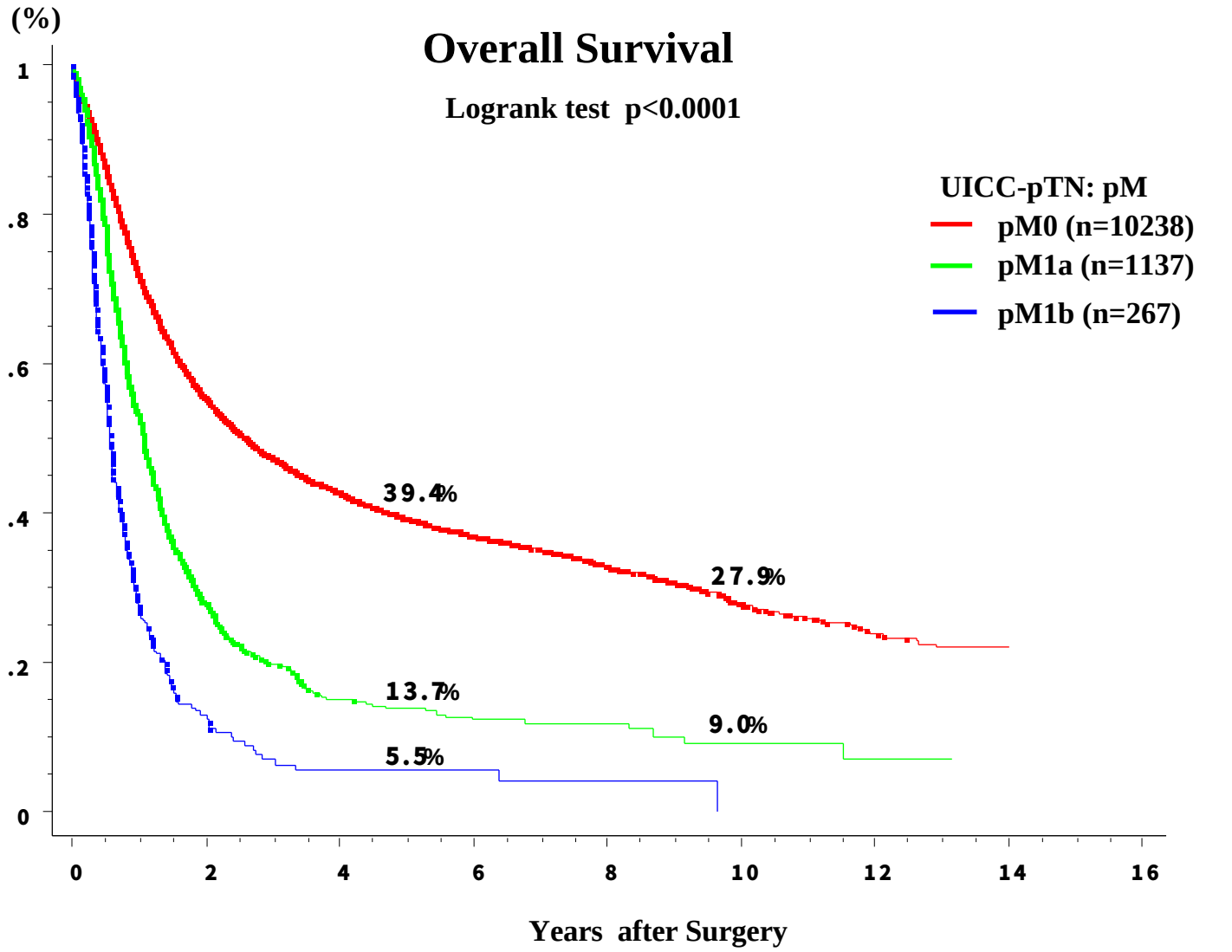


Figure 5) Survival of patients treated by esophagectomy in relation to pathological stage **(April. 2002)**

(Cases registered between 1988 and 1997)

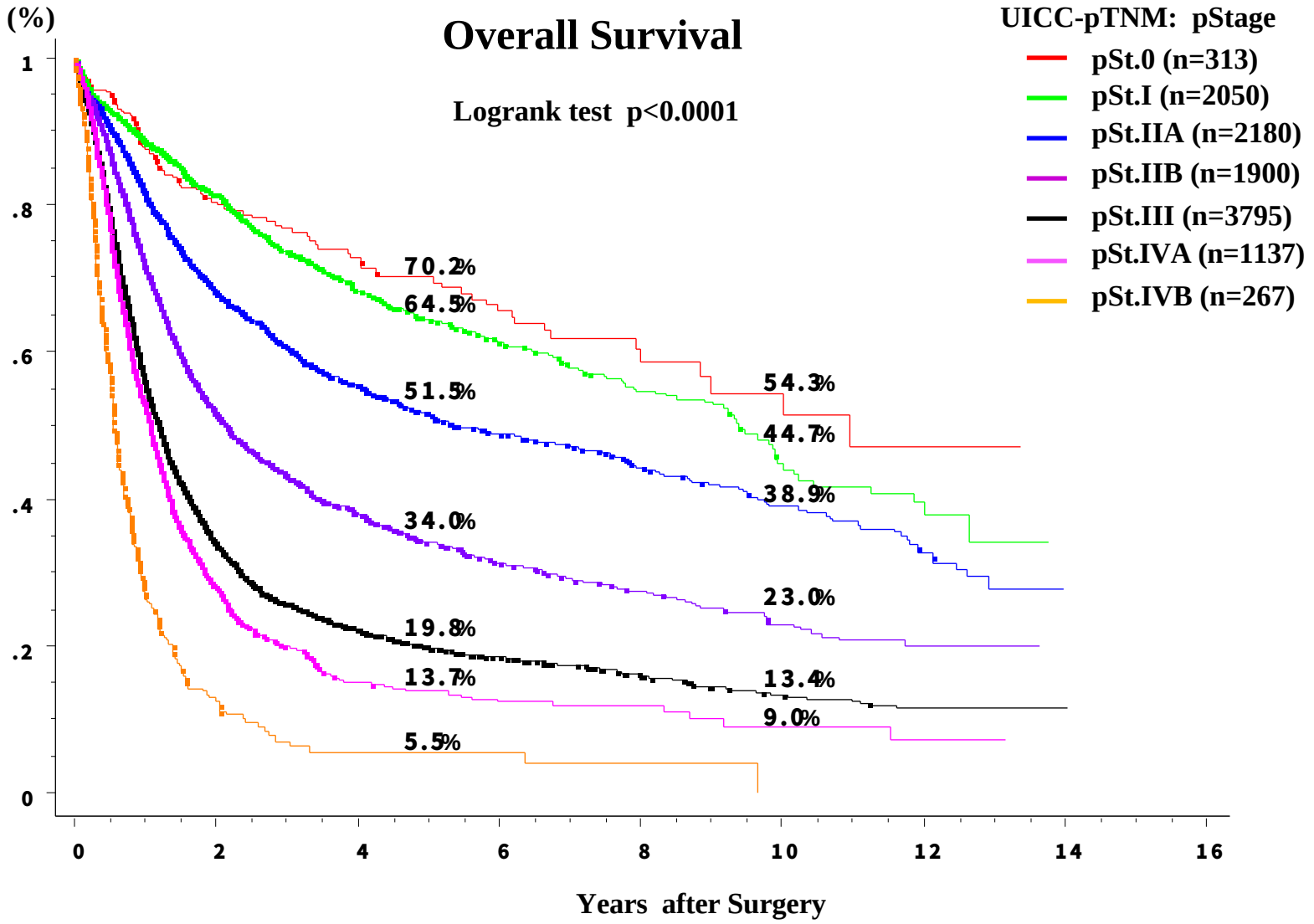


Figure 6) Survival of patients treated by esophagectomy in relation to number of metastatic node **(April. 2002)**

(Cases registered between 1993 and 1997)

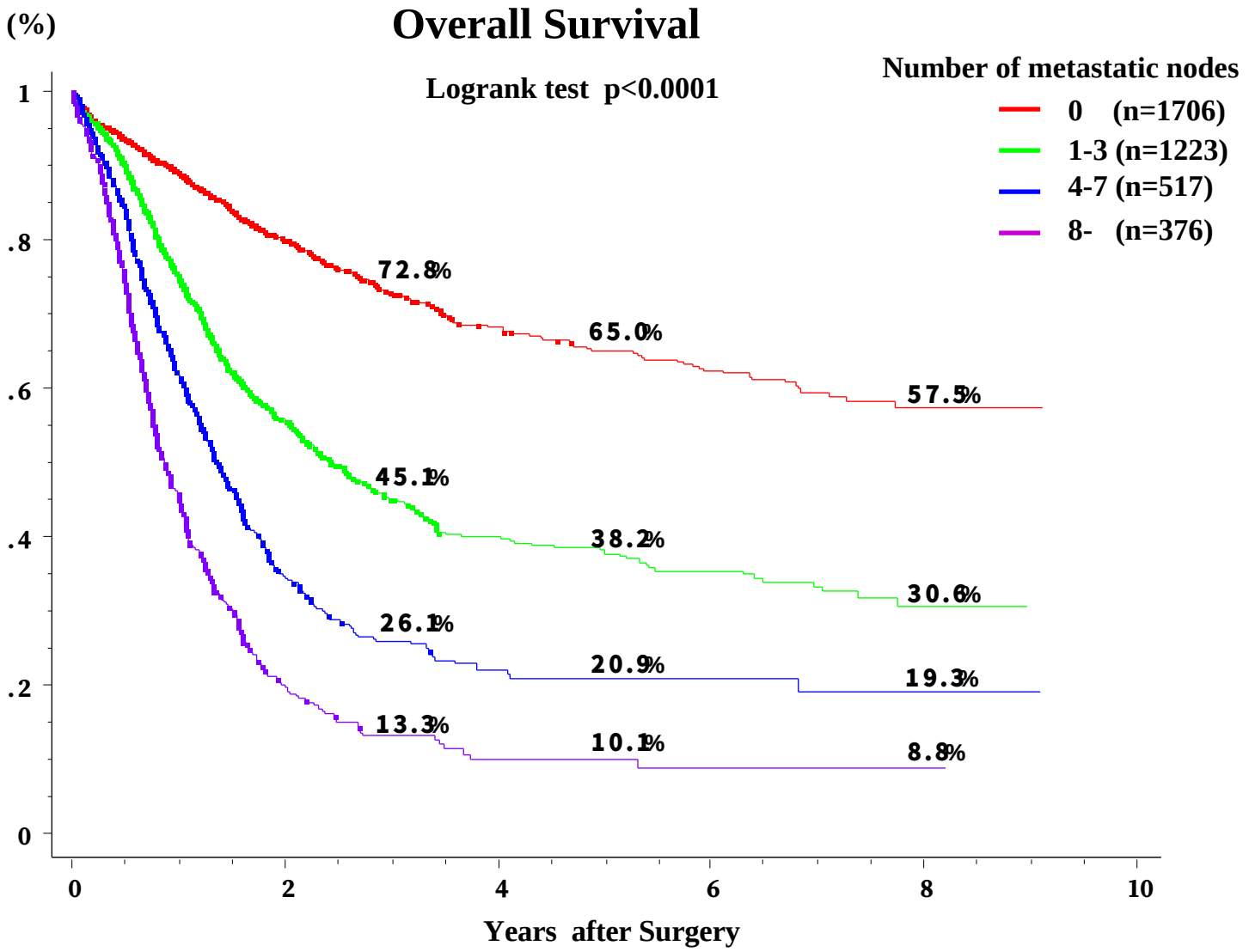


Figure 6-2) Survival of patients treated by esophagectomy in relation to number of metastatic node (April. 2002)

(R0-R1 Cases registered between 1993 and 1997)

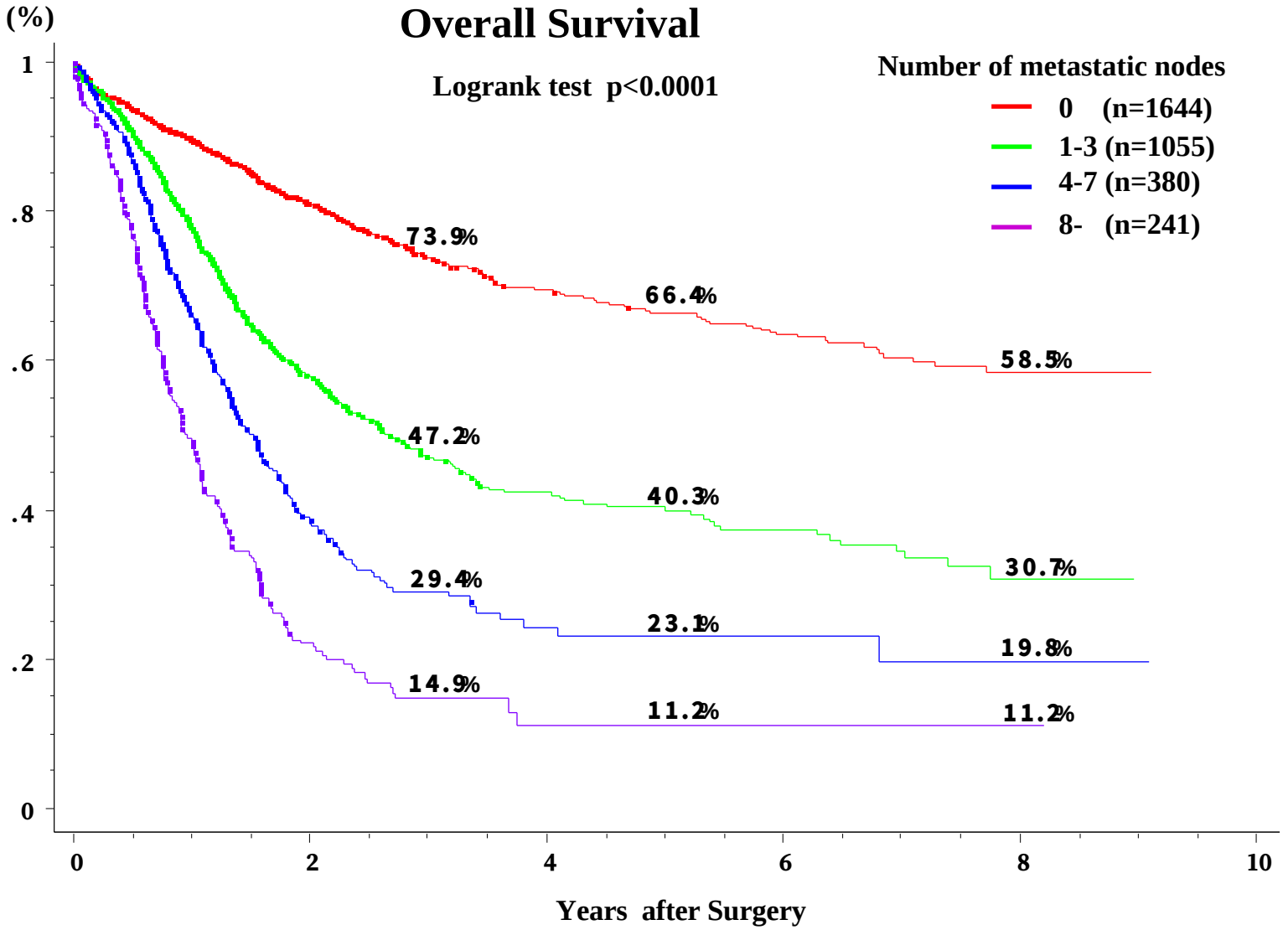


Figure 7) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

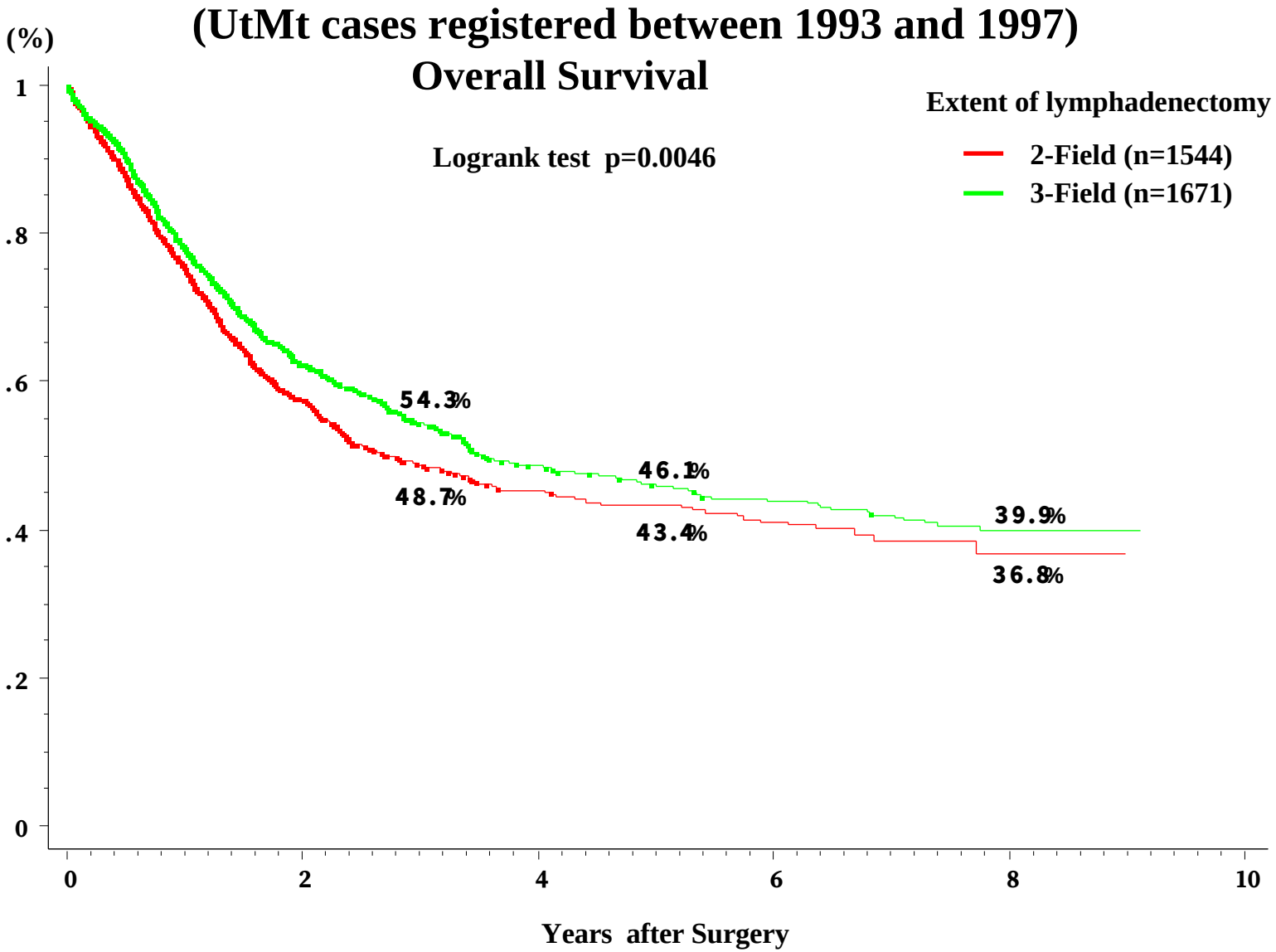


Figure 7-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

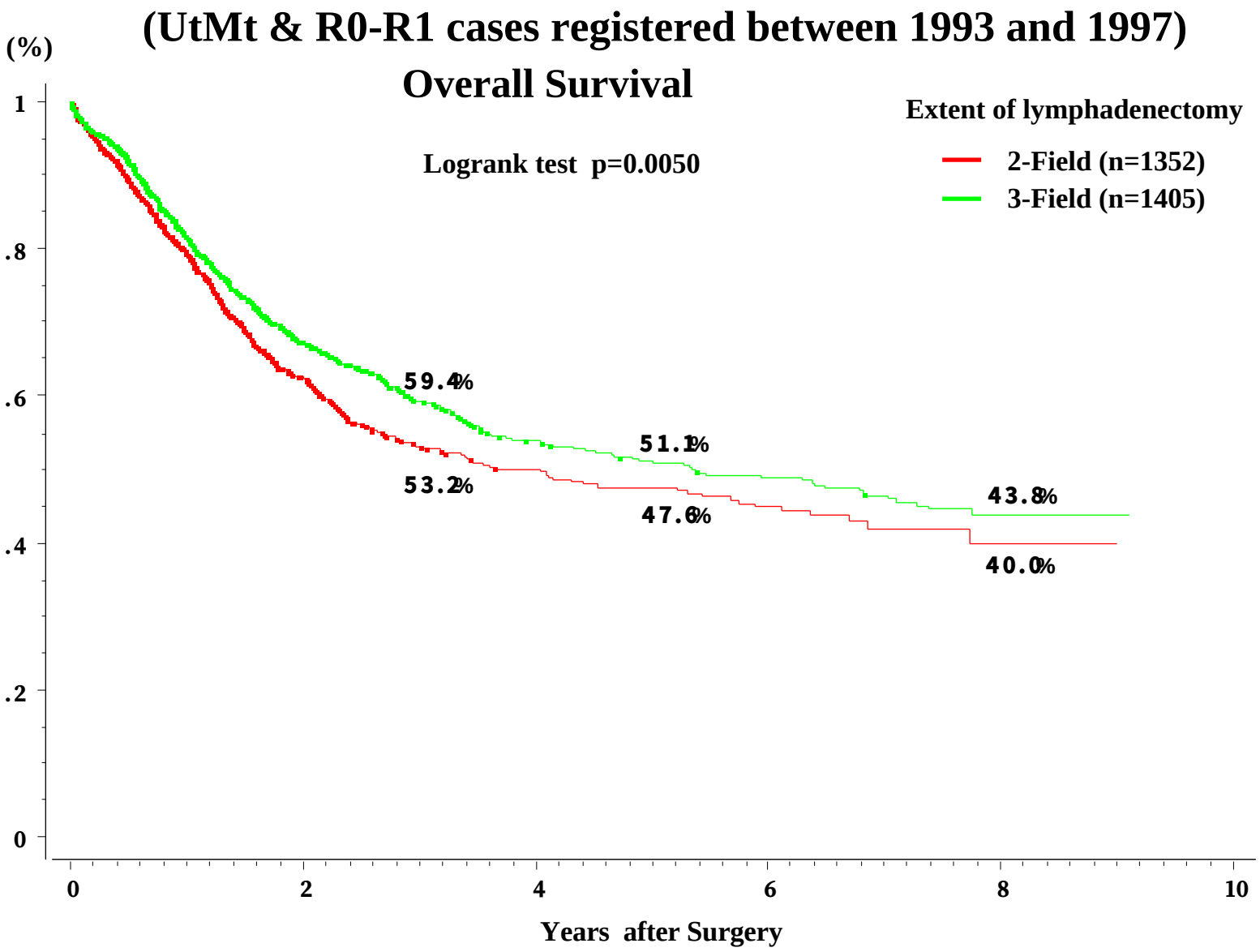


Figure 8) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

(Lt cases registered between 1993 and 1997)

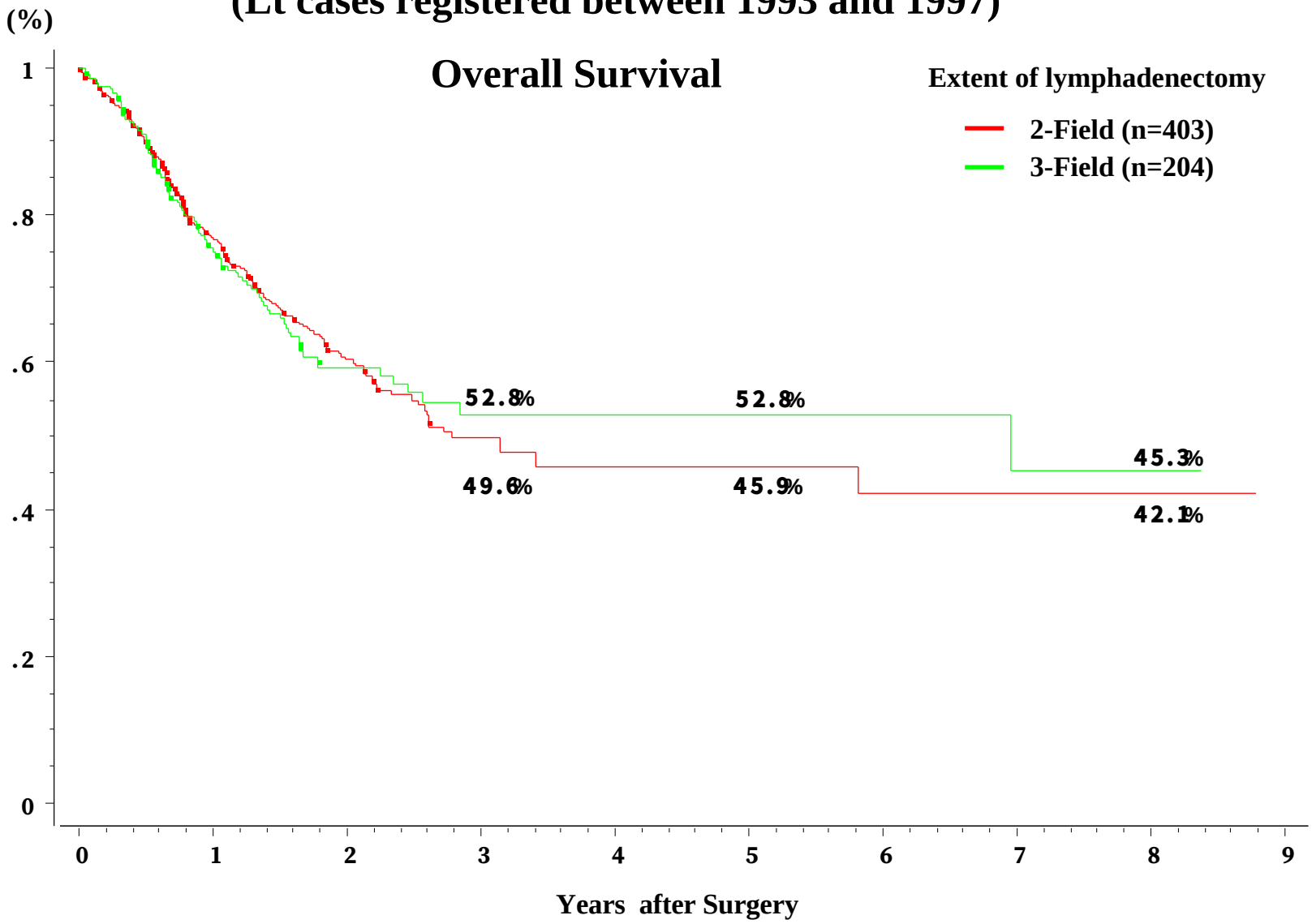


Figure 8-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

(Lt & R0-R1caces registered between 1993 and 1997)

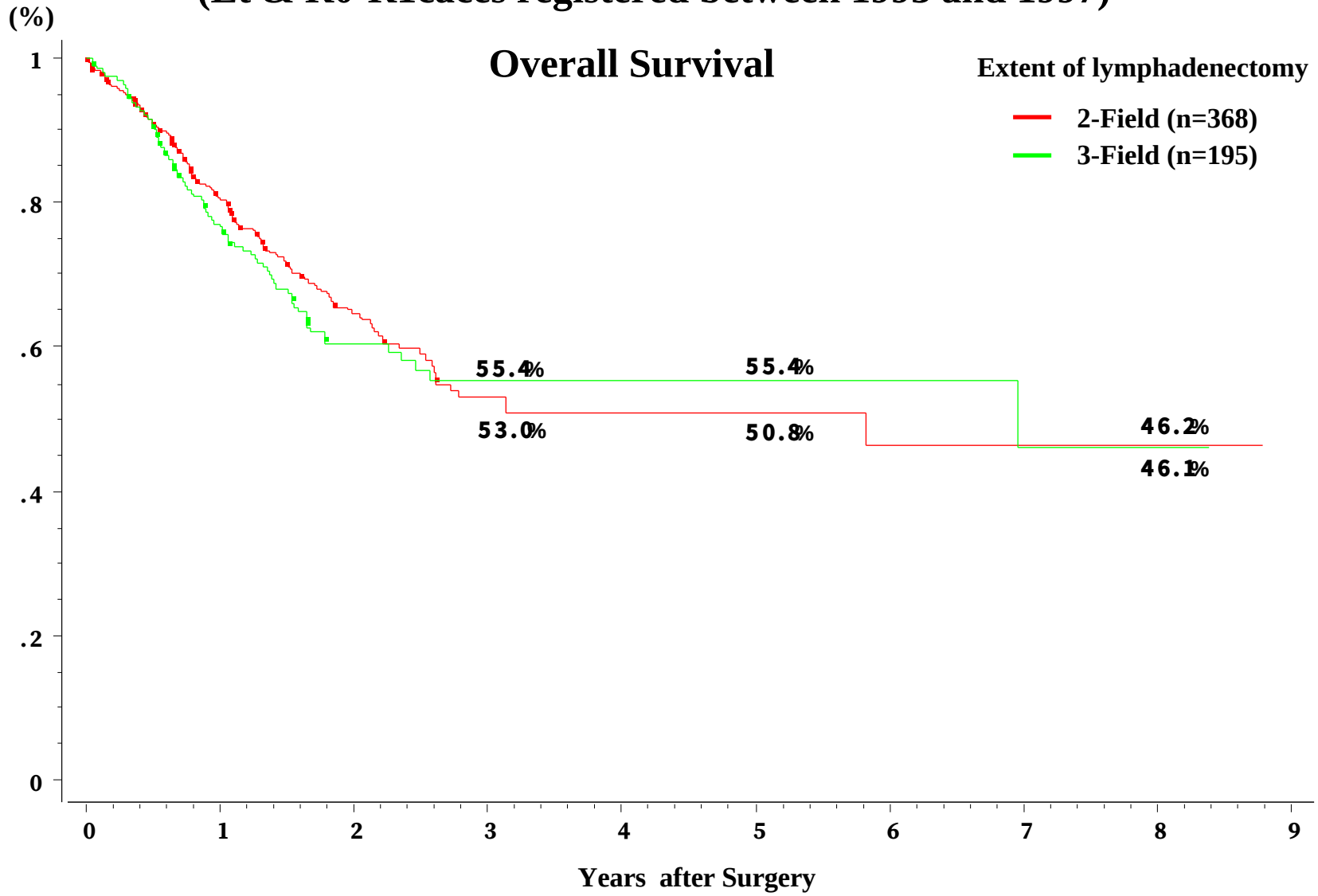


Figure 9) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

(pTis cases registered between 1993 and 1997)

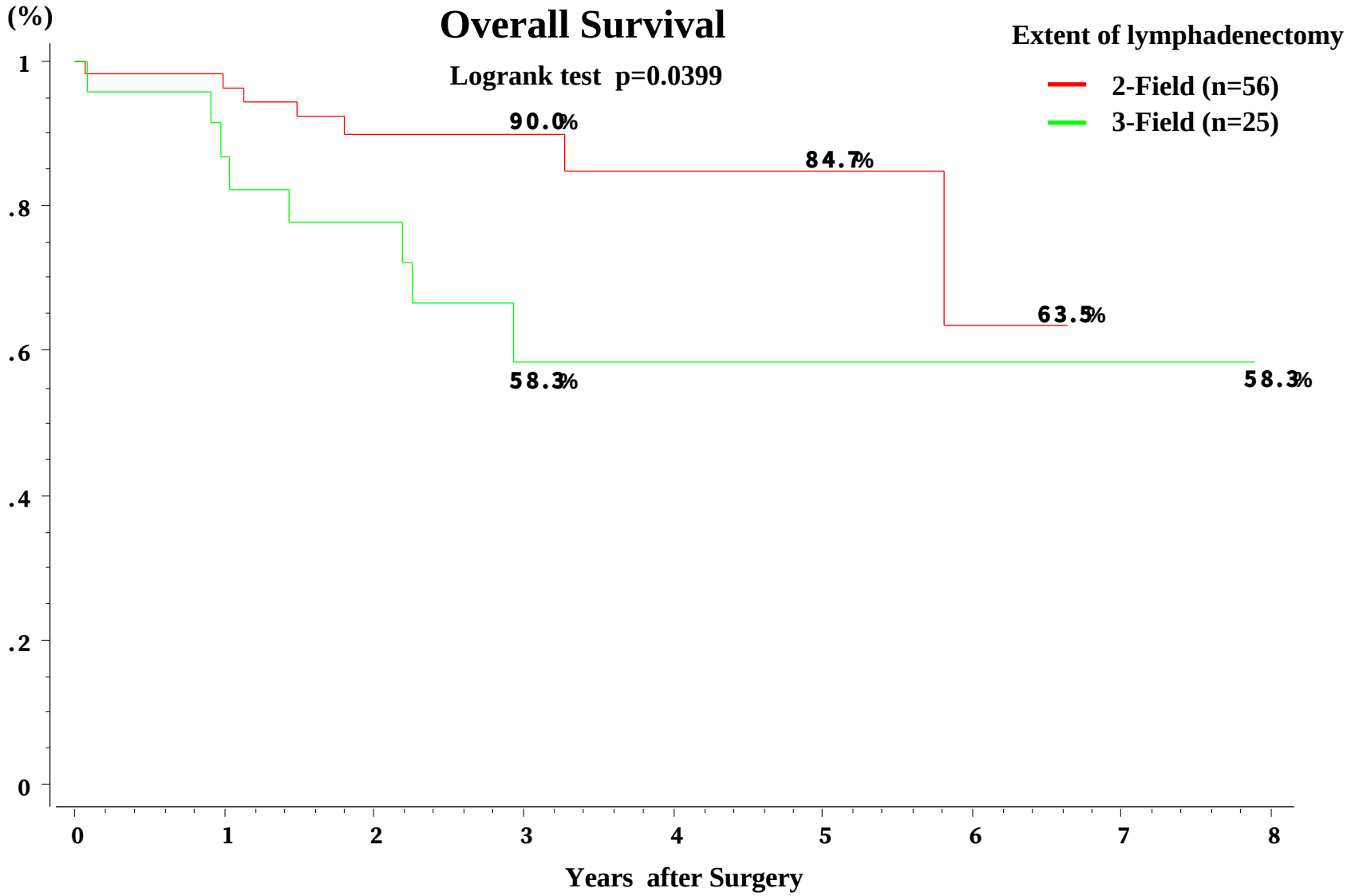


Figure 9-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy

(April. 2002)

(pTis & R0-R1caces registered between 1993 and 1997)

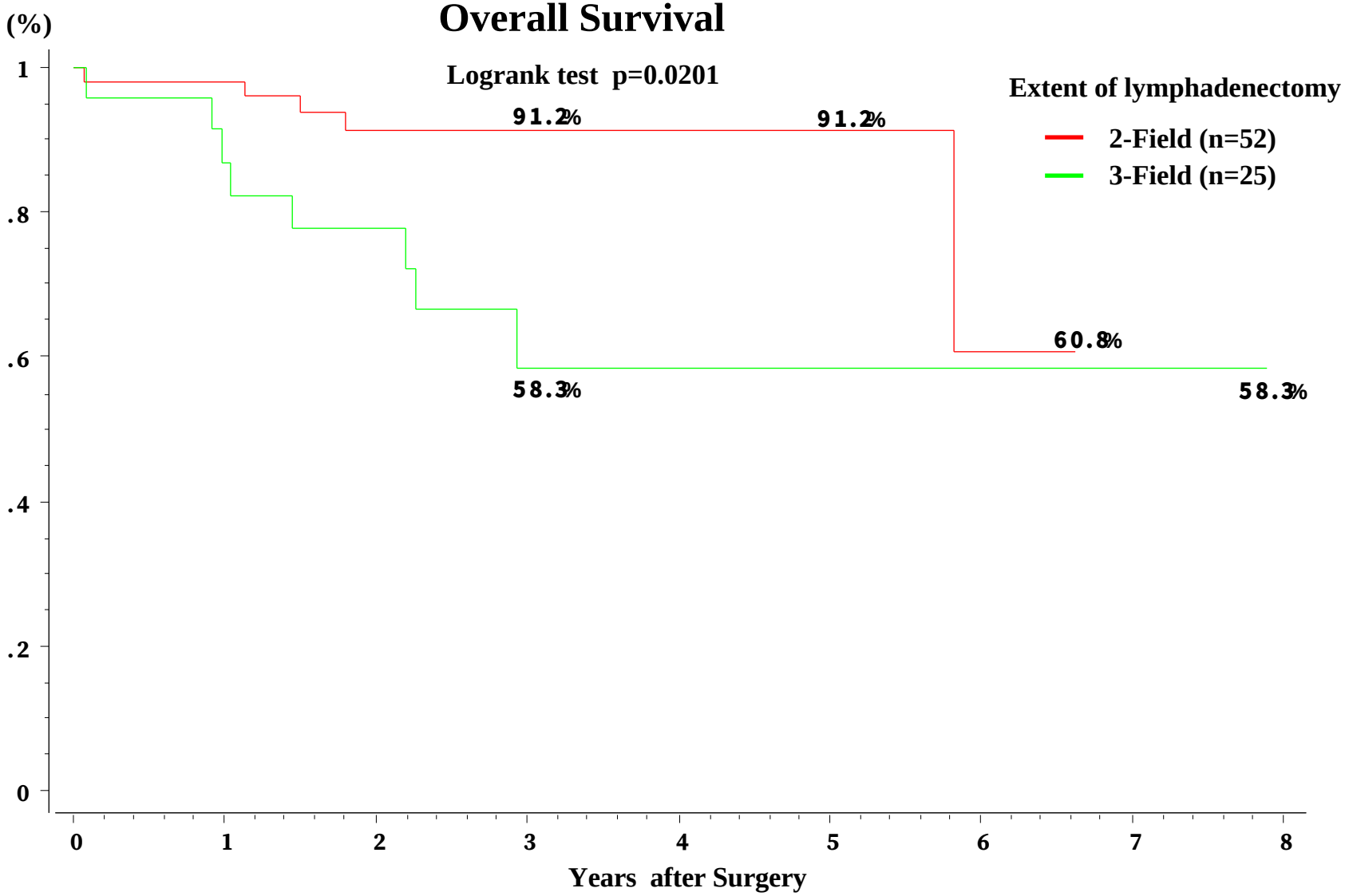


Figure 10) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

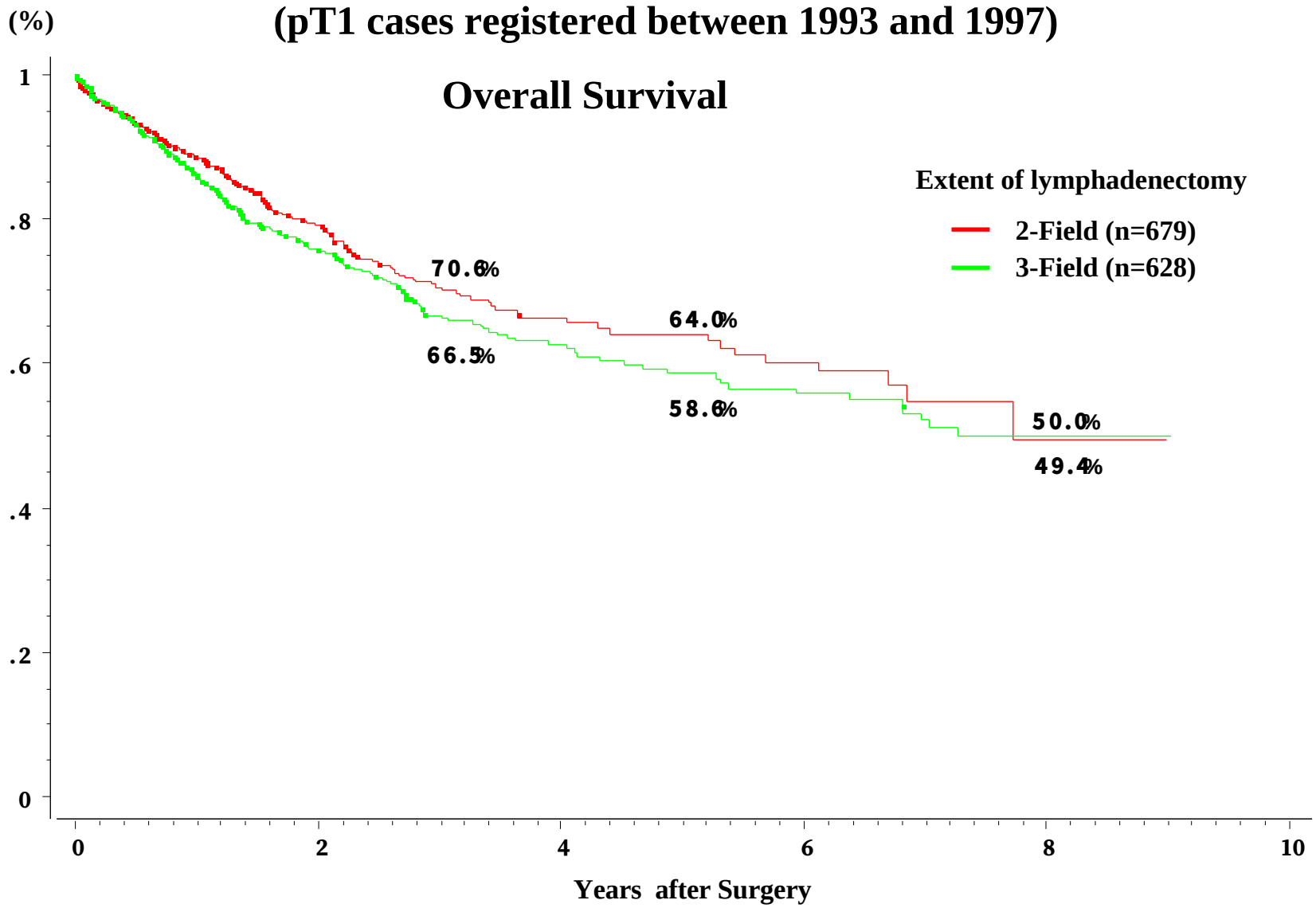


Figure 10-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

(pT1 & R0-R1 cases registered between 1993 and 1997)

Overall Survival

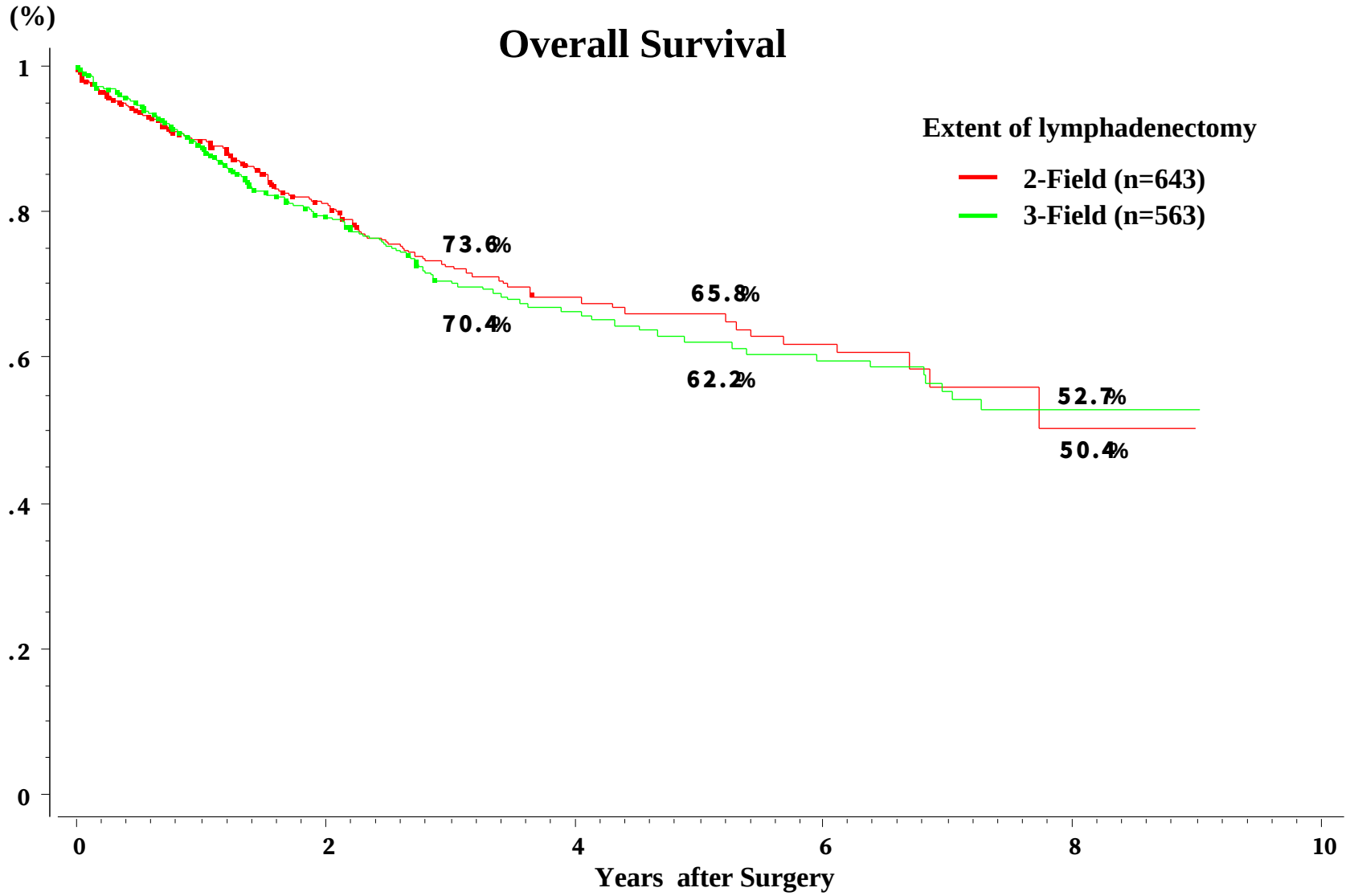


Figure 11) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy

(April. 2002)

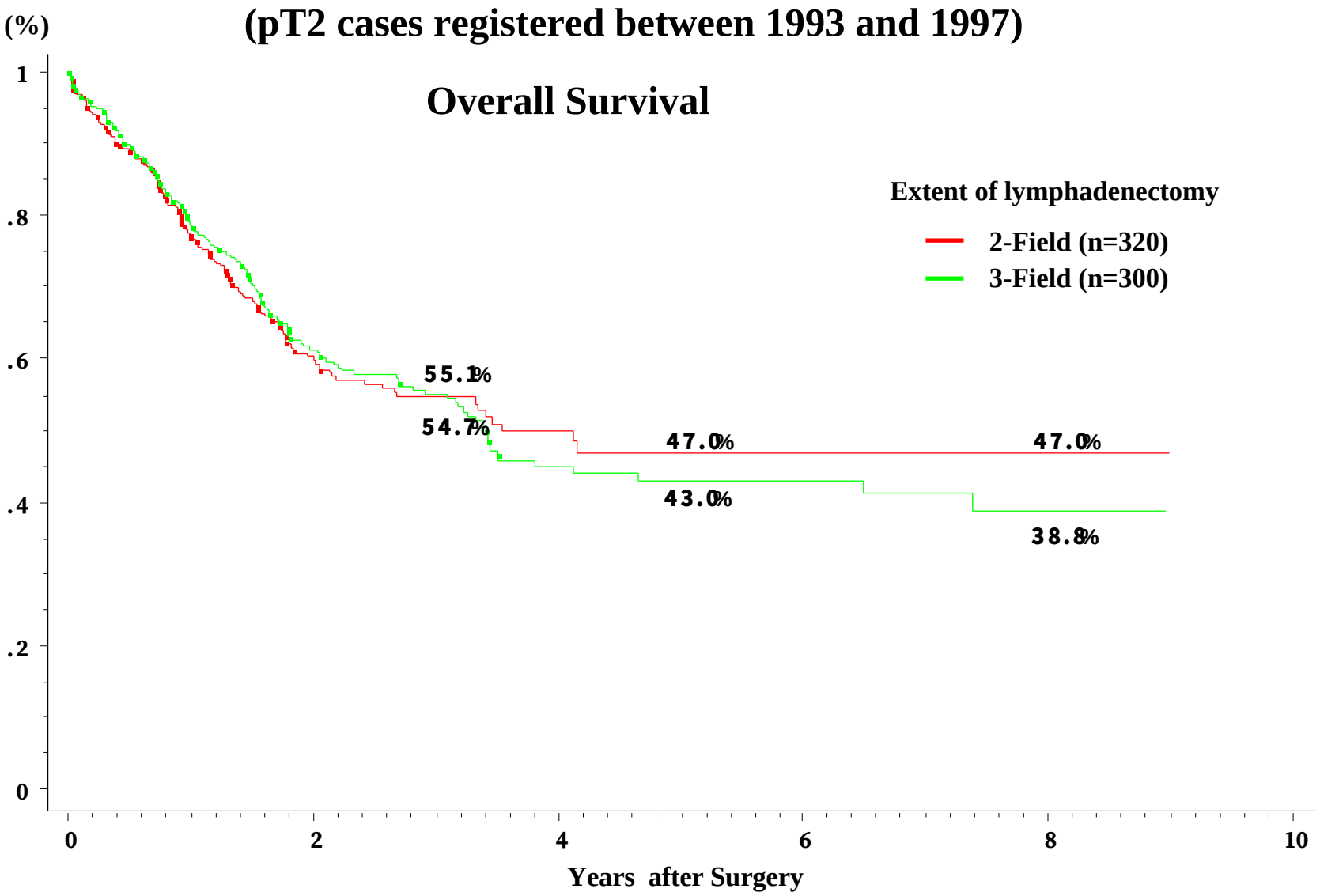


Figure 11-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy

(April. 2002)

(pT2 & R0-R1 cases registered between 1993 and 1997)

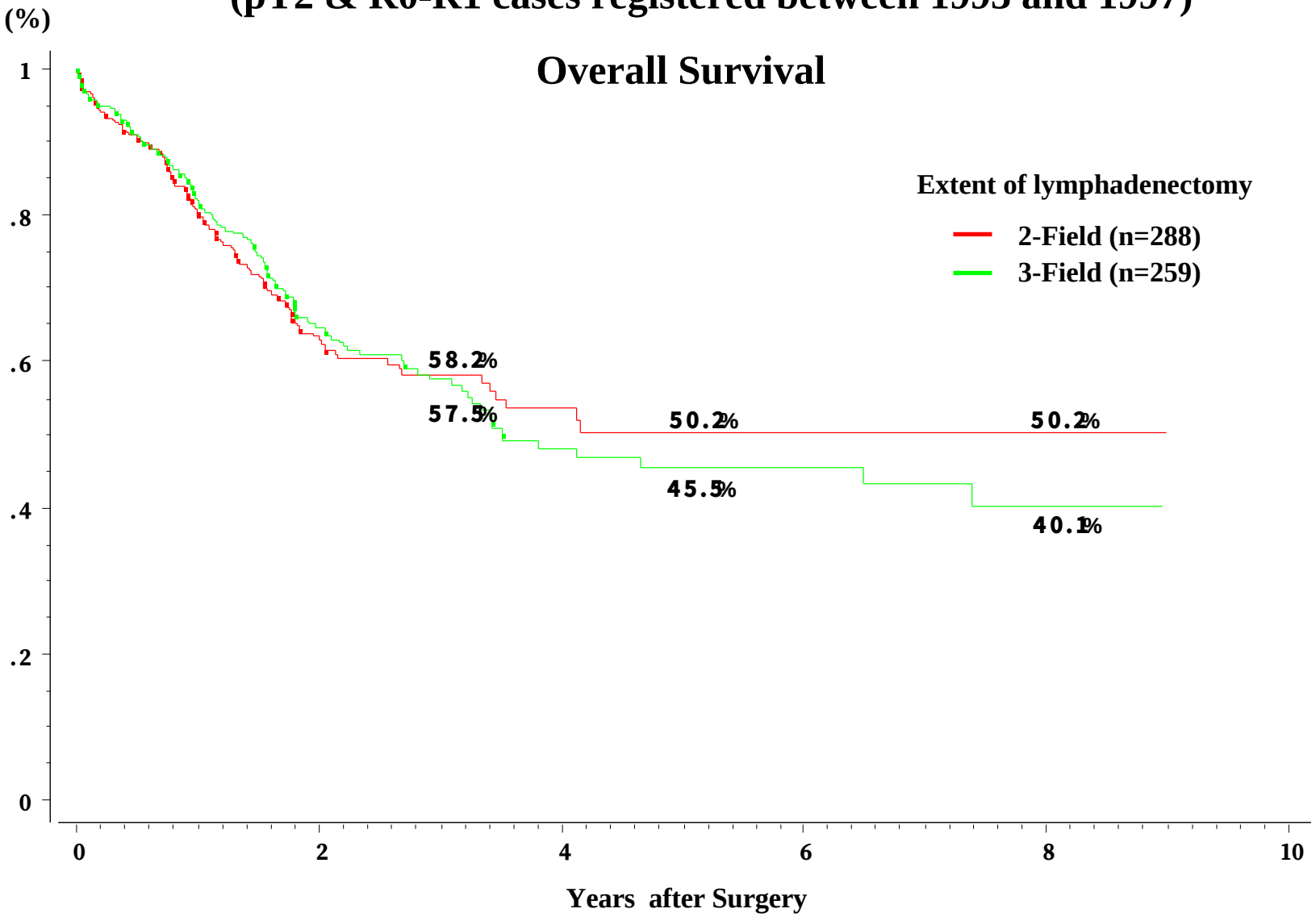


Figure 12) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy

(April. 2002)

(pT3 cases registered between 1993 and 1997)

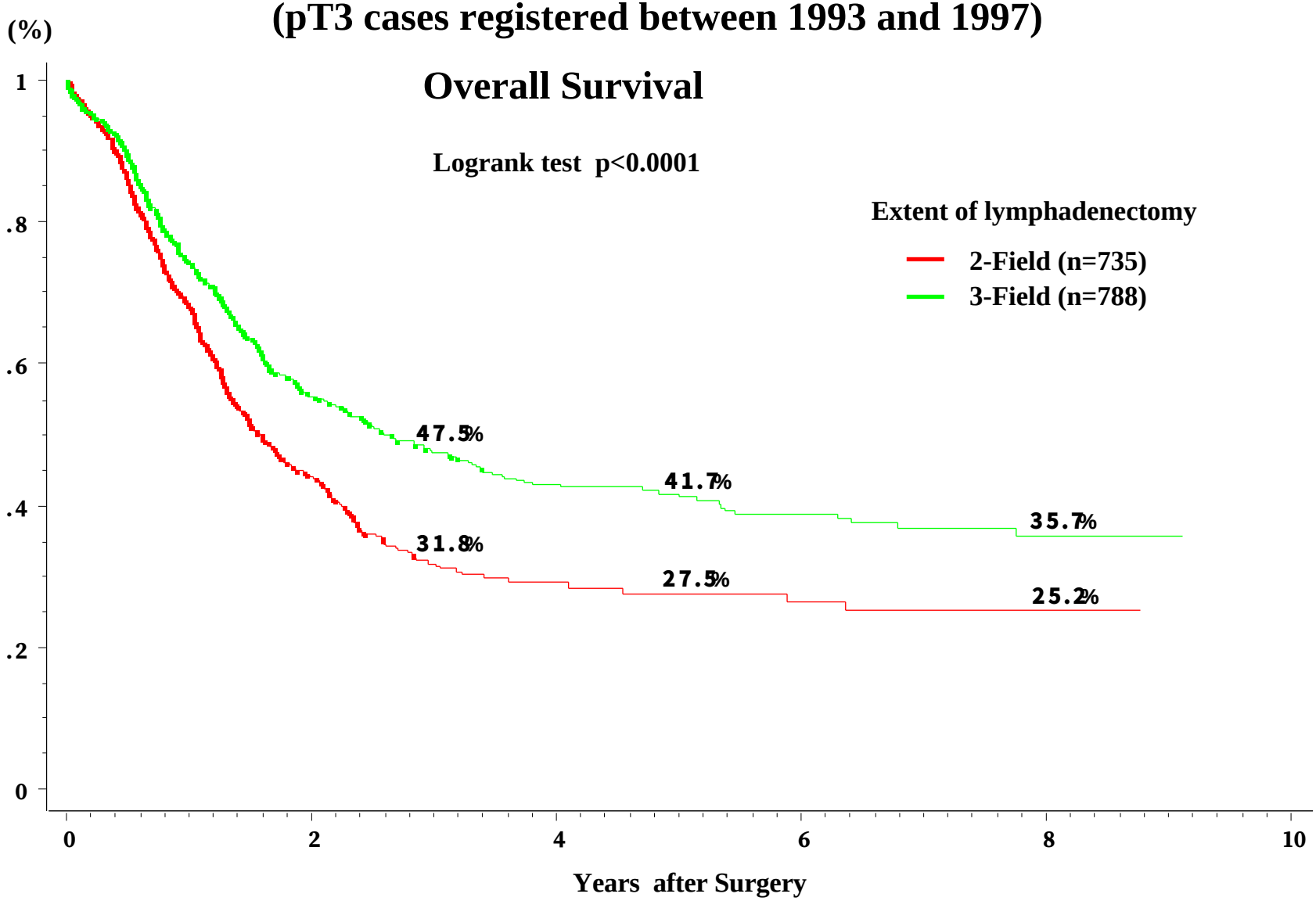


Figure 12-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

(pT3 & R0-R1 cases registered between 1993 and 1997)

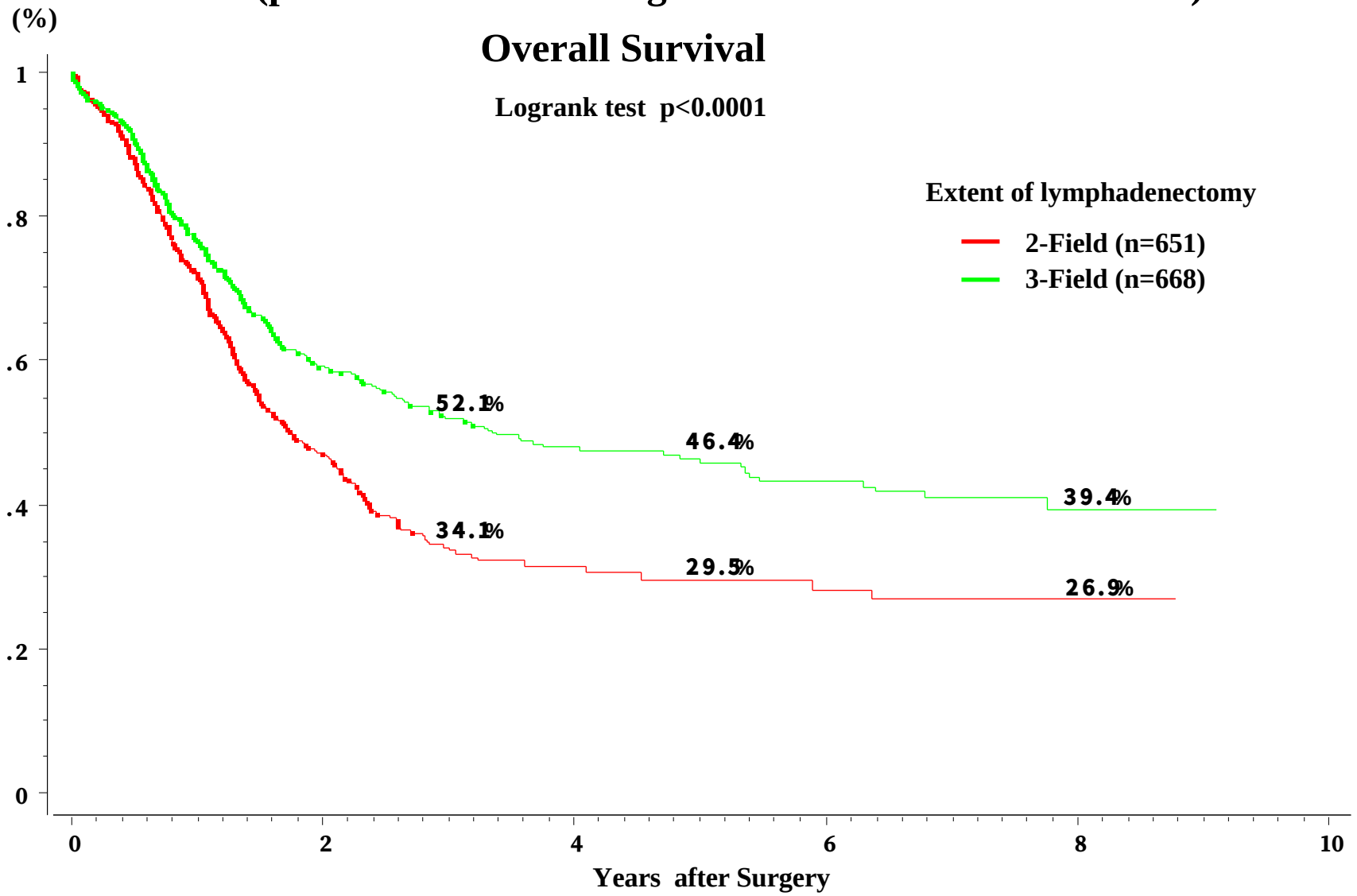


Figure 13) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy

(April. 2002)

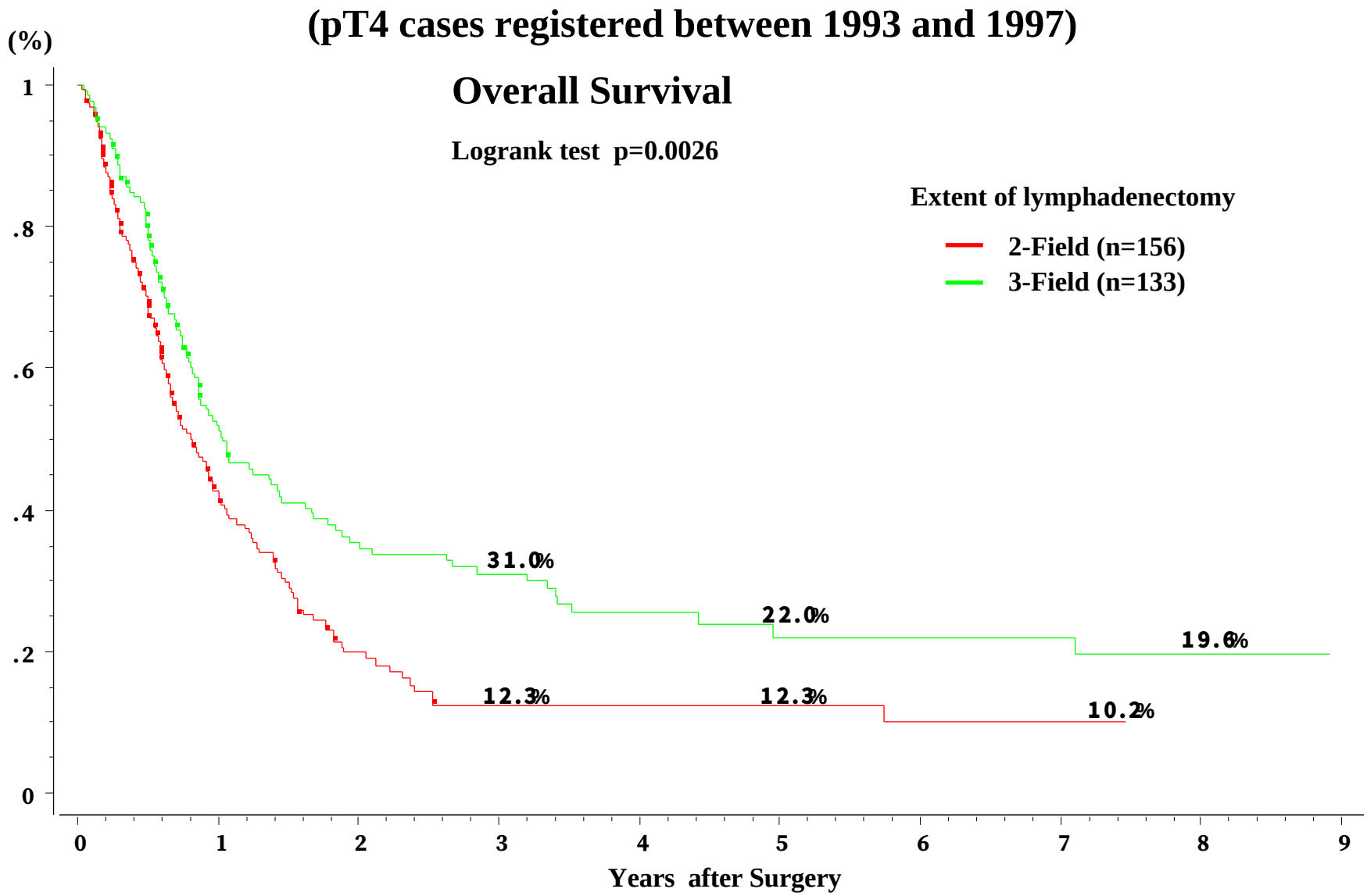


Figure 13-2) Survival of patients treated by esophagectomy in relation to the extent of lymphadenectomy (April. 2002)

(pT4 & R0-R1 cases registered between 1993 and 1997)