

continued

Institution
Keiyukai Sapporo Hospital
Kikuna Memorial Hospital
Kin-ikyo Chuo Hospital
Kinki Central Hospital
Kinki University Hospital
Kinki University Nara Hospital
Kinki University Sakai Hospital
Kiryu Kosei General Hospital
Kitakyushu Municipal Medical Center
Kitano Hospital
Kitasato University Hospital
Kitasato University Kitasato Institute Medical Center Hospital
Kobe City Medical Center General Hospital
Kobe University Hospital
Kumamoto University Hospital
Kurashiki Central Hospital
Kurume University Hospital
Kuwana City Hospital
Kyorin University Hospital
Kyoto University Hospital
Kyushu University Hospital
Matsuda Hospital
Matsudo City Hospital
Matsushita Memorial Hospital
Matsuyama Red Cross Hospital
Mie University Hospital
Minoh City Hospital
Mito Red Cross Hospital
Murakami General Hospital
Nagano Red Cross Hospital
Nagaoka Chuo General Hospital
Nagayoshi General Hospital
Nagoya City University Hospital
Nagoya Daiichi Red Cross Hospital
Nagoya University Hospital
Nanpuh Hospital
Nara Medical University Hospital
National Cancer Center Hospital
National Cancer Center Hospital East
National Defense Medical College Hospital
National Hospital Organization Chiba Medical Center
National Hospital Organization Kure Medical Center
National Hospital Organization Kyushu Cancer Center
National Hospital Organization Matsumoto National Hospital
National Hospital Organization Nagano Medical Center
National Hospital Organization Nagasaki Medical Center
National Hospital Organization Osaka National Hospital
National Hospital Organization Tokyo Medical Center

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Institution
Nihon University Itabashi Hospital
Nihonkai General Hospital
Niigata City General Hospital
Niigata Prefectural Shibata Hospital
Niigata University Medical and Dental Hospital
Nikko Memorial Hospital
Nippon Medical School Hospital
Nippon Medical School Musashi Kosugi Hospital
Nippon Medical School Tama Nagayama Hospital
Nishi-Kobe Medical Center
NTT East Japan Kanto Hospital
NTT West Osaka Hospital
Numazu City Hospital
Ohta General Hospital Foundation Ohta Nishinouchi Hospital
Oita Red Cross Hospital
Okayama Saiseikai General Hospital
Okayama University Hospital
Onomichi Municipal Hospital
Osaka City University Hospital
Osaka Koseinenkin Hospital
Osaka Medical Center for Cancer and Cardiovascular Diseases
Osaka Medical College Hospital
Osaka Prefectural Hospital Organization Osaka General Medical Center
Osaka University Hospital
Otsu Red Cross Hospital
Red Cross Society Onoda Hospital
Saga University Hospital
Saiseikai Narashino Hospital
Saitama City Hospital
Saitama Medical Center Jichi Medical University
Saitama Medical University Hospital
Saitama Medical University International Medical Center
Saitama Red Cross Hospital
Saitama Social Insurance Hospital
Saku Central Hospital
Sano Kousei General Hospital
Seirojika National Hospital University Hospital
Sendai City Hospital
Sendai Medical Center
Shiga Medical Center for Adults
Shiga University of Medical Science Hospital
Shikoku Cancer Center
Shimane University Hospital
Shimizu Welfare Hospital
Shinshu University Hospital
Shizuoka City Shimizu Hospital
Shizuoka City Shizuoka Hospital

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Institution

Showa Inan General Hospital
 Showa University Fujigaoka Hospital
 Showa University Hospital
 Social Insurance Omuta Tenryo Hospital
 Social Insurance Tagawa Hospital
 Social Insurance Yokohama Central Hospital
 Sonoda Daiichi Hospital
 Southern Region Hospital
 Sugita Genpaku Memorial Obama Municipal Hospital
 Suita Municipal Hospital
 Syowa University Toyosu Hospital
 Tachikawa Hospital
 Takaoka Hospital
 Takasago Municipal Hospital
 Teikyo University School of Medicine Hospital, Mizonokuchi
 Toho University Omori Medical Center
 Tohoku Kosai Hospital
 Tokai University Hospital
 Tokushima Red Cross Hospital
 Tokushima University Hospital
 Tokyo Dental College Ichikawa General Hospital
 Tokyo Jikeikai Medical
 Tokyo Medical and Dental University Hospital
 Tokyo Medical University Kasumigaura Hospital
 Tokyo Metropolitan Cancer and Infectious Center Komagome Hospital
 Tokyo Women's Medical University Hospital

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Institution

Tokyo Women's Medical University Medical Center East
 Toranomon Hospital
 Tottori Prefectural Central Hospital
 Tottori University Hospital
 Toyama Prefectural Central Hospital
 Toyama University Hospital
 Tsuchiura Kyodo Hospital
 Tsukuba University Hospital
 Tsuruoka Municipal Shonai Hospital
 University of Fukui Hospital
 University of Miyazaki Hospital
 University of Occupational and Environmental Health
 University of the Ryukyu Hospital
 Wakayama Kenritsu University Hospital
 Yamagata Prefectural Central Hospital
 Yamagata Prefectural Shinjo Hospital
 Yamagata University Hospital
 Yamagata University Hospital
 Yamanashi Prefectural Central Hospital
 Yamanashi University Hospital
 Yao Municipal Hospital
 Yokohama City University Hospital
 Yokohama City University Medical Center
 Yokohama Rosai Hospital
 Yuri General Hospital

Patient Background

Table 1 Age and gender

* Excluding 39 missing cases of gender

Age	Male	Female	Unknown	Cases (%)
~29	3	1	0	4 (0.1%)
30~39	10	5	0	15 (0.3%)
40~49	138	26	2	166 (3.7%)
50~59	841	145	0	986 (21.8%)
60~69	1511	187	0	1698 (37.5%)
70~79	1227	193	0	1420 (31.4%)
80~89	151	46	0	197 (4.4%)
90~	31	9	0	40 (0.9%)
Total	3912	612	2	4526
Missing	78	16	0	94

Table 12 Tumor location

* Excluding 185 treatment unknown, missing cases of treatment types

Location of tumor	Endoscopic treatment (%)	Chemotherapy and/or radiotherapy (%)	Surgery		Total (%)
			Palliative operation (%)	Esophagectomy (%)	
Cervical	14 (2.7%)	98 (7.5%)	3 (2.6%)	74 (3.0%)	189 (4.3%)
Upper thoracic	55 (10.7%)	200 (15.3%)	16 (13.9%)	268 (10.8%)	539 (12.2%)
Middle thoracic	289 (56.1%)	650 (49.8%)	59 (51.3%)	1146 (46.2%)	2144 (48.6%)
Lower thoracic	118 (22.9%)	266 (20.4%)	26 (22.6%)	792 (31.9%)	1202 (27.2%)
Abdominal	15 (2.9%)	31 (2.4%)	9 (7.8%)	152 (6.1%)	207 (4.7%)
EG	3 (0.6%)	3 (0.2%)	0	18 (0.7%)	24 (0.5%)
EG-Junction(E=G)	1 (0.2%)	0	1 (0.9%)	19 (0.8%)	21 (0.5%)
Cardia (G)	1 (0.2%)	0	0	3 (0.1%)	4 (0.1%)
Others	0	0	0	0	0
Unknown	19 (3.7%)	57 (4.4%)	1 (0.9%)	8 (0.3%)	85 (1.9%)
Total	515	1305	115	2480	4415
Missing	13	7	0	23	43

EG: esophago-gastric

Table 15 Histologic types of cancer according to biopsy specimens

*** Excluding 185 treatment unknown, missing cases of treatment types**

Histologic types	Endoscopic treatment (%)	Chemotherapy and/or radiotherapy (%)	Surgery		Total (%)
			Palliative operation (%)	Esophagectomy (%)	
Not examined	5 (1.0%)	8 (0.6%)	1 (0.9%)	5 (0.2%)	19 (0.4%)
SCC	480 (92.5%)	1218 (93.4%)	106 (92.2%)	2225 (91.5%)	4029 (92.2%)
SCC	379 (73.0%)	833 (63.9%)	72 (62.6%)	1355 (55.7%)	2639 (60.4%)
Well diff.	22 (4.2%)	72 (5.5%)	5 (5.0%)	203 (8.3%)	302 (6.9%)
Moderately diff.	66 (12.7%)	208 (16.0%)	21 (18.3%)	494 (20.3%)	789 (18.1%)
Poorly diff.	13 (2.5%)	105 (8.1%)	8 (7.0%)	173 (7.1%)	299 (6.8%)
Adenocarcinoma	16 (3.1%)	7 (0.5%)	3 (2.6%)	103 (4.2%)	129 (3.0%)
Undifferentiated	1 (0.2%)	14 (1.1%)	1 (0.9%)	10 (0.4%)	26 (0.6%)
Carcinosarcoma	0	2 (0.2%)	0	8 (0.3%)	10 (0.2%)
Malignant melanoma	2 (0.4%)	0	0	8 (0.3%)	10 (0.2%)
Other tumors	2 (0.4%)	16 (1.2%)	1 (0.9%)	21 (0.9%)	40 (0.9%)
Dysplasia	0	0	0	0	0
Unknown	13 (2.5%)	39 (3.0%)	3 (2.6%)	53 (2.2%)	108 (2.5%)
Total	519	1304	115	2433	4371
Missing	12	13	1	77	103

SCC: squamous cell carcinoma

Table 19 Organs with metastasis in cM1 case (JSED-cTNM 9th)

*** Excluding 185 treatment unknown, missing cases of treatment types**

Metastatic organs	Endoscopic treatment (%)	Chemotherapy and/or radiotherapy (%)	Surgery		Total (%)
			Palliative operation (%)	Esophagectomy (%)	
PUL	5 (19.2%)	83 (19.1%)	0	17 (8.6%)	105 (15.7%)
OSS	1 (3.8%)	29 (6.7%)	0	3 (1.5%)	33 (4.9%)
HEP	5 (19.2%)	83 (19.1%)	1 (9.1%)	18 (9.1%)	107 (16.0%)
BRA	0	9 (2.1%)	0	1 (0.5%)	10 (1.5%)
LYM	12 (46.2%)	182 (41.9%)	7 (63.6%)	148 (75.1%)	349 (52.2%)
MAR	0	1 (0.2%)	0	0	1 (0.1%)
PLE	0	2 (0.5%)	0	0	2 (0.3%)
PER	0	3 (0.7%)	0	1 (0.5%)	4 (0.6%)
SKI	1 (3.8%)	4 (0.9%)	0	1 (0.5%)	6 (0.9%)
OTH	1 (3.8%)	18 (4.1%)	0	4 (2.0%)	23 (3.4%)
Unknown	1 (3.8%)	20 (4.6%)	3 (27.3%)	4 (2.0%)	28 (4.2%)
Lesions	26	434	11	197	668
Missing	2	18	0	8	28
One organ	16 (76.2%)	296 (80.2%)	8 (72.7%)	178 (94.2%)	498 (84.4%)
Two organs	3 (14.3%)	46 (12.5%)	0	6 (3.2%)	55 (9.3%)
Three organs	1 (4.8%)	5 (1.4%)	0	1 (0.5%)	7 (1.2%)
Four organs~	0	3 (0.8%)	0	0	3 (0.5%)
Unknown	1 (4.8%)	19 (5.1%)	3 (27.3%)	4 (2.1%)	27 (4.6%)
Total cases	21	369	11	189	590
Missing	2	18	0	8	28

PUL: pulmones, OSS: ossis, HEP: hepar, BRA: brain, LYM: lymph node, MAR: marrow,

PLE: pleural membrane, PER:peritoneal membrane, SKI: skin, OTH: others

Table 20 Clinical stage (JSED-cTNM 9th)

* Excluding 185 treatment unknown, missing cases of treatment types

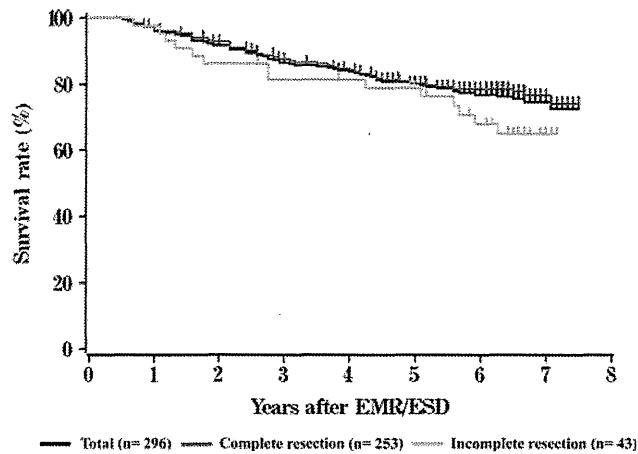
cStage	Endoscopic treatment (%)	Chemotherapy and/or radiotherapy (%)	Surgery		Total (%)
			Palliative operation(%)	Esophagectomy (%)	
0	77 (15.1%)	4 (0.3%)	1 (0.9%)	19 (0.8%)	101 (2.4%)
I	342 (66.9%)	175 (13.7%)	18 (15.5%)	521 (22.0%)	1056 (24.7%)
IIA	6 (1.2%)	122 (9.5%)	23 (19.8%)	455 (19.3%)	606 (14.2%)
IIB	10 (2.0%)	75 (5.9%)	6 (5.2%)	295 (12.5%)	386 (9.0%)
III	24 (4.7%)	463 (36.2%)	52 (44.8%)	816 (34.5%)	1355 (31.7%)
IV	3 (0.6%)	107 (8.4%)	1 (0.9%)	33 (1.4%)	144 (3.4%)
IVA	4 (0.8%)	65 (5.1%)	6 (5.2%)	75 (3.2%)	150 (3.5%)
IVB	11 (2.2%)	198 (15.5%)	5 (4.3%)	92 (3.9%)	306 (7.2%)
Unknown	34 (6.7%)	71 (5.5%)	4 (3.4%)	57 (2.4%)	166 (3.9%)
Total	511	1280	116	2363	4270
Missing	20	37	0	147	204

II. Clinical results of patient treated with endoscopy in 2003

Table 21 Treatment modalities in patients receiving endoscopy

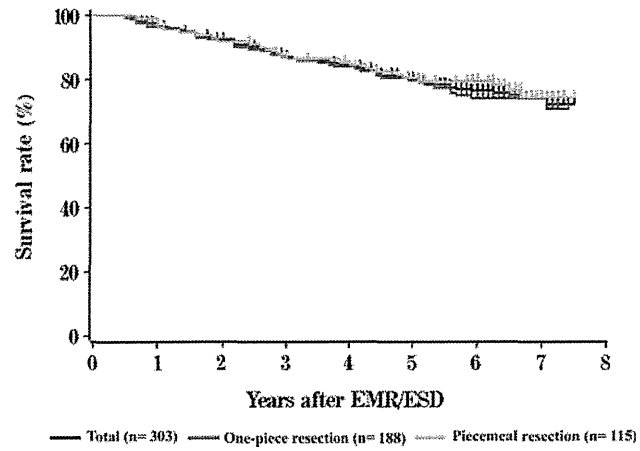
Treatment modalities	Cases (%)
Endoscopic treatment only	440 (82.9%)
Endoscopic treatment + Radiotherapy	23 (4.3%)
Endoscopic treatment + Chemotherapy	15 (2.8%)
Endoscopic treatment + Chemoradiotherapy	52 (9.8%)
Endoscopic treatment + Chemoradiotherapy + Others	0
Endoscopic treatment + Others	1 (0.2%)
Total	531
Missing	0

Fig. 1 Survival of patients treated by EMR/ESD



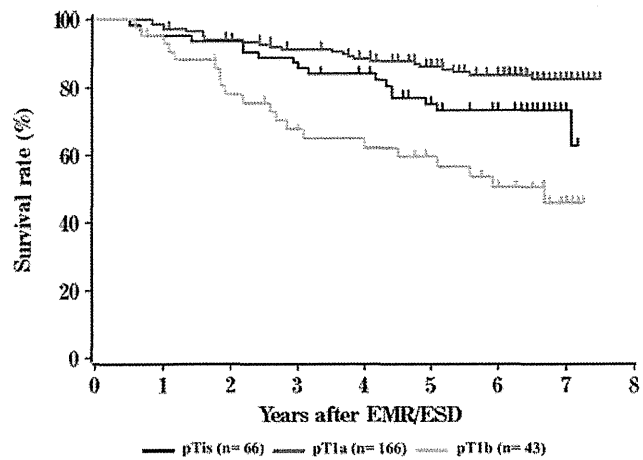
	Years after EMR/ESD							
	1	2	3	4	5	6	7	8
Total	97.1%	91.7%	86.5%	83.8%	80.0%	76.8%	74.6%	72.5%
Complete resection	97.1%	92.7%	87.4%	84.2%	80.2%	78.5%	76.6%	74.2%
Incomplete resection	97.7%	86.0%	81.3%	81.3%	78.8%	67.9%	64.8%	64.8%

Fig. 2 Survival of patients in relation to type of EMR/ESD



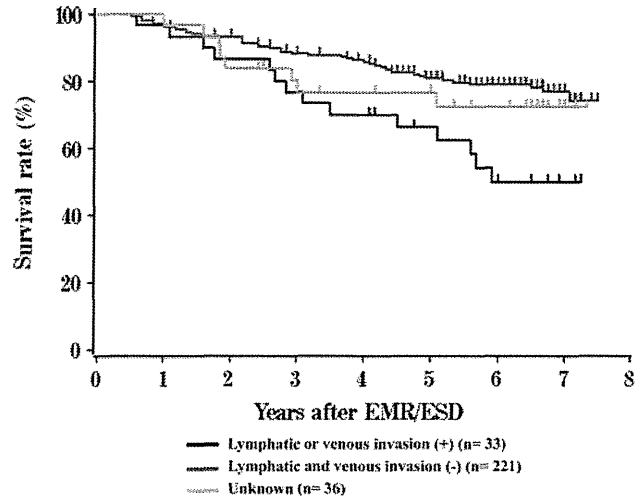
	Years after EMR/ESD							
	1	2	3	4	5	6	7	8
Total	97.2%	92.2%	87.1%	84.1%	80.1%	76.4%	72.2%	72.2%
One piece resection	96.6%	92.5%	87.1%	84.0%	79.9%	74.1%	74.1%	70.9%
Piecemeal resection	98.2%	91.9%	87.3%	84.4%	80.4%	79.4%	74.3%	74.3%

Fig. 3 Survival of patients treated by EMR/ESD in relation to the pathological depth of tumor invasion (pT)



	Years after EMR/ESD							
	1	2	3	4	5	6	7	8
pTis	95.2%	93.7%	87.2%	84.0%	75.1%	73.3%	73.3%	62.8%
pT1a	98.0%	94.0%	91.3%	88.4%	86.2%	83.6%	82.4%	82.4%
pT1b	95.2%	77.9%	67.6%	62.2%	59.5%	50.4%	45.8%	45.8%

Fig. 4 Survival of patients treated by EMR/ESD in relation to the lymphatic or venous invasion



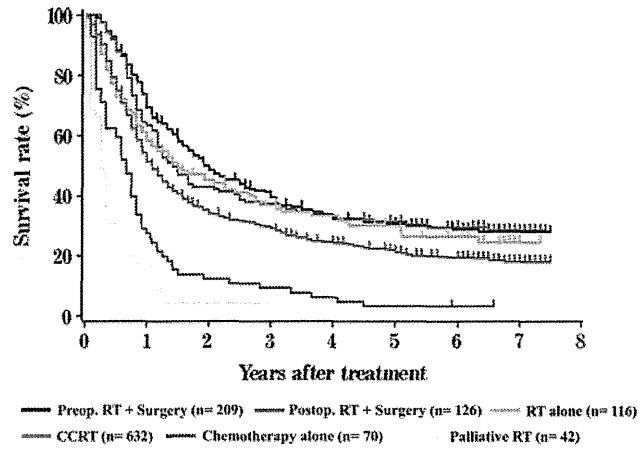
	Years after EMR/ESD							
	1	2	3	4	5	6	7	8
Lymphatic or venous invasion (+)	96.7%	86.7%	76.7%	70.0%	66.3%	49.9%	49.9%	49.9%
Lymphatic and venous invasion (-)	96.7%	93.3%	88.3%	85.8%	80.9%	79.0%	77.0%	74.2%
Unknown	100.0%	83.9%	80.2%	76.6%	76.6%	72.3%	72.3%	72.3%

III. Clinical results in patients treated with chemotherapy and/or radiotherapy in 2003

Table 34 Dose of irradiation with or without chemotherapy (non-surgically treated and curative cases)

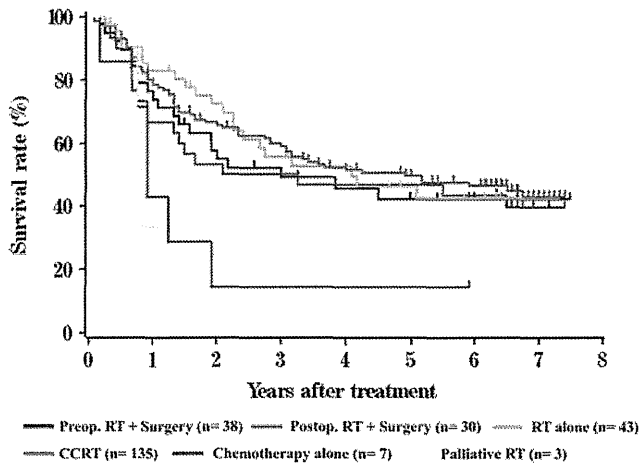
Dose of irradiation (Gy)	Chemotherapy		Preop RT (%)	Postop RT (%)
	with (%)	without (%)		
0	0	0	0	0
<29	5 (1.3%)	6 (7.9%)	10 (4.0%)	7 (4.5%)
30-39	9 (2.3%)	1 (1.3%)	80 (32.1%)	7 (4.5%)
40-49	22 (5.7%)	0	128 (51.4%)	56 (36.4%)
50-59	25 (6.5%)	7 (9.2%)	5 (2.0%)	37 (24.0%)
60-69	303 (78.3%)	52 (68.4%)	22 (8.8%)	44 (28.6%)
70-	23 (5.9%)	10 (13.2%)	4 (1.6%)	3 (1.9%)
Total	387	76	249	154
Median (min - max)	60 (18 - 146)	60 (2 - 120)	40 (2 - 81.4)	50 (2 - 81.4)
Missing	16	4	29	40

Fig. 5 Survival of patients treated by chemotherapy and/or radiotherapy



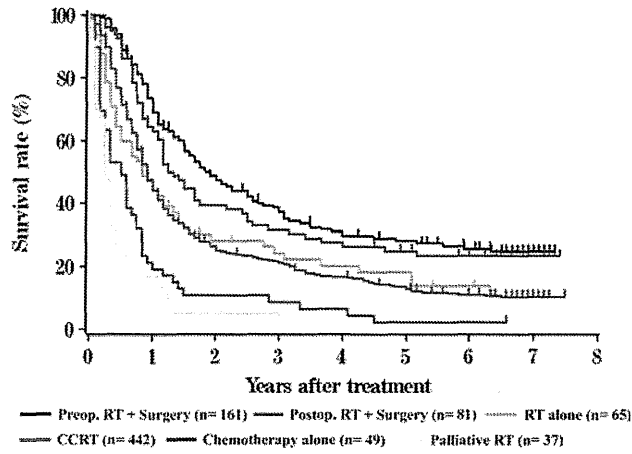
	Years after treatment							
	1	2	3	4	5	6	7	8
Preop. RT + Surgery	72.8%	49.9%	41.1%	32.4%	30.7%	28.7%	27.9%	27.9%
Postop. RT + Surgery	64.4%	42.9%	37.2%	33.0%	31.4%	29.6%	28.5%	28.5%
RT alone	60.2%	45.0%	36.7%	33.4%	30.0%	26.2%	24.4%	24.4%
CCRT	53.7%	35.2%	29.8%	24.4%	21.9%	19.4%	18.1%	18.1%
Chemotherapy alone	28.9%	12.2%	9.1%	6.1%	3.0%	3.0%	3.0%	-
Palliative RT	16.9%	4.2%	4.2%	-	-	-	-	-

Fig. 6 Survival of patients treated by chemotherapy and/or radiotherapy (cStage I-IIA)



	Years after treatment							
	1	2	3	4	5	6	7	8
Preop. RT + Surgery	73.7%	57.6%	52.1%	45.7%	42.2%	42.2%	42.2%	42.2%
Postop. RT + Surgery	66.7%	53.3%	50.0%	46.7%	46.7%	43.3%	39.7%	39.7%
RT alone	82.8%	72.2%	55.6%	52.5%	46.3%	42.5%	42.5%	42.5%
CCRT	79.3%	66.5%	59.9%	51.4%	49.5%	46.5%	42.8%	42.8%
Chemotherapy alone	42.9%	14.3%	14.3%	14.3%	14.3%	14.3%	-	-
Palliative RT	33.3%	-	-	-	-	-	-	-

Fig. 7 Survival of patients treated by chemotherapy and/or radiotherapy (cStage IIB-IVB)



	Years after treatment							
	1	2	3	4	5	6	7	8
Preop. RT + Surgery	72.8%	48.7%	38.5%	29.5%	28.0%	25.6%	24.7%	24.7%
Postop. RT + Surgery	64.4%	39.4%	31.5%	26.3%	24.9%	23.3%	23.3%	23.3%
RT alone	45.5%	28.1%	24.1%	20.1%	18.1%	13.8%	10.3%	-
CCRT	46.9%	26.4%	21.7%	16.6%	13.6%	11.0%	10.3%	10.3%
Chemotherapy alone	21.3%	10.6%	8.5%	6.4%	2.1%	2.1%	2.1%	-
Palliative RT	16.8%	5.0%	5.0%	0.0%	-	-	-	-

IV. Clinical results in patients treated with esophagectomy in 2003

Table 45 Tumor location

Locations	Cases (%)
Cervical	74 (3.0%)
Upper thotacic	268 (10.8%)
Middle thoracic	1146 (46.3%)
Lower thoracic	792 (32.0%)
Abdominal	152 (6.1%)
EG	18 (0.7%)
EG-Junction (E=G)	19 (0.8%)
Unknown	8 (0.3%)
Total lesions	2477
Total cases	2477
Missing	23

Table 46 Approaches to tumor resection

Approaches	Cases (%)
Cervical approach	80 (3.5%)
Right thoracotomy	1832 (81.2%)
Left thoracotomy	46 (2.0%)
Left thoracoabdominal approach	53 (2.4%)
Laparotomy	78 (3.5%)
Transhiatal (without blunt dissection)	33 (1.5%)
Transhiatal (with blunt dissection)	80 (3.5%)
Sternotomy	6 (0.3%)
Others	27 (1.2%)
Unknown	20 (0.9%)
Total	2255
Missing	255

EG: esophago-gastric

Table 47 Endoscopic surgery

Endoscopic surgery	Cases (%)
None	1899 (84.4%)
Thoracoscopy-assisted	187 (8.3%)
Laparoscopy-assisted	73 (3.2%)
Thoracoscopy + Laparoscopy-assisted	64 (2.8%)
Mediastinoscopy-assisted	20 (0.9%)
Thoracoscopy + Mediastinoscopy-assisted	0
Laparoscopy + Mediastinoscopy-assisted	1 (0.0%)
Others	3 (0.1%)
Unknown	4 (0.2%)
Total	2251
Missing	259

Table 48 Fields of lymph node dissection according to the location of the tumor

* Excluding pharynx and missing 38 cases of locations

Locations	Ceival	Upper thoracic	Middle thoracic	Lower thoracic	Abdominal	EGJ	Total
Region of lymphadenectomy	Cases (%)	Cases (%)	Cases (%)	Cases (%)	Cases (%)	Cases (%)	Cases (%)
None	7 (10.3%)	7 (3.0%)	45 (4.3%)	17 (2.4%)	5 (3.6%)	0	81 (3.8%)
C	21 (30.9%)	2 (0.8%)	3 (0.3%)	1 (0.1%)	0	0	27 (1.3%)
C+UM	14 (20.6%)	2 (0.8%)	3 (0.3%)	0	0	0	19 (0.9%)
C+UM+MLM	2 (2.9%)	7 (3.0%)	13 (1.3%)	9 (1.3%)	0	0	31 (1.4%)
C+UM+MLM+A	15 (22.1%)	132 (55.9%)	467 (45.0%)	219 (30.9%)	8 (5.7%)	2 (5.9%)	843 (39.3%)
C+UM+A	3 (4.4%)	1 (0.4%)	1 (0.1%)	2 (0.3%)	0	0	7 (0.3%)
C+MLM	0	0	0	0	0	0	0
C+MLM+A	0	1 (0.4%)	3 (0.3%)	1 (0.1%)	0	0	5 (0.2%)
C+A	0	1 (0.4%)	2 (0.2%)	2 (0.3%)	1 (0.7%)	0	6 (0.3%)
UM	0	3 (1.3%)	1 (0.1%)	3 (0.4%)	0	0	7 (0.3%)
UM+MLM	0	6 (2.5%)	19 (1.8%)	8 (1.1%)	1 (0.7%)	0	34 (1.6%)
UM+MLM+A	3 (4.4%)	57 (24.2%)	404 (38.9%)	334 (47.1%)	28 (20.0%)	3 (8.8%)	829 (38.7%)
UM+A	0	1 (0.4%)	4 (0.4%)	3 (0.4%)	0	0	8 (0.4%)
MLM	0	2 (0.8%)	4 (0.4%)	6 (0.8%)	4 (2.9%)	2 (5.9%)	18 (0.8%)
MLM+A	1 (1.5%)	8 (3.4%)	43 (4.1%)	83 (11.7%)	56 (40.0%)	18 (52.9%)	209 (9.7%)
A	0	0	14 (1.3%)	18 (2.5%)	35 (25.0%)	9 (26.5%)	76 (3.5%)
Unknown	2 (2.9%)	6 (2.5%)	12 (1.2%)	3 (0.4%)	2 (1.4%)	0	25 (1.2%)
Total	68	236	1038	709	140	34	2144
Missing	6	32	108	83	15	3	247

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

Table 49 Extent of lymph node dissection

Grade of dissection (D)	Cases (%)
DX	47 (2.1%)
D0	121 (5.4%)
DI	292 (13.1%)
DII	1023 (45.8%)
DIII	751 (33.6%)
Total	2234
Missing	276

Table 58 Histological classification

Histological classification	Cases (%)
Not examined	6 (0.3%)
SCC	1985 (88.9%)
SCC	226 (10.1%)
Well diff.	450 (20.2%)
Moderately diff.	944 (42.3%)
Poorly diff.	365 (16.3%)
Adenocarcinoma	73 (3.3%)
Barrett's adenocarcinoma	37 (1.7%)
Adenosquamous cell carcinoma (Co-existing)	10 (0.4%)
(Mucoepidermoid carcinoma)	1 (0.0%)
Adenoid cystic carcinoma	2 (0.1%)
Basaloid carcinoma	24 (1.1%)
Undiff. carcinoma (small cell)	9 (0.4%)
Undiff. carcinoma	6 (0.3%)
Other carcinoma	1 (0.0%)
Sarcoma	17 (0.8%)
Carcinosarcoma	4 (0.2%)
Malignant melanoma	6 (0.3%)
Dysplasia	5 (0.2%)
Other	22 (1.0%)
Unkown	24 (1.1%)
Total	2233
Missing	277

SCC: Squamous cell carcinoma

Table 50 Reconstruction route

Reconstruction route	Cases (%)
None	30 (1.4%)
Antethoracic	212 (9.6%)
Retrosternal	736 (33.3%)
Intrathoracic	348 (15.7%)
Posterior mediastinal	826 (37.3%)
Others	38 (1.7%)
Unknown	23 (1.0%)
Total	2213
Missing	278

Table 51 Organs used for reconstruction

Organs used for reconstruction	Cases (%)
None	36 (1.5%)
Whole stomach	227 (9.7%)
Gastric tube	1758 (74.9%)
Jejunum	107 (4.6%)
Free jejunum	34 (1.4%)
Colon	101 (4.3%)
Free colon	9 (0.4%)
Skin graft	1 (0.0%)
Others	67 (2.9%)
Unknown	8 (0.3%)
Total lesions	2348
Total cases	2248
Missing	262

Table 59 Depth of tumor invasion

pT-category	Cases (%)
pTX	7 (0.3%)
pT0	35 (1.6%)
pTis	33 (1.5%)
pT1a	175 (7.8%)
pT1b	517 (23.2%)
pT2	314 (14.1%)
pT3	959 (42.9%)
pT4	154 (6.9%)
Other	0
Unknown	39 (1.7%)
Total	2233
Missing	277

Table 60 Subclassification of superficial carcinoma

Subclassification	Cases (%)
Not superficial carcinoma	1487 (66.9%)
m1 (ep)	35 (1.6%)
m2 (lpm)	64 (2.9%)
m3 (mm)	101 (4.5%)
sm1	70 (3.1%)
sm2	113 (5.1%)
sm3	232 (10.4%)
Unknown	122 (5.5%)
Total	2224
Missing	286

ep: epithelium

lpm: lamina propria muosa mm: muscularis mucosa

Table 61 Pathological grading of lymph node metastasis

Lymph node metastasis	Cases (%)
n (-)	910 (41.7%)
n1 (+)	329 (15.1%)
n2 (+)	539 (24.7%)
n3 (+)	181 (8.3%)
n4 (+)	177 (8.1%)
Unknown	44 (2.0%)
Total	2180
Missing	330

Table 62 Numbers of the metastatic nodes

Numbers of lymph node metastasis	Cases (%)
0	1176 (46.9%)
1-3	737 (29.4%)
4-7	288 (11.5%)
8-	223 (8.9%)
Unknown	85 (3.4%)
Total	2509
Missing	1

Table 63 Pathological findings of distant organ metastasis

Distant metastasias (M)	Cases (%)
MX	29 (1.3%)
M0	2171 (96.6%)
M1	48 (2.1%)
Total	2248
Missing	262

Table 64 Residual tumor

Residual tumor (R)	Cases (%)
RX	117 (5.3%)
R0	1797 (82.0%)
R1	141 (6.4%)
R2	124 (5.7%)
Unknown	12 (0.5%)
Total	2191
Missing	319

Table 75 Causes of death

Cause of death	Cases (%)
Death due to recurrence	780 (70.0%)
Death due to other cancer	52 (4.7%)
Death due to other disease (rec+)	41 (3.7%)
Death due to other disease (rec-)	122 (11.0%)
Death due to other disease (rec?)	23 (2.1%)
Death within 30 days after operation	25 (2.2%)
Death 31 days or more after operation	52 (4.7%)
Unknown	19 (1.7%)
Total of death cases	1114
Missing	14

rec: recurrence

Operative death means death within 30 days after operation in or out of hospital.

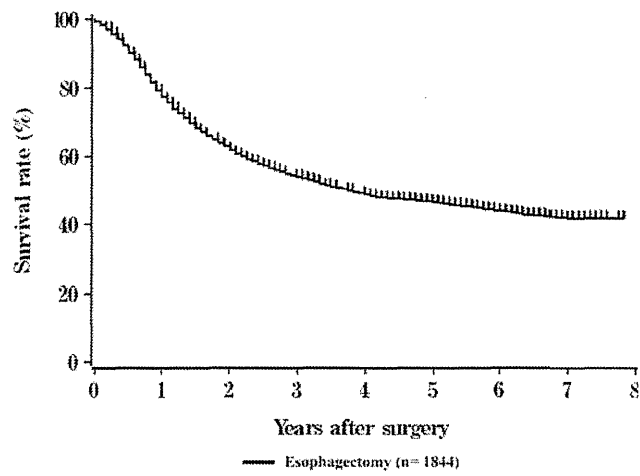
Operative mortality : 1.0%

Follow-up period (years)	
Median (min - max)	2.75 (0.00 - 7.41)

Table 76 Initial recurrent lesion

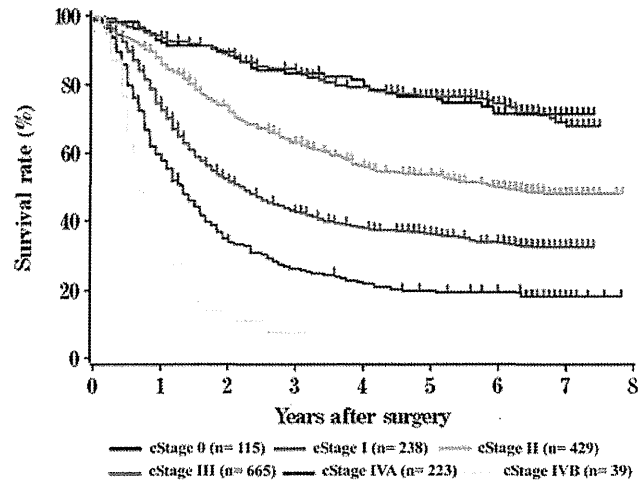
Initial recurrence lesion of fatal cases	Cases (%)
Lymph node	509 (41.4%)
Lung	200 (16.3%)
Liver	176 (14.3%)
Bone	106 (8.6%)
Brain	29 (2.4%)
Primary lesion	95 (7.7%)
Dissemination	56 (4.6%)
Anastomotic region	2 (0.2%)
Others	48 (3.9%)
Unknown	8 (0.7%)
Total of recurrence lesion	1229
Total	1081
Missing	347

Fig. 8 Survival of patients treated by esophagectomy



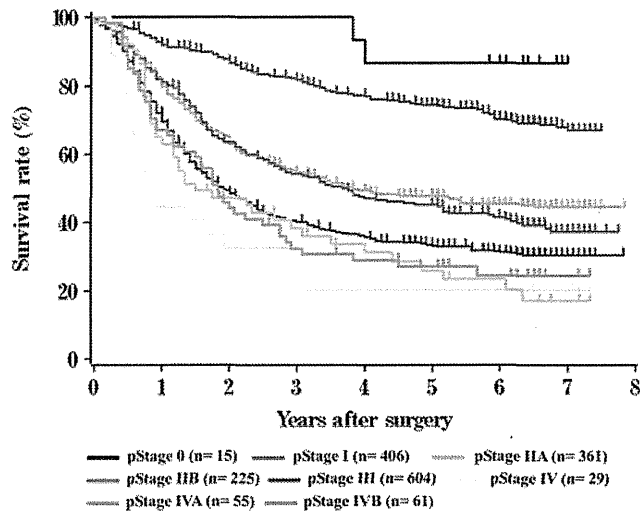
	Years after surgery							
	1	2	3	4	5	6	7	8
Esophagectomy	78.9%	62.8%	54.4%	48.9%	46.6%	44.0%	42.2%	41.9%

Fig. 9 Survival of patients treated by esophagectomy in relation to clinical stage (JSED-cTNM 9th)



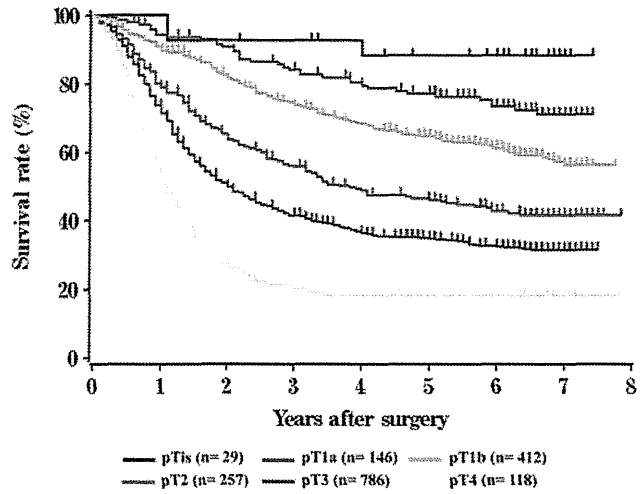
	Years after surgery							
	1	2	3	4	5	6	7	8
cStage 0	92.9%	89.4%	83.0%	79.3%	76.5%	71.2%	71.2%	71.2%
cStage I	94.2%	89.0%	84.4%	79.3%	76.3%	74.3%	69.1%	67.7%
cStage II	87.5%	73.6%	62.9%	55.8%	53.4%	49.7%	47.9%	47.9%
cStage III	74.3%	52.3%	43.0%	37.9%	36.3%	33.7%	32.4%	32.4%
cStage IVA	59.1%	34.6%	26.2%	21.7%	19.7%	19.2%	17.9%	17.9%
cStage IVB	32.7%	13.6%	7.3%	-	-	-	-	-

Fig. 10 Survival of patients treated by esophagectomy in relation to clinical stage (UICC-cTNM 5th)



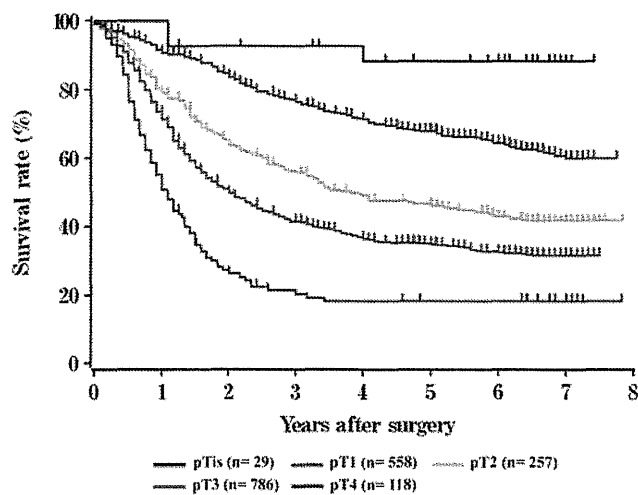
	Years after surgery							
	1	2	3	4	5	6	7	8
cStage 0	93.3%	93.3%	93.3%	86.7%	86.7%	86.7%	86.7%	-
cStage I	92.9%	87.8%	82.2%	76.9%	74.3%	67.8%	66.8%	-
cStage IIA	81.9%	65.1%	55.0%	49.3%	47.5%	45.3%	44.4%	44.4%
cStage IIB	82.0%	63.6%	54.2%	47.0%	45.1%	41.5%	37.4%	37.4%
cStage III	71.6%	49.3%	40.5%	35.6%	33.3%	31.4%	30.4%	30.4%
cStage IV	44.4%	32.3%	28.3%	20.2%	20.2%	20.2%	20.2%	-
cStage IVA	65.0%	47.2%	38.4%	31.1%	25.9%	23.3%	20.2%	20.2%
cStage IVB	67.2%	45.9%	32.5%	29.0%	27.0%	24.3%	24.3%	24.3%

Fig. 11 Survival of patients treated by esophagectomy in relation to the depth of tumor invasion (JSED-pTNM 9th: pT)



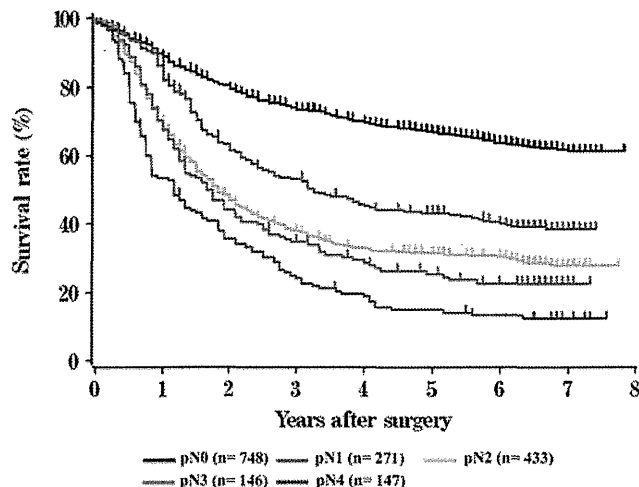
	Years after surgery							
	1	2	3	4	5	6	7	8
pTis	100.0%	92.6%	92.6%	88.2%	88.2%	88.2%	88.2%	88.2%
pT1a	94.3%	90.7%	84.1%	79.5%	77.1%	73.4%	71.0%	71.0%
pT1b	90.8%	82.5%	74.5%	68.4%	64.6%	61.2%	57.1%	56.2%
pT2	80.1%	65.2%	56.1%	48.8%	46.2%	42.7%	41.6%	41.6%
pT3	73.3%	50.9%	41.4%	36.3%	34.9%	32.6%	31.5%	31.5%
pT4	53.3%	27.0%	21.2%	18.0%	18.0%	18.0%	18.0%	18.0%

Fig. 12 Survival of patients treated by esophagectomy in relation to the depth of tumor invasion (UICC-pTNM 5th: pT)



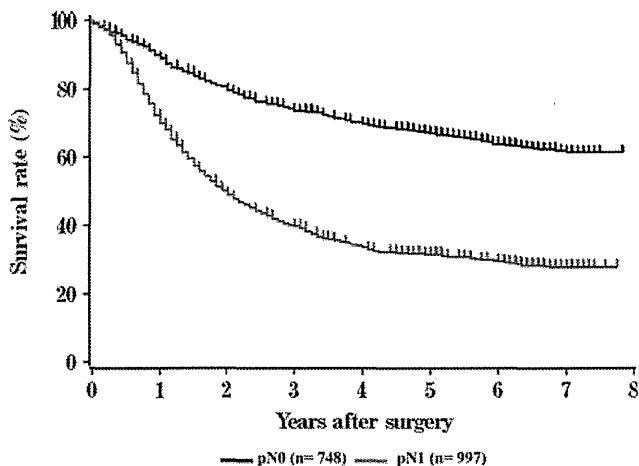
	Years after surgery							
	1	2	3	4	5	6	7	8
pTis	100.0%	92.6%	92.6%	88.2%	88.2%	88.2%	88.2%	88.2%
pT1	91.8%	84.6%	77.0%	71.3%	67.8%	64.3%	60.7%	60.0%
pT2	80.1%	65.2%	56.1%	48.8%	46.2%	42.7%	41.6%	41.6%
pT3	73.3%	50.9%	41.4%	36.3%	34.9%	32.6%	31.5%	31.5%
pT4	53.3%	27.0%	21.2%	18.0%	18.0%	18.0%	18.0%	18.0%

Fig. 13 Survival of patients treated by esophagectomy in relation to lymph node mentastasis (JSED-pTNM 9th: pN)



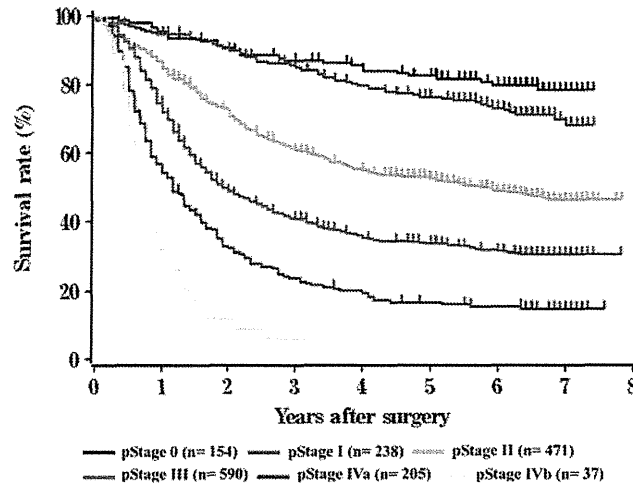
	Years after surgery							
	1	2	3	4	5	6	7	8
pN0	89.8%	80.5%	74.1%	69.6%	67.0%	63.7%	61.8%	61.2%
pN1	86.3%	63.5%	53.4%	45.3%	43.3%	40.6%	38.5%	38.5%
pN2	69.8%	48.4%	38.2%	32.7%	31.7%	30.4%	28.0%	28.0%
pN3	69.7%	44.2%	34.9%	28.8%	25.5%	22.8%	22.8%	22.8%
pN4	53.5%	35.7%	25.0%	18.9%	15.0%	13.3%	12.4%	12.4%

Fig. 14 Survival of patients treated by esophagectomy in relation to lymph node mentastasis (UICC-pTNM 5th: pN)



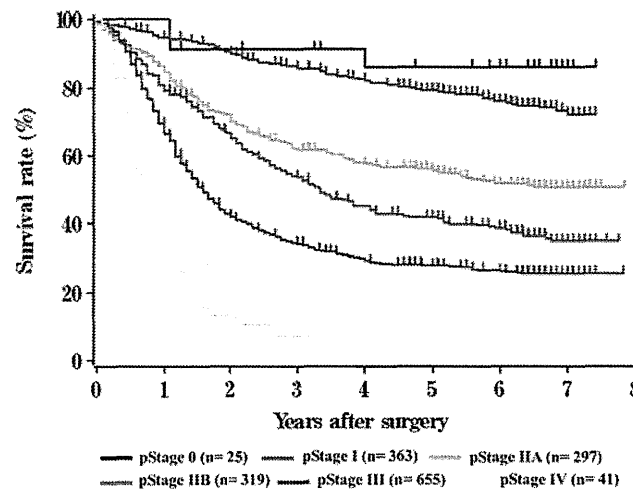
	Years after surgery							
	1	2	3	4	5	6	7	8
pN0	89.8%	80.5%	74.1%	69.6%	67.0%	63.7%	61.8%	61.2%
pN1	72.0%	50.1%	40.0%	33.6%	31.6%	29.6%	27.8%	27.8%

Fig. 15 Survival of patients treated by esophagectomy in relation to pathological stage (JSED-pTNM 9th)



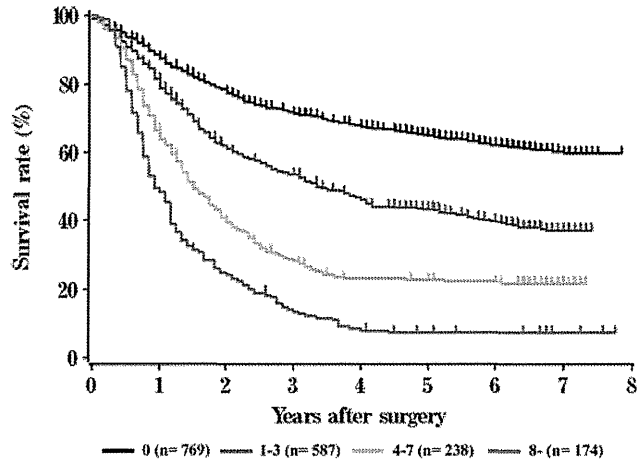
	Years after surgery							
	1	2	3	4	5	6	7	8
pStage 0	95.3%	90.5%	86.9%	83.9%	82.3%	79.6%	78.3%	78.3%
pStage I	94.8%	90.8%	85.8%	79.7%	76.3%	73.0%	69.8%	68.1%
pStage II	86.6%	72.7%	61.1%	54.9%	52.6%	48.9%	46.2%	46.2%
pStage III	74.4%	49.8%	41.0%	35.3%	33.7%	31.7%	30.5%	30.5%
pStage IVa	55.8%	32.7%	23.6%	19.3%	16.5%	15.3%	14.6%	14.6%
pStage IVb	31.7%	11.5%	5.8%	0.0%	-	-	-	-

Fig. 16 Survival of patients treated by esophagectomy in relation to pathological stage (UICC-pTNM 5th)



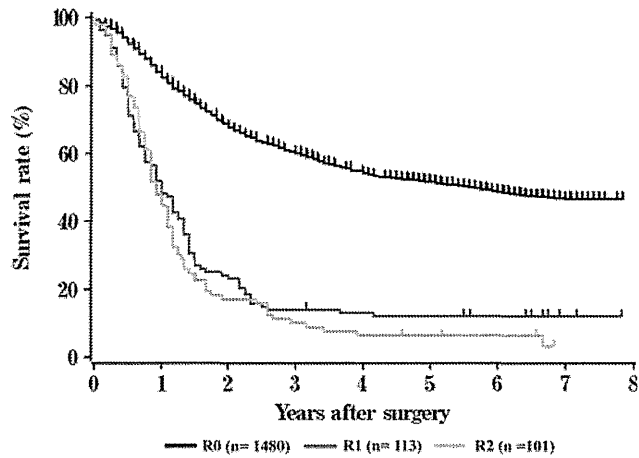
	Years after surgery							
	1	2	3	4	5	6	7	8
pStage 0	100.0%	91.3%	91.3%	85.9%	85.9%	85.9%	85.9%	-
pStage I	94.6%	90.5%	86.4%	82.0%	79.1%	75.8%	73.2%	72.1%
pStage IIA	86.1%	72.1%	62.0%	57.6%	55.8%	51.6%	50.5%	50.5%
pStage IIB	80.8%	66.7%	54.0%	45.3%	41.8%	38.7%	34.9%	34.9%
pStage III	69.0%	42.9%	34.2%	29.1%	27.7%	26.3%	25.4%	25.4%
pStage IV	31.1%	13.0%	6.9%	-	-	-	-	-

Fig. 17 Survival of patients treated by esophagectomy in relation to number of metastatic node



	Years after surgery							
	1	2	3	4	5	6	7	8
0	88.3%	78.6%	71.8%	67.5%	64.9%	62.1%	60.2%	59.7%
1-3	81.2%	62.1%	53.4%	46.1%	43.3%	39.8%	37.1%	37.1%
4-7	66.3%	40.7%	28.6%	23.2%	22.7%	22.1%	21.5%	21.5%
8-	48.9%	24.9%	14.1%	8.0%	7.3%	7.3%	7.3%	7.3%

Fig. 18 Survival of patients treated by esophagectomy in relation to residual tumor (R)



	Years after surgery							
	1	2	3	4	5	6	7	8
R0	83.6%	68.8%	60.4%	54.2%	51.6%	48.8%	46.9%	46.6%
R1	52.0%	24.1%	13.9%	12.9%	11.9%	11.9%	11.9%	11.9%
R2	45.5%	16.9%	9.8%	6.1%	6.1%	6.1%	3.1%	-

JUA Cancer Registration Statistics**Oncological outcomes of the prostate cancer patients registered in 2004: Report from the Cancer Registration Committee of the JUA**

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Objectives: In 2001, the Cancer Registration Committee of the Japanese Urological Association initiated a data collection of prostate cancer patients into a computer-based database. The aim of the present study is to report the clinical and pathological characteristics and outcomes of prostate cancer patients diagnosed in 2004 in Japan.

Methods: Overall, 11 385 patients from 239 institutions were registered into the database. After excluding 1105 patients because of insufficient data, duplication or insufficient follow up, 10 280 patients were eligible for the analysis. Most of them (10 198, 99.2%) were Japanese and 1195 (11.6%) had metastatic disease at the time of diagnosis. The mean and median follow up was 53.2 months and 61.5 months, respectively.

Results: The 5-year overall and prostate cancer-specific survival rate was 89.7% and 94.8%, respectively. The 5-year prostate cancer-specific survival rate of M0 and M1 disease was 98.4% and 61.1%, respectively. For 8424 cases of organ-confined or regional disease, Japanese urologists used as the initial treatment hormone ablation therapy alone (3360, 39.9%), radical prostatectomy (3140, 38.1%), radiation therapy (1530, 18.2%) and watchful waiting (394, 4.7%) including active surveillance or palliative observation.

Conclusions: This is the first large population report of survival data in Japanese prostate cancer patients. In Japan, the disease population, survival period with metastatic disease and ratio of patients having hormone ablation therapy differ from those in Western countries.

Key words: epidemiology, Japanese, prostate neoplasm, registration, survival.

Introduction

In the 1990s, prostate-specific antigen (PSA) testing became widespread in Japan, as in the USA and Europe. The incidence of prostate cancer in Japan also appears to be rising. There is no doubt that PSA screening contributes to earlier diagnosis of prostate cancer. Whether earlier detection of the prostate cancer in Japanese men helps reduce prostate cancer-specific mortality is unknown as a result of the lack of detailed information about Japanese prostate cancer patients.

In 2001, the Japanese Urological Association (JUA) initiated a study to estimate the etiology, diagnosis, initial treatment, pathological findings and final outcomes of prostate cancer using computer-based registration of prostate

cancer patients from institutions all over Japan. In 2005, we published the initial report on the registered 4529 prostate cancer patients diagnosed in 2000¹ and the estimated etiology, diagnosis and initial planned treatment were analyzed. In 2010, detailed information including the main treatment modality used, adjuvant therapies used and survival of prostate cancer patients diagnosed in 2004 was collected to assess the current situation of prostate cancer in Japan.

Methods**Patients and treatments**

In 2010, data on patients diagnosed with prostate cancer in 2004 were collected, along with 5-year survival data and radical prostatectomy pathology results. Incidental cancer found within specimens removed during radical cystoprostatectomy for bladder cancer and transitional cell carcinoma of the prostate concomitant with bladder cancer were excluded from this registry. In all, 11 385 patients were

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registered from 239 institutions. Excluded from the analysis were 37 duplications (only one record was removed and the patient remained in the registry), six patients because of insufficient data and 1062 patients with less than 180 days of follow up, leaving 10 280 patients included in the analysis.

Variables

Pathological staging was based on the fifth edition of the TNM classification and the third edition of the General Rule for Clinical and Pathological Studies on Prostate Cancer (2001).² For the PSA analysis, only cases measured with the Tandem-R kit PSA assay ($n = 4567$, 44.4%) were included to avoid statistical scatter. The definition of PSA failure was determined based on the clinician's judgement.

Survival data were analyzed according to the main treatment modality and the M stage. The initial main treatment modalities used were categorized into four groups: hormone ablation therapy alone (Hx), radical prostatectomy (RP) with or without neoadjuvant hormone treatment (NHT), radiation therapy (Rx) with or without NHT and watchful waiting (W/W) including active surveillance or palliative observation irrespective of the intent. Characteristics and outcomes from the four treatment groups were analyzed separately.

Analysis of progression-free survival was not possible as a result of difficulties in timing recurrence correctly. In some RP cases, adjuvant therapy was initiated just after the operation on the basis of the pathological findings. In addition, there were substantial differences in how post-Rx PSA failure was defined. For these reasons, the exact timing of recurrence was not able to be determined for a sizable number of patients, whom we consequently described as having "stable disease." Therefore, we had no other choice but to focus on the mortality rate, overall survival (OS) and prostate cancer-specific survival (PCSS).

Statistical methods

For statistical analysis, Student's *t*-test was used for analysis of intergroup differences in means and the χ^2 -test was used for intergroup comparisons. Survival data was analyzed by the Kaplan–Meier method.

Results

Overall data

The registered patients' characteristics including age, PSA, Gleason score and TNM classification were summarized according to the main initial treatment modality (see Table S1, supporting information). In the 10 280 patients, the number of the patients treated by Hx, RP, Rx and W/W was 4934 (49.8%), 3212 (31.5%), 1605 (10.4%) and 485 (4.7%), respectively. The 44 patients were treated by other modalities.

There were statistically significant differences among patients in different treatment groups. Patients treated with RP were the youngest (median age 68.0 years), with patients treated with Hx on average approximately 8.5 years older (median age 76.0 years). Overall, median PSA at diagnosis was 13.0 ng/mL, but the median PSA within the W/W group was 7.3 ng/mL, which was the lowest. Median Gleason score was 7 among Hx, RP and Rx groups, and 6 in W/W patients. Approximately 50–60% of each group was staged as T1c or T2 disease. In contrast, 11.5% of patients presented with metastatic disease at the time of diagnosis.

The 5-year OS and PCSS of all 10 280 patients was 98.7% and 94.8%, respectively. Figure 1 shows the Kaplan–Meier curves according to M stage. Bony disease (M1b) comprised the majority of M1 patients. The 5-year OS and PCSS was 61.8% and 66.7%, respectively. In M1 disease, there was a significant correlation between survival and Gleason score ($P < 0.001$).

T1-4N0M0 prostate cancer

There were 8424 patients with T1-4N0M0 prostate cancer. The distribution and proportion of clinical T (cT) stage and age by treatment group are shown in Figure 2. Interestingly, in Japan more than 30% of patients received Hx as the main treatment modality across all cT stages. Even for cT1 or cT2 disease, RP, Hx and Rx were carried out in approximately 50%, 30% and 20% of the cases, respectively. The age distribution differed dramatically across treatment groups. For patients less than 75 years-of-age, RP was widely used. Rx was carried out at similar rates (approximately 20%) in patients up to 80 years-of-age. Hx was the major treatment in patients over 80 years-of-age.

OS and PCSS in T1-4N0M0 disease by treatment group were shown to be 97.6% and 99.6% in RP, 95.6% and 98.5% in Rx, 96.4% and 99.7% in W/W and 88.9% and 97.7% in Hx. Five-year PCSS for patients without metastatic disease was excellent (98.4%).

Distribution of age and PSA in patients with T1-4N0M0 prostate cancer according to treatment was shown in Figure S1. Figure S2 shows cT distribution and the main treatment adopted in these patients. Figure S3 shows overall and prostate cancer-specific survival by main treatment adopted in these patients.

Radical prostatectomy

RP was carried out in 3212 patients (see Table S2, supporting information). Overall, 96.2% of RP patients had radical prostatectomy through the retropubic approach, and 89% had an open procedure. Concerning neurovascular bundle preservation, 70.4% of the patients received RP without nerve preservation. Lymph node dissection was carried out in 91% of the patients with mainly limited obturator lymph node dissection (71.6%).