

**Multi-Institutional Registry of Large Bowel Cancer
in Japan**

Vol.12
Cases treated in 1993 and 1994
(Prospective Registry Data)

Japanese Society for Cancer of the Colon and Rectum

Preface

This, the twelfth report of the 'Multi-institutional Registry of Large Bowel Cancer in Japan,' is composed of clinical and pathological data on patients treated in the year 1993 and 1994. The contents of this issue are the same as that of the tenth report.

It is our hope that this report will be used extensively in routine clinical activities and studies on colorectal cancer.

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Japanese Society for Cancer of the Colon and Rectum

President: Masayuki Yasutomi MD

Chairman, Registry Committee: Yasuo Koyama MD

Data manager, Registry Committee: Kenjiro Kotake MD

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Vol.12-a
Cases treated in 1993
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1 Patients registered

Number of registered patients by institutes

Institute	Department	No. of registered	No. of cases analyzed		
			Total	Male	Female
Aichi Cancer Center Hospital	Dpt GI Surg	136	134	68	66
Aichi Medical University	Dpt Surg I	76	73	43	30
Akita University School of Medicine	Dpt Surg I	29	29	15	14
Aomori Municipal Hospital	Dpt Surg	80	80	42	38
Chiba Cancer Center	Dpt Surg	61	61	40	21
Dokkyo University School of Medicine	Dpt Surg I	29	27	19	8
Faculty of Medicine, Kagoshima University	Dpt Surg I	32	32	22	10
Faculty of Medicine, Kyushu University	Dpt Surg II	18	18	11	7
Faculty of Medicine, Mie University	Dpt Surg II	44	43	23	20
Faculty of Medicine, University of Tokyo	Dpt Surg I	43	41	24	17
Fujita Health University School of Medicine	Dpt Surg (Miura)	29	28	18	10
Fukui Prefectural Hospital	Dpt Surg	109	106	64	42
Fukushima Medical College	Dpt Surg I	18	18	10	8
Fukushima Medical College	Dpt Surg II	18	18	15	3
Gihoku General Hospital	Dpt Surg	23	21	12	9
Gunma Cancer Center	Dpt Surg	46	44	24	20
Gunma University School of Medicine	Dpt Surg I	88	87	59	28
Hamamatsu Medical Center		57	57	35	22
Hamamatsu University School of Medicine	Dpt Surg II	41	39	26	13
Hiraga General Hospital	Dpt Surg	61	61	39	22
Hirosaki University, School of Medicine	Dpt Surg II	52	52	31	21
Hiroshima University School of Medicine	Dpt Surg II	42	41	24	17
Hokkaido University, School of Medicine	Dpt Surg I	23	23	12	11
Hokuriku Central Hospital of the Mutual Aid Association of Public School Teachers	Dpt Surg	22	22	14	8
Hyogo Medical Center for Adults	Dpt Surg	65	63	38	25
Iwakuni National Hospital	Dpt Surg	25	25	9	16
Iwate Medical University, School of Medicine	Dpt IM	15	14	12	2
Iwate Medical University, School of Medicine	Dpt Surg I	67	66	42	24
Izushi Municipal Hospital		5	5	3	2
Jichi Medical School, School of Medicine	Dpt GI Gen Surg	73	73	34	39
Juntendo University, School of Medicine	Dpt Surg I	72	72	49	23
Kagawa Medical School	Dpt Surg I	25	23	15	8
Kanagawa Cancer Center	Dpt Surg IV	119	117	67	50
Kanazawa Medical University	Dpt Surg II	56	55	32	23
Kanto Rosai Hospital		33	31	19	12
Kariya General Hospital.		56	54	33	21
Kasukabe City Hospital	Dpt Surg	34	33	19	14
Kawasaki City Ida Hospital	Dpt Surg	49	47	27	20
Kawasaki Medical School	Dpt GE Surg	69	67	45	22
Keiyu General Hospital		25	25	16	9
Kinki University School of Medicine	Dpt Surg I	70	69	43	26
Kobe University School of Medicine	Dpt Surg I	38	36	22	14
Kokura Memorial Hospital	Dpt Surg	62	60	40	20
Kumamoto University, Medical School	Dpt Surg II	35	35	16	19
Kurume University, School of Medicine	Dpt Surg I	95	94	54	40
Kyoto 1st Red Cross Hospital	Dpt Surg	63	60	32	28
Kyoto National Hospital	Dpt Surg	51	51	33	18
Kyoto Prefectural University of Medicine	Dpt Surg II	29	27	16	11

Multi-Institutional Registry of Large Bowel Cancer

Institute	Department	No. of registered	No. of cases analyzed		
			Total	Male	Female
Kyoto University, Faculty of Medicine	Dpt Surg I	33	33	21	12
Mito Kyodo General Hospital	Dpt Surg	41	41	30	11
Mitsui Memorial Hospital	Dpt Surg	79	79	45	34
Nagoya University, School of Medicine	Dpt Surg I	21	21	13	8
Nagoya University, School of Medicine	Dpt Surg II	46	46	32	14
National Cancer Center Hospital	Dpt Surg	207	204	130	74
National Cancer Center Hospital East	Dpt Surg	30	30	18	12
National Defense Medical College	Dpt Surg I	151	148	90	58
National Kyushu Cancer Center	Dpt GE Surg	59	59	33	26
National Okura Hospital	Dpt Surg	35	35	18	17
National Sapporo Hospital, Hokkaido Cancer Center	Dpt Surg	37	36	25	11
National Tochigi Hospital	Dpt Surg	48	47	21	26
Nihon University, School of Medicine	Dpt Surg III	38	37	21	16
Niigata Cancer Center Hospital	Dpt Surg	101	101	61	40
Niigata University, School of Medicine	Dpt Surg I	39	39	23	16
Nippon Medical School	Dpt Surg I	88	87	46	41
Nogaki Hospital	Dpt Surg	15	15	11	4
Okayama 1st Red Cross Hospital	Dpt Surg	72	72	39	33
Oomoto Hospital		39	38	24	14
Osaka City University Medical School	Dpt Surg I	84	83	39	44
Osaka Medical College	Dpt Surg	80	78	48	30
Osaka Teishin Hospital	Dpt Surg	46	45	24	21
Osaka University Medical School	Dpt Surg II	25	24	15	9
Red Cross Ashikaga Hospital	Dpt Surg	45	43	22	21
Red Cross Nagoya 1st Hospital	Dpt Surg	85	84	46	38
Red Cross Sendai Hospital	Dpt Surg	95	95	52	43
Research Institute for Nuclear Medicine and Biology, Hiroshima University	Dpt Surg	21	21	11	10
Saga Prefectural Hospital, Koseikan		82	80	50	30
Saitama Medical Center	Dpt Surg II	24	22	10	12
Saitama Medical School	Dpt Surg II	48	48	29	19
Sapporo Social Insurance General Hospital		20	20	17	3
Sapporo-Kosei General Hospital	Dpt Surg	103	103	70	33
School of Medicine, Gifu University	Dpt Surg II	41	41	25	16
School of Medicine, Showa University	Dpt Surg	77	75	54	21
School of Medicine, Chiba University	Dpt Surg I	30	30	14	16
School of Medicine, Chiba University	Dpt Surg II	38	38	20	18
School of Medicine, Kitasato University	Dpt Surg	38	34	20	14
School of Medicine, The University of Tokushima	Dpt Surg I	11	11	9	2
School of Medicine, Tokai University	Dpt Surg II	36	36	26	10
Sendai Medical Center Open Hospital		263	257	160	97
Sendai National Hospital	Dpt Surg	47	47	25	22
Shiga University of Medical Science	Dpt Surg I	32	31	18	13
Shikoku Cancer Center Hospital	Dpt Surg	69	66	32	34
Shimane Medical University	Dpt GE Surg II	14	13	7	6
Social Insurance Ritsurin Hospital		26	26	16	10
Tachikawa Kyosai Hospital		32	32	18	14

Institute	Department	No. of registered	No. of cases analyzed		
			Total	Male	Female
Takano Hospital Coloproctology Center		218	215	127	88
Teikyo University School of Medical	Dpt SurgII	46	46	24	22
Teikyo University School of Medicine	Dpt Surg I	53	53	31	22
The 2nd Tokyo National Hospital	Dpt Surg	64	64	44	20
Tochigi Cancer Center		64	64	38	26
Toho University School of Medicine	Dpt Surg I	51	51	25	26
Tohoku University, School of Medicine	Dpt Surg I	34	33	21	12
Tokyo Kyosai Hospital		154	153	112	41
Tokyo Medical and Dental University, School of Medicine	Dpt Surg I	34	34	25	9
Tokyo Medical and Dental University, School of Medicine	Dpt Surg II	40	39	25	14
Tokyo Metropolitan Cancer Detection Center		6	6	3	3
Tokyo Metropolitan Komagome Hospital	Dpt Surg	156	154	73	81
Tokyo Women's Medical College	Institute of GE	140	138	91	47
Toranomon Hospital	Dpt GI Surg	141	138	102	36
Tottori Prefectural Central	Dpt Surg	42	41	26	15
Uwajima City Hospital	Dpt Surg	44	43	22	21
Wakayama Medical College	Dpt GI Surg	40	39	23	16
Yamagata Prefectural Central Hospital	Dpt Surg	124	124	75	49
Yamanashi Medical University	Dpt Surg I	28	28	19	9
Yokohama City University, School of Medicine	Dpt SurgII	84	82	57	25
Total		6,662	6,553	3,947	2,606

Cases with an omission of following terms were excluded from analysis.

- 1) Histological features
- 2) Date of birth
- 3) Date of treatment
- 4) Sex
- 5) Location of tumor

Abbreviation

Dpt: department, Surg: surgery, GI: gastrointestinal, GE: gastroenterological, IM: internal medicine, Gen.: general

2 Patients analyzed

2-1 Site and sex

Histological type	Site	Total No.	Sex	
			Male	Female
Adenocarcinoma ^{a)}	Colon	3,914	2,265	1,649
	Rectum	2,550	1,639	911
Other malignancies ^{b)}	Colon	29	15	14
	Rectum	60	28	32
Total		6,553	3,947	2,606

a): well-, moderately and poorly differentiated adenocarcinoma, mucinous carcinoma and signet-ring cell carcinoma

b): carcinomas other than adenocarcinoma and non-epithelial malignant neoplasms.

2-2 Site and surgical treatment

Histological type	Site	Surgery ^{a)}			Total
		Yes	No		
Adenocarcinoma	Colon	3,911	[238] ^{b)}	3	3,914
	Rectum	2,547	[100]	3	2,550
	Total	6,458	[338]	6	6,464
Other malignancies	Colon	29	[1]	0	29
	Rectum	60	[3]	0	60
	Total	89	[4]	0	89
Total		6,547	[342]	6	6,553

a): Includes cryosurgery and electric cautery therapy.

b): The figures in parentheses represent the number of patients treated solely by endoscopic polypectomy, and those are included in the number in the left column.

3 Age incidence

all cases

3-1 Male by site

Site	Age									Total
	≤ 9	≤ 19	≤ 29	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
I	0	0	1	0	1	1	1	0	0	4
V	0	0	0	0	2	1	3	1	0	7
C	0	0	0	2	14	34	61	45	19	175
A	0	0	0	13	24	78	183	115	45	458
T	0	0	2	10	18	64	118	67	30	309
D	0	0	0	5	30	48	76	51	20	230
S	2	0	3	14	72	282	428	227	69	1,097
Rs	0	1	2	3	28	117	154	104	20	429
Ra	0	0	3	10	47	143	171	82	18	474
Rb	0	1	3	14	81	209	275	122	33	738
P	0	0	0	2	3	2	13	5	1	26
E	0	0	0	0	0	0	0	0	0	0
Total	2	2	14	73	320	979	1,483	819	255	3,947

3-2 Female by site

Site	Age									Total
	≤ 9	≤ 19	≤ 29	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
I	0	0	0	1	0	1	0	1	0	3
V	0	0	0	0	0	1	4	0	1	6
C	0	0	2	2	12	45	66	55	21	203
A	0	0	1	4	32	83	123	109	54	406
T	0	0	0	5	19	40	77	66	18	225
D	0	0	1	4	8	34	44	24	10	125
S	1	0	2	17	85	183	229	142	36	695
Rs	0	0	0	5	23	56	75	52	13	224
Ra	0	0	0	2	25	76	86	52	18	259
Rb	1	1	1	12	34	120	139	83	29	420
P	0	0	0	0	2	4	16	12	3	37
E	0	0	0	0	1	0	0	2	0	3
Total	2	1	7	52	241	643	859	598	203	2,606

I: ileum, V: vermiform process, C: caecum, A: ascending colon, T: transverse colon, D: descending colon, S: sigmoid colon, Rs: rectosigmoid, Ra: rectum above the peritoneal reflection, Rb: rectum below the peritoneal reflection, P: proctos, E: external skin.

Refer to "The General Rules for Clinical and Pathological Studies on Cancer of the Colon, Rectum and Anus" by Japanese Society for Cancer of the Colon and Rectum (JSCCR) on terminology and classification used in this report.

Japanese Journal of Surgery 13: 557-573, 1983

4 Occupation

adenocarcinoma

4-1 Site and sex

Occupation	Colon		Rectum		Total
	Male	Female	Male	Female	
None	745	1,145	477	621	2,988
Agriculture	107	44	83	33	267
Fishery	37	1	27	0	65
Industry	83	18	83	5	189
Physical labor	6	1	4	1	12
Office worker	412	85	361	47	905
Specialist	108	46	84	22	260
Administrative	193	102	168	70	533
Other service industry	122	11	83	5	221
Unknown	452	196	269	107	1,024
Total	2,265	1,649	1,639	911	6,464

4-2 Age distribution, colon, male

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	5	5	40	269	288	138	745
Agriculture	1	3	13	57	29	4	107
Fishery	1	5	13	13	5	0	37
Industry	2	7	26	33	12	3	83
Physical labor	0	2	2	1	0	1	6
Office worker	20	66	170	135	19	2	412
Specialist	5	5	27	42	17	12	108
Administrative	9	22	58	74	25	5	193
Other service industry	0	4	27	58	30	3	122
Unknown	8	40	101	183	70	14	416
Total	51	159	477	865	495	182	2,229

4-3 Age distribution, colon, female

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	21	82	214	376	325	127	1,145
Agriculture	0	1	12	25	6	0	44
Fishery	0	0	1	0	0	0	1
Industry	1	2	5	9	1	0	18
Physical labor	0	0	1	0	0	0	1
Office worker	9	19	31	23	3	0	85
Specialist	2	8	13	18	4	1	46
Administrative	3	16	45	25	10	3	102
Other service industry	0	0	3	4	3	1	11
Unknown	4	26	57	58	43	8	196
Total	40	154	382	538	395	140	1,649

4-4 Age distribution, rectum, male

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	4	7	25	204	187	50	477
Agriculture	1	4	13	40	22	3	83
Fishery	1	6	10	8	2	0	27
Industry	2	3	45	27	6	0	83
Physical labor	0	0	1	3	0	0	4
Office worker	12	66	175	100	5	3	361
Specialist	6	9	29	25	12	3	84
Administrative	6	22	61	63	12	4	168
Other service industry	0	12	21	26	22	2	83
Unknown	5	22	83	110	43	6	269
Total	37	151	463	606	311	71	1,639

4-5 Age distribution, rectum, female

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	16	41	136	211	159	58	621
Agriculture	0	1	6	17	9	0	33
Fishery	0	0	0	0	0	0	0
Industry	0	1	2	2	0	0	5
Physical labor	0	0	0	1	0	0	1
Office worker	1	10	27	7	2	0	47
Specialist	2	4	11	5	0	0	22
Administrative	2	12	31	20	4	1	70
Other service industry	0	0	3	2	0	0	5
Unknown	0	13	33	39	20	2	107
Total	21	82	249	304	194	61	911

5 Family history of cancers

adenocarcinoma

5-1 Family history of colorectal cancer

Site	Family history of colorectal cancer			Total
	No	Yes	Unknown	
I	4	1	1	6
V	11	0	0	11
C	306	34	34	374
A	683	71	102	856
T	429	52	51	532
D	279	29	45	353
S	1,490	145	147	1,782
Rs	540	55	56	651
Ra	621	56	49	726
Rb	958	84	79	1,121
P	45	1	4	50
E	1	1	0	2
Total	5,367	529	568	6,464

5-2 Family history of other cancers

Site	Family history of other cancers			Total
	No	Yes	Unknown	
I	3	2	1	6
V	5	6	0	11
C	235	111	28	374
A	517	242	97	856
T	342	138	52	532
D	208	103	42	353
S	1,167	469	146	1,782
Rs	423	173	55	651
Ra	491	184	51	726
Rb	743	299	79	1,121
P	33	12	5	50
E	1	1	0	2
Total	4,168	1,740	556	6,464

5-3 Age distribution, colon

		Family history(FH) of colorectal cancer								
		No			Yes			Unknown (?)		
FH of other cancers		No	Yes	?	No	Yes	?	No	Yes	?
Age	≤ 39	51	13	0	6	12	0	0	1	8
	≤ 49	193	63	0	15	13	1	0	3	25
	≤ 59	512	215	3	56	24	6	3	10	60
	≤ 69	807	341	4	62	42	6	3	11	127
	≤ 79	531	205	5	28	32	3	0	10	82
	≥ 80	195	61	3	14	11	1	1	4	32
Total		2,289	898	15	181	134	17	7	39	334

5-4 Age distribution, rectum

		Family history(FH) of colorectal cancer								
		No			Yes			Unknown (?)		
FH of other cancers		No	Yes	?	No	Yes	?	No	Yes	?
Age	≤ 39	40	10	0	2	2	1	0	0	3
	≤ 49	148	53	0	15	6	1	0	0	10
	≤ 59	426	174	4	38	15	3	0	5	47
	≤ 69	571	203	4	47	27	2	1	6	49
	≤ 79	306	108	4	16	16	1	0	6	48
	≥ 80	78	34	2	3	2	0	0	2	11
Total		1,569	582	14	121	68	8	1	19	168

6 Past history

adenocarcinoma

6-1 Diseases of the colon, rectum and anus, by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	5	9	211	529	366	210	1,173	425	465	738	16	0	4,147
Adenoma	0	0	33	77	47	31	122	31	49	66	5	1	462
Adenomatosis	0	0	2	1	1	2	3	1	2	5	0	0	17
Ulcerative colitis	0	0	1	1	2	1	1	1	0	2	0	0	9
Crohn's disease	0	0	0	0	0	0	0	0	0	0	0	0	0
Anal fistula	0	0	1	11	5	4	23	5	10	14	4	0	77
Radiation colitis	0	0	0	0	0	1	1	0	0	1	0	0	3
Diverticulosis	0	0	5	5	2	2	15	2	3	3	1	0	38
Hemorrhoid	1	1	18	34	23	25	105	48	50	80	10	0	395
Appendicitis	0	0	81	137	55	48	242	99	104	156	10	0	932
Others	0	0	7	22	10	13	21	10	16	18	2	1	120
Unknown	0	1	15	39	21	16	76	29	27	38	2	0	264
Total	6	11	374	856	532	353	1,782	651	726	1,121	50	2	6,464

6-2 Diseases of the colon, rectum and anus, by age, male

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	≥ 80	
None	63	208	589	882	504	171	2,417
Adenoma	5	20	71	143	77	17	333
Adenomatosis	2	3	1	3	1	0	10
Ulcerative colitis	0	1	1	2	0	0	4
Crohn's disease	0	0	0	0	0	0	0
Anal fistula	3	6	18	26	9	3	65
Radiation colitis	0	0	0	0	0	0	0
Diverticulosis	0	3	7	8	9	2	29
Hemorrhoid	5	29	77	106	59	15	291
Appendicitis	8	28	164	205	90	23	518
Others	1	3	12	25	20	10	71
Unknown	1	9	30	71	43	12	166
Total	88	310	970	1,471	812	253	3,904

6-3 Diseases of the colon, rectum and anus, by age, female

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	≥ 80	
None	47	155	384	557	432	155	1,730
Adenoma	1	12	39	48	22	7	129
Adenomatosis	2	3	1	1	0	0	7
Ulcerative colitis	0	1	0	2	2	0	5
Crohn's disease	0	0	0	0	0	0	0
Anal fistula	0	0	3	7	1	1	12
Radiation colitis	0	0	0	1	1	1	3
Diverticulosis	0	0	2	2	5	0	9
Hemorrhoid	1	18	25	33	20	7	104
Appendicitis	7	40	148	143	61	15	414
Others	0	1	8	15	17	8	49
Unknown	3	6	21	33	28	7	98
Total	61	236	631	842	589	201	2,560

6-4 Diseases of other digestive organs, by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	3	9	265	588	377	250	1,265	479	521	853	42	1	4,653
Gall stone ope(-)	0	0	10	22	10	5	40	14	15	21	0	0	137
Gall stone ope(+)	1	0	11	43	21	15	60	22	26	28	0	0	227
Pancreatitis	0	0	1	6	2	1	6	1	2	5	0	0	24
Hepatitis	0	1	19	22	13	10	55	14	26	26	1	0	187
Peptic ulcer ope(-)	1	0	24	56	36	17	126	45	53	81	2	0	441
Peptic ulcer ope(+)	1	0	8	26	18	10	54	18	16	20	2	1	174
Others	0	0	16	41	31	21	85	26	37	40	1	0	298
Unknown	0	1	20	52	24	24	91	32	30	47	2	0	323
Total	6	11	374	856	532	353	1,782	651	726	1121	50	2	6,464

6-5 Diseases of other digestive organs, by age, male

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	≥ 80	
None	74	218	694	999	527	175	2,687
Gall stone ope(-)	0	7	13	23	20	8	71
Gall stone ope(+)	1	2	24	50	36	12	125
Pancreatitis	0	2	8	4	3	0	17
Hepatitis	1	9	50	53	19	4	136
Peptic ulcer ope(-)	9	43	77	144	63	14	350
Peptic ulcer ope(+)	1	2	30	53	45	9	140
Others	1	16	35	55	48	17	172
Unknown	1	11	39	90	51	14	206
Total	88	310	970	1,471	812	253	3,904

6-6 Diseases of other digestive organs, by age, female

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	≥ 80	
None	51	204	503	627	433	148	1,966
Gall stone ope(-)	1	3	12	18	26	6	66
Gall stone ope(+)	1	3	22	36	34	6	102
Pancreatitis	0	1	1	4	1	0	7
Hepatitis	1	1	10	22	12	5	51
Peptic ulcer ope(-)	2	9	25	24	20	11	91
Peptic ulcer ope(+)	0	0	4	16	10	4	34
Others	2	8	27	54	24	11	126
Unknown	3	7	27	41	29	10	117
Total	61	236	631	842	589	201	2,560

7 Symptom (multi-answer)

adenocarcinoma

7-1 Site

Symptom	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	2	1	64	178	114	64	355	87	104	116	3	0	1,088
Anal bleeding	1	1	66	135	85	74	645	351	407	692	27	2	2,486
Mucous discharge	0	0	2	4	0	5	29	9	15	14	2	0	80
Constipation	0	0	18	49	33	49	189	73	86	118	5	0	620
Diarrhea	1	0	15	40	20	17	98	39	42	73	1	0	346
Tenesmus	1	0	0	3	2	2	27	7	22	36	1	0	101
Narrowed stool	1	0	6	12	9	14	90	39	63	73	2	0	309
Anal tumor	0	0	0	0	0	0	0	1	0	12	2	0	15
Anal pain	0	0	3	1	1	2	11	7	9	72	16	0	122
Nausea, vomiting	0	0	11	25	12	13	17	6	5	5	0	0	94
Ileus	0	0	21	42	31	19	55	24	13	8	3	0	216
Abdominal distension	0	0	12	35	19	18	78	18	24	26	1	0	231
Abdominal pain	3	7	124	252	132	94	265	70	40	43	3	0	1,033
Abdominal mass	0	3	33	34	19	6	20	2	2	2	0	0	121
Anemia	1	0	42	105	66	16	54	13	17	19	0	0	333
Weight loss	0	0	13	26	22	8	34	13	13	19	1	0	149
Total	10	12	430	941	565	401	1,967	759	862	1,328	67	2	7,344

7-2 Duration of symptom, by site

Site	Duration of symptom								Total
	None	<1m	<3m	<6m	<1y	<2y	>2y	Unknown	
I	1	1	0	1	2	1	0	0	6
V	2	4	3	1	1	0	0	0	11
C	60	92	102	44	32	12	8	24	374
A	182	174	259	112	59	16	12	42	856
T	114	132	141	63	41	9	5	27	532
D	89	79	95	47	16	1	5	21	353
S	375	410	519	222	128	32	31	65	1,782
Rs	99	156	177	92	69	18	11	29	651
Ra	101	136	202	145	64	24	17	37	726
Rb	127	195	329	203	134	52	35	46	1,121
P	1	8	15	9	7	4	4	2	50
E	0	1	0	0	1	0	0	0	2
Total	1,151	1,388	1,842	939	554	169	128	293	6,464

7-3 Duration of symptom

Symptom	Duration of symptom								Total
	None	<1m	<3m	<6m	<1y	<2y	>2y	Unknown	
None	1,088								1,088
Anal bleeding	105	583	805	452	304	101	79	57	2,486
Mucous discharge	4	7	20	22	9	7	3	8	80
Constipation	19	126	205	124	92	17	19	18	620
Diarrhea	9	68	110	77	49	14	8	11	346
Tenesmus	1	21	35	28	9	4	2	1	101
Narrowed stool	3	57	96	74	48	15	11	5	309
Anal tumor	0	0	4	4	2	0	3	2	15
Anal pain	2	27	32	25	23	7	5	1	122
Nausea, vomiting	3	36	34	10	8	0	1	2	94
Ileus	17	90	61	31	3	2	4	8	216
Abdominal distension	7	62	85	37	23	8	5	4	231
Abdominal pain	43	288	357	177	94	22	20	32	1,033
Abdominal mass	6	35	39	21	11	4	2	3	121
Anemia	24	73	120	52	36	7	7	14	333
Weight loss	4	12	55	42	24	5	5	2	149
Total	1,335	1,485	2,058	1,176	735	213	174	168	7,344

8 Serum carcinoembryonic antigen (CEA)

8-1 Measurement

Methods	
Not examined	344
Z-gel	1,568
Sandwich	2,633
CIS	1,594
Others	325
Total	6,464

adenocarcinoma

8-2 Serum CEA value

CEA value(ng/ml)	
<2.5	2,366
<5	1,297
<10	769
<30	601
<50	184
≥ 50	351
Unknown	227
Total	5,795

(Z-gel, Sandwich and CIS)

9 Multiple primary cancers

adenocarcinoma

9-1 Synchronous, by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
Colon & rectum	1		26	81	50	40	154	39	51	90	3		535
Head & neck			1		1	1	2	1					6
Chest wall							1						1
Breast				1		3	3		1				8
Lung & bronchus				2	1	4	3	2	3	5			20
Mediastinum													0
Esophagus				1	1		1		2	2			7
Stomach	1		9	20	5	10	37	10	20	16			128
Small intestine					1		2						3
Liver				2	3	1	9	5	5	2			27
Biliary tract			3	1			1	1	1	1			8
Pancreas					2				1				3
Cervix uteri							2						2
Corpus uteri					2								2
Uterus NOS ^{a)}				1	2	1	2						6
Adnexa					1								1
Vagina													0
Prostate				2	1		2	1	2	2			10
Testis													0
Bladder				2	1	1	2	1	2	2			11
Kidney			1	1	2		1	1	1	1			8
Skin													0
Bone										1			1
Soft tissue													0
Hematopoietic & RE ^{b)} system				1		1		1		2			5
Unknown site													0

9-2 Metachronous,by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
Colon & rectum			15	34	27	25	24	6	9	17	1	2	160
Head & neck				3	4	1	5	5	1	3			22
Chest wall													0
Breast			6	8	5	4	17	3	3	4			50
Lung & bronchus			1	1		2	3	1	1	1			10
Mediastinum													0
Esophagus					1		1			1			3
Stomach			7	19	13	6	33	21	19	19		1	138
Small intestine				1	1		1						3
Liver				1	2		1			1			5
Biliary tract				1			2						3
Pancreas													0
Cervix uteri			1		2		3	2	1	1			10
Corpus uteri				2	1								3
Uterus NOS ^{a)}			2	8	3	1	2		4	8			28
Adnexa				1	1	2	1			1			6
Vagina													0
Prostate			1		1	1		1		1			7
Testis								1					1
Bladder			2	4		1	7	3	1	3			21
Kidney						2	2	1	1				6
Skin							2						2
Bone													0
Soft tissue													0
Hematopoietic & RE ^{b)} system			1						1	2			4
Unknown site													0

a)NOS: not otherwise specified, b)RE:reticuloendothelial.

10 Multiple colorectal carcinomas**adenocarcinoma****10a Macroscopic****10a-1 Number of cancers**

Number of tumors									Total
1	2	3	4	5	6	7	>8	Unknown	
5,965	390	69	17	5	2	3	3	10	6,464

10a-2 Male, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	81	4	1	0	0	0	0	0	0	86
≤ 49	290	14	4	0	1	0	1	2	0	312
≤ 59	891	65	12	0	0	0	0	0	2	970
≤ 69	1,329	100	26	9	2	1	1	0	3	1,471
≤ 79	723	73	10	4	1	0	0	0	1	812
≥ 80	222	26	4	0	0	0	1	0	0	253
Total	3,536	282	57	13	4	1	3	2	6	3,904

10a-3 Female, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	57	2	0	1	0	0	0	0	1	61
≤ 49	227	8	1	0	0	0	0	0	0	236
≤ 59	597	27	3	2	1	0	0	1	0	631
≤ 69	797	39	4	0	0	1	0	0	1	842
≤ 79	561	23	2	1	0	0	0	0	2	589
≥ 80	190	9	2	0	0	0	0	0	0	201
Total	2,429	108	12	4	1	1	0	1	4	2,560

10a-4 Male and female, by site

Site	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
I	5	1	0	0	0	0	0	0	0	6
V	10	0	0	0	0	0	0	0	1	11
C	346	21	5	2	0	0	0	0	0	374
A	790	56	8	1	0	0	0	0	1	856
T	484	36	5	3	1	0	2	0	1	532
D	312	30	8	0	1	1	0	0	1	353
S	1,635	111	22	6	0	1	1	2	4	1,782
Rs	615	30	4	1	1	0	0	0	0	651
Ra	677	43	4	0	0	0	0	1	1	726
Rb	1,043	59	13	4	2	0	0	0	0	1,121
P	46	3	0	0	0	0	0	0	1	50
E	2	0	0	0	0	0	0	0	0	2
Total	5,965	390	69	17	5	2	3	3	10	6,464

10b Histological**10b-1 Number of cancers**

Number of tumors									Total
1	2	3	4	5	6	7	>8	Unknown	
5,912	429	72	19	9	1	1	4	17	6,464

10b-2 Male, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	81	4	1	0	0	0	0	0	0	86
≤ 49	290	14	4	0	1	0	1	2	0	312
≤ 59	891	65	12	0	0	0	0	0	2	970
≤ 69	1,329	100	26	9	2	1	1	0	3	1,471
≤ 79	723	73	10	4	1	0	0	0	1	812
≥ 80	222	26	4	0	0	0	1	0	0	253
Total	3,536	282	57	13	4	1	3	2	6	3,904

10b-3 Female, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	58	1	0	1	0	0	0	0	1	61
≤ 49	228	7	1	0	0	0	0	0	0	236
≤ 59	593	30	3	2	2	0	0	1	0	631
≤ 69	799	37	5	1	0	0	0	0	0	842
≤ 79	555	27	2	1	1	0	0	0	3	589
≥ 80	187	9	3	0	0	0	0	0	2	201
Total	2,420	111	14	5	3	0	0	1	6	2,560

10b-4 Male and female, by site

Site	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
I	5	1	0	0	0	0	0	0	0	6
V	10	0	0	0	0	0	0	0	1	11
C	348	19	5	2	0	0	0	0	0	374
A	773	67	11	2	1	0	0	0	2	856
T	478	39	5	4	1	0	1	0	4	532
D	312	30	9	0	1	0	0	0	1	353
S	1,624	121	20	7	2	1	0	3	4	1,782
Rs	611	35	2	1	1	0	0	0	1	651
Ra	673	46	4	0	0	0	0	1	2	726
Rb	1,030	68	16	3	3	0	0	0	1	1,121
P	46	3	0	0	0	0	0	0	1	50
E	2	0	0	0	0	0	0	0	0	2
Total	5,912	429	72	19	9	1	1	4	17	6,464

11 Modality of principal treatment ^{a)}

Modality	Adenocarcinoma		Other malignancies	
	Colon	Rectum	Colon	Rectum
No definitive treatment	12	6	3	1
Endoscopic polypectomy	238	97	1	3
Surgery	3,657	2,442	28	55
Cryosurgery	1	1	0	0
Electric cautery therapy	0	0	0	0
Radiation	0	0	0	1
Chemotherapy	3	3	0	0
Other modalities	3	1	0	0
Total	3,914	2,550	29	60

a): modalities regarded as the most effective and beneficial treatment for cancer.

12 Additional or adjuvant treatment**adenocarcinoma**

Treatment	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	2	3	156	417	250	172	862	300	292	466	22	2	2,944
Radiation													
preoperative	0	0	0	0	0	0	3	0	8	35	2	0	48
intraoperative	0	0	0	1	1	0	2	0	1	1	0	0	6
postoperative	1	0	2	4	0	0	4	2	8	25	0	0	46
pre- and postoperative	0	0	0	0	1	0	0	0	1	14	0	0	16
Chemotherapy													
preoperative	0	0	3	2	1	0	14	0	5	7	0	0	32
postoperative	3	8	166	356	227	149	738	293	341	480	22	0	2,783
pre- and postoperative	0	0	16	31	20	9	64	22	32	43	3	0	240
Others	0	0	8	12	6	5	27	9	11	10	0	0	88
Unknown	0	0	23	33	26	18	68	25	27	40	1	0	261
Total	6	11	374	856	532	353	1,782	651	726	1,121	50	2	6,464

13 Previous surgical treatment**adenocarcinoma**

None	5,975
Enterostomy	50
Polypectomy	183
Others	25
Unknown	231
Total	6,464

14 Reasons for non-surgical treatment**adenocarcinoma**

Reasons for non-surgical treatment	
Unresectable disease	4
Physical condition impeding surgery	3
Refusal	2
Others reasons	5
Total	14

15 Gross appearance of the primary lesion**15-1 Adenocarcinoma**

Site	Superficial	Protruding	Localized ulcerating	Infiltrating ulcerating	Diffuse infiltrating	Unclassified	Unknown	Total
I	2	0	2	2	0	0	0	6
V	1	4	0	1	1	2	2	11
C	51	57	195	64	3	3	1	374
A	151	82	527	78	3	6	9	856
T	119	47	295	57	4	2	8	532
D	81	26	193	47	2	1	3	353
S	435	160	987	157	14	12	17	1,782
Rs	111	60	392	66	2	9	11	651
Ra	125	59	445	71	3	7	16	726
Rb	226	92	663	102	13	13	12	1,121
P	6	7	24	7	0	4	2	50
E	1	0	0	0	0	1	0	2
Total	1,309	594	3,723	652	45	60	81	6,464

15-2 Other malignancies

Site	Superficial	Protruding	Localized ulcerating	Infiltrating ulcerating	Diffuse infiltrating	Unclassified	Unknown	Total
I	0	1	0	0	0	0	0	1
V	1	0	0	0	0	1	0	2
C	1	1	1	1	0	0	0	4
A	2	0	4	0	1	1	0	8
T	0	0	2	0	0	0	0	2
D	1	0	0	0	0	1	0	2
S	7	0	3	0	0	0	0	10
Rs	0	0	2	0	0	0	0	2
Ra	7	0	0	0	0	0	0	7
Rb	17	8	6	2	0	1	3	37
P	1	3	4	3	0	2	0	13
E	0	0	0	0	0	1	0	1
Total	37	13	22	6	1	7	3	89

Refer to the general rules of “JSCCR” for details of the classification.

16 Gross appearance, modificatory subtypes**adenocarcinoma**

Site	None	Stricture	Mucinous	Schirrous	Villous	Others	Unknown	Total
I	4	1	0	0	0	0	1	6
V	7	0	0	0	0	0	4	11
C	133	11	1	1	6	0	222	374
A	349	27	7	2	6	1	464	856
T	229	22	3	0	3	0	275	532
D	144	19	2	0	2	0	186	353
S	786	44	6	1	12	0	933	1,782
Rs	281	17	0	0	8	0	345	651
Ra	292	18	3	1	9	0	403	726
Rb	457	7	2	5	13	1	636	1,121
P	14	1	1	0	1	0	33	50
E	1	0	1	0	0	0	0	2
Total	2,697	167	26	10	60	2	3,502	6,464

17 Gross appearance, early cancer (superficial type)**adenocarcinoma**

Site	Ip	Is	Ila	Ilb	Ilc	III	Others	Unknown	Total
I	1	0	1	0	0	0	0	0	2
V	0	0	1	0	0	0	0	0	1
C	5	22	14	0	1	0	7	2	51
A	33	54	34	1	6	2	15	6	151
T	23	25	40	0	12	2	15	2	119
D	28	26	19	0	1	0	6	1	81
S	176	129	67	1	8	3	41	10	435
Rs	24	54	16	0	6	0	5	6	111
Ra	21	46	33	1	4	0	19	1	125
Rb	30	107	51	0	8	1	24	5	226
P	1	0	2	0	0	0	3	0	6
E	1	0	0	0	0	0	0	0	1
Total	343	463	278	3	46	8	135	33	1,309

Ip: protruding pedunculated type, Is: protruding sessile type, Ila: superficial elevated type, Ilb: superficial flat type, Ilc: superficial depressed type, III: excavated type.

18 Tumor site by circumferential division of the bowel wall **adenocarcinoma**

Site	Dorsal (Posterior)	Ventral (Anterior)	Medial (Right)	Lateral (Left)	Circular	Unknown	Total
I	0	2	0	0	4	0	6
V	0	0	0	0	7	4	11
C	66	78	13	22	151	44	374
A	175	148	43	44	335	111	856
T	96	83	22	19	242	70	532
D	57	65	14	20	141	56	353
S	369	353	79	82	529	370	1,782
Rs	112	142	36	39	199	123	651
Ra	152	182	58	46	187	101	726
Rb	251	242	119	142	220	147	1,121
P	10	9	3	11	12	5	50
E	2	0	0	0	0	0	2
Total	1,290	1,304	387	425	2,027	1,031	6,464

19 Size of the tumor **adenocarcinoma****19-1 Circumferential occupancy, by site**

Site	<1/3	<1/2	<2/3	Semicircular	Circular	Unknown	Total
I	2	0	0	0	4	0	6
V	0	1	0	1	6	3	11
C	72	52	48	55	137	10	374
A	201	88	116	147	284	20	856
T	131	50	45	76	216	14	532
D	100	36	34	46	130	7	353
S	579	227	212	261	464	39	1,782
Rs	167	89	100	100	180	15	651
Ra	194	118	118	134	149	13	726
Rb	353	206	212	164	161	25	1,121
P	15	11	8	5	10	1	50
E	2	0	0	0	0	0	2
Total	1,816	878	893	989	1,741	147	6,464

19-2 Circumferential occupancy and maximum diameter

Diameter	<1/3	<1/2	<2/3	Semicircular	Circular	Unknown	Total
≤ 2cm	787	18	1	9	9	19	843
≤ 3cm	567	176	41	12	24	18	838
≤ 5cm	334	551	463	252	315	31	1,946
≤ 7cm	22	86	301	431	611	18	1,469
>7cm	13	23	52	245	668	8	1,009
Unknown	93	24	35	40	114	53	359
Total	1,816	878	893	989	1,741	147	6,464

20 Serosal invasion of the tumor**adenocarcinoma, surgical cases**

Site	S0	S1	S2	S3	Unknown	Total
I	2	0	1	3	0	6
V	1	2	2	4	2	11
C	91	54	142	75	1	363
A	213	154	327	118	4	816
T	148	61	225	70	2	506
D	94	56	131	43	1	325
S	547	284	600	209	6	1,646
Rs	182	110	253	75	2	622
Ra	247	137	249	49	10	692
Rb	617	139	214	71	43	1,084
P	29	4	3	7	7	50
E	2	0	0	0	0	2
Total	2,173	1,001	2,147	724	78	6,123

S0: No serosal invasion.

S1: Slight or questionable serosal invasion.

S2: Definite serosal invasion.

S3: Invasion to other organs or tissue through serosa.

21 Histological type

21-1 Adenocarcinoma

Site	w/d	m/d	p/d	muc	sig	NOS	Total
I	2	2	0	1	1	0	6
V	3	5	1	2	0	0	11
C	175	125	22	32	3	17	374
A	418	308	48	52	3	27	856
T	263	214	16	19	1	19	532
D	189	128	6	11	3	16	353
S	982	676	27	41	3	53	1,782
Rs	328	283	7	15	2	16	651
Ra	349	329	13	22	1	12	726
Rb	531	491	29	39	3	28	1,121
P	21	17	2	7	1	2	50
E	0	2	0	0	0	0	2
Total	3,261	2,580	171	241	21	190	6,464

w/d: well-differentiated adenocarcinoma, m/d: moderately differentiated adenocarcinoma, p/d: poorly differentiated adenocarcinoma, muc: mucinous carcinoma, sig: signet ring cell carcinoma.

NOS: not otherwise specified.

21-2 Other malignancies

Site	sq	as	ud	Basaloid	cd	Melanoma	Leiomyo- blastoma	Leiomyo- sarcoma	Malignant lymphoma	Others	Total
I	0	0	0	0	0	0	0	0	1	0	1
V	0	0	0	1	0	0	0	0	0	1	2
C	0	1	1	0	0	0	0	0	2	0	4
A	1	0	2	0	0	0	0	0	1	4	8
T	0	1	0	0	0	0	0	0	0	1	2
D	0	0	0	0	0	0	0	0	1	1	2
S	0	2	1	0	0	0	0	0	2	5	10
Rs	1	1	0	0	0	0	0	0	0	0	2
Ra	0	0	0	0	7	0	0	0	0	0	7
Rb	1	1	1	0	24	4	0	0	3	3	37
P	8	1	0	0	0	3	0	0	0	1	13
E	0	0	0	0	0	0	0	0	0	1	1
Total	11	7	5	1	31	7	0	0	10	17	89

sq: squamous cell carcinoma, as: adeno-squamous carcinoma, ud: undifferentiated carcinoma, basaloid: basaloid cell carcinoma, cd: carcinoïd.

22 Metastasis**adenocarcinoma, surgical cases****22-1 Liver**

Site	H0	H1	H2	H3	Unknown	Total
I	5	0	1	0	0	6
V	10	0	0	1	0	11
C	315	14	14	19	1	363
A	719	37	19	40	1	816
T	441	18	12	30	5	506
D	288	14	6	15	2	325
S	1,434	63	47	94	8	1,646
Rs	541	20	14	43	4	622
Ra	606	34	17	29	6	692
Rb	986	22	15	32	29	1084
P	40	3	1	1	5	50
E	1	0	0	0	1	2
Total	5,386	225	146	304	62	6,123

H0: No evidence of liver metastasis.

H1: Metastasis in one hepatic lobe only.

H2: A few scattered metastases in both lobes.

H3: Numerous metastases in both lobes.

22-2 Peritoneum

Site	P0	p+	P1	P2	P3	Unknown	Total
I	5	0	0	0	1	0	6
V	8	0	0	0	3	0	11
C	317	2	14	15	15	0	363
A	733	2	27	28	24	2	816
T	458	0	17	14	13	4	506
D	307	1	4	6	6	1	325
S	1,548	3	39	30	18	8	1,646
Rs	581	2	14	11	11	3	622
Ra	663	2	9	7	4	7	692
Rb	1,022	0	9	5	0	48	1,084
P	43	0	0	1	0	6	50
E	0	0	0	0	0	2	2
Total	5,685	12	133	117	95	81	6,123

P0: No evidence of peritoneal dissemination.

P1: Slight disseminations in the peritoneum adjacent to the primary lesion (It seemed to be resectable).

P2: Scattered disseminations in the peritoneum remote from the primary lesion. Dissemination limited to the major omentum or to ovary is classified as P2.

P3: Marked disseminations in the remote peritoneum.

22-3 Remote organs-1

Site	M(-)	M(+)	Unknown	Total
I	6	0	0	6
V	11	0	0	11
C	339	16	8	363
A	775	29	12	816
T	493	8	5	506
D	316	5	4	325
S	1,599	32	15	1,646
Rs	596	16	10	622
Ra	659	21	12	692
Rb	1,039	23	22	1,084
P	43	1	6	50
E	1	0	1	2
Total	5,877	151	95	6,123

M(-): No evidence of metastasis in remote organ(s) but liver and peritoneum.

M(+): Evidence of metastases in the remote organ(s).

22-4 Remote organs-2

Site	None	Lung	Bone	Ovary	Virchow	Brain	Adrenal	Skin	Others	Unknown	Total
I	6	0	0	0	0	0	0	0	0	0	6
V	11	0	0	0	0	0	0	0	0	0	11
C	339	11	1	1	0	1	0	0	2	8	363
A	775	18	2	3	2	0	0	0	4	12	816
T	493	7	0	0	1	0	0	0	0	5	506
D	316	5	0	0	0	0	0	0	0	4	325
S	1,599	24	1	3	2	0	0	0	2	15	1,646
Rs	596	15	0	0	0	0	0	0	1	10	622
Ra	659	14	1	1	1	1	0	0	3	12	692
Rb	1,039	18	2	1	1	0	0	1	0	22	1,084
P	43	1	0	0	0	0	0	0	0	6	50
E	1	0	0	0	0	0	0	0	0	1	2
Total	5,877	113	7	9	7	2	0	1	12	95	6,123

22-5 Lymph nodes, macroscopic

Site	N0	N1	N2	N3	N4	Nx	Total
I	2	1	2	0	1	0	6
V	5	2	2	1	0	1	11
C	118	109	81	34	12	9	363
A	292	254	181	49	32	8	816
T	189	152	78	49	22	16	506
D	149	118	38	5	8	7	325
S	798	480	234	53	57	24	1,646
Rs	271	229	78	12	21	11	622
Ra	327	212	90	33	14	16	692
Rb	520	287	158	32	24	63	1,084
P	26	7	7	2	2	6	50
E	0	0	0	0	0	2	2
Total	2,697	1,851	949	270	193	163	6,123

N0: No macroscopic evidence of lymph node metastasis.

N1: Macroscopic evidence of metastasis in group 1 lymph nodes.

N2: Macroscopic evidence of metastasis in group 2 lymph nodes.

N3: Macroscopic evidence of metastasis in group 3 lymph nodes.

N4: Macroscopic evidence of metastasis in group 4 lymph nodes.

Nx: Unknown or not assessed lymph node metastasis.

22-6 Lymph nodes, histological

Site	n0	n1	n2	n3	n4	nx	Total
I	3	1	0	1	1	0	6
V	5	3	1	1	0	1	11
C	200	76	43	23	5	16	363
A	462	183	92	39	18	22	816
T	292	103	48	26	14	23	506
D	209	70	28	3	5	10	325
S	1,005	362	172	34	23	50	1,646
Rs	358	165	62	4	12	21	622
Ra	375	173	83	21	12	28	692
Rb	553	211	162	28	21	109	1,084
P	22	5	9	4	1	9	50
E	0	0	0	0	0	2	2
Total	3,484	1,352	700	184	112	291	6,123

n0: No histological evidence of lymph node metastasis.

n1: Histological evidence of metastasis in group 1 lymph nodes.

n2: Histological evidence of metastasis in group 2 lymph nodes.

n3: Histological evidence of metastasis in group 3 lymph nodes.

n4: Histological evidence of metastasis in group 4 lymph nodes.

nx: Unknown or not assessed lymph node metastasis.

23 Depth of invasion**adenocarcinoma, surgical cases****23-1 Macroscopic**

Site	M	SM	PM	SS, A1	S, A2	Si, Ai	Unknown	Total
I	1	1	0	0	1	3	0	6
V	0	0	1	2	3	4	1	11
C	25	21	33	83	122	73	6	363
A	58	63	65	206	296	109	19	816
T	46	52	37	109	186	67	9	506
D	22	36	26	87	113	38	3	325
S	85	231	185	380	537	197	31	1,646
Rs	20	67	74	145	222	78	16	622
Ra	28	78	97	190	233	52	14	692
Rb	80	130	197	253	312	91	21	1,084
P	5	2	9	8	7	15	4	50
E	2	0	0	0	0	0	0	2
Total	372	681	724	1,463	2,032	727	124	6,123

M: Carcinoma is limited to within the mucosa.

SM: Carcinoma is limited to within the mucosa and submucosa.

PM: Carcinoma is limited to within the mucosa, submucosa and proper muscle.

SS: Carcinoma extended from the mucosa beyond the proper muscle but is not exposed on the serosal surface.

S: Carcinoma exposed on the serosal surface.

Si: Carcinoma definitely infiltrating other organs.

At the site without serosa

A1: Carcinoma extended beyond the proper muscle but does not penetrate deeper.

A2: Carcinoma extended beyond the proper muscle infiltrating deeper but without infiltrating other organs.

Ai: Carcinoma definitely infiltrating other organs.

23-2 Histological

Site	m	sm	pm	ss, a1	s, a2	si, ai	Unknown	Total
I	0	2	0	2	1	1	0	6
V	0	1	0	5	2	2	1	11
C	28	25	41	141	92	34	2	363
A	64	62	64	353	213	51	9	816
T	54	46	39	207	115	37	8	506
D	31	30	29	142	71	19	3	325
S	87	242	197	702	310	94	14	1,646
Rs	30	66	92	254	141	33	6	622
Ra	37	74	103	265	177	22	14	692
Rb	96	126	238	282	269	55	18	1,084
P	5	3	13	10	9	6	4	50
E	1	1	0	0	0	0	0	2
Total	433	678	816	2,363	1,400	354	79	6,123

Definition and classification of depth of invasion are equally applicable to histological findings.

Small letters i.e., m, sm, pm, ss(a1), s(a2) and si(ai) represent histological findings.

24 Surgical margin of the resected specimen adenocarcinoma, surgical cases**24-1 Distance of proximal (oral side) margin, macroscopic**

Site	OW				Unknown	Total
	<3cm	<5cm	<10cm	>10cm		
I	0	0	3	3	0	6
V	0	1	2	7	1	11
C	13	23	104	179	44	363
A	13	37	186	503	77	816
T	22	40	132	260	52	506
D	14	32	96	163	20	325
S	60	148	553	756	129	1,646
Rs	10	28	140	388	56	622
Ra	12	16	102	497	65	692
Rb	75	13	53	799	144	1,084
P	3	0	1	33	13	50
E	1	0	0	0	1	2
Total	223	338	1,372	3,588	602	6,123

24-2 Distance of distal (anal side) margin, macroscopic, colon

Site	AW			Unknown	Total
	<5cm	<10cm	>10cm		
I	1	3	2	0	6
V	1	1	8	1	11
C	27	62	233	41	363
A	67	186	497	66	816
T	77	156	228	45	506
D	48	86	171	20	325
S	436	652	439	119	1,646
Total	657	1,146	1,578	292	3,673

24-3 Distance of distal (anal side) margin, macroscopic, rectum

Site	AW				Unknown	Total
	<2cm	<3cm	<5cm	>5cm		
Rs	28	83	230	231	50	622
Ra	97	177	235	129	54	692
Rb	260	173	247	267	137	1,084
P	10	5	13	4	18	50
E	1	0	0	0	1	2
Total	396	438	725	631	260	2,450

24-4 Proximal and distal margin, colon

OW	AW				Total
	<5cm	<10cm	>10cm	Unknown	
<5cm	213	106	80	4	403
<10cm	225	457	393	1	1,076
>10cm	211	569	1,087	4	1,871
Unknown	8	14	18	283	323
Total	657	1,146	1,578	292	3,673

24-5 Proximal and distal margin, rectum

OW	AW				Total
	<2cm	<3cm	<5cm	>5cm	
<5cm	79	14	28	33	158
<10cm	50	70	103	69	296
>10cm	256	348	571	518	1,717
Unknown	11	6	23	11	279
Total	396	438	725	631	2,450

24-6 Cancer infiltration at the margin of resected bowel

Site	ow			aw			ew		
	-	+	Unknown	-	+	Unknown	-	+	Unknown
I	6	0	0	6	0	0	5	1	0
V	10	0	1	10	0	1	10	0	1
C	358	0	5	357	1	5	331	19	13
A	809	0	7	808	0	8	752	32	32
T	494	0	12	494	0	12	462	16	28
D	321	0	4	321	0	4	304	3	18
S	1,632	1	13	1,631	2	13	1,555	33	58
Rs	609	0	13	609	0	13	576	18	28
Ra	681	0	11	679	2	11	650	17	25
Rb	1,058	3	23	1,058	1	25	1,014	32	38
P	44	0	6	43	0	7	41	3	6
E	2	0	0	2	0	0	2	0	0
Total	6,024	4	95	6,018	6	99	5,702	174	247

OW: Distance between proximal (oral) edge of the tumor and surgical margin of the bowel.

AW: Distance between distal (anal) edge of the tumor and surgical margin of the bowel.

ow(+): The cancer cells are seen within 5 mm of the oral margin.

ow(-): No cancer cells within the 5 mm.

aw(+): The cancer cells are seen within 5 mm of the anal margin.

aw(-): No cancer cells within the 5 mm.

ew(+): The cancer is exposed at the external surgical surface.

ew(-): No exposure of cancer cells.

25 Lymphatic and venous vessel invasion**adenocarcinoma, surgical cases****25-1 Site**

Site	ly-	ly+	Unknown	v-	v+	Unknown
I	2	2	2	3	1	2
V	4	6	1	6	4	1
C	110	244	9	177	174	12
A	278	506	32	413	368	35
T	185	293	28	262	214	30
D	117	194	14	173	138	14
S	563	1,019	64	867	714	65
Rs	198	399	25	303	296	23
Ra	217	445	30	314	346	32
Rb	379	654	51	513	517	54
P	16	30	4	24	21	5
E	2	0	0	2	0	0
Total	2,071	3,792	260	3,057	2,793	273

25-2 Lymph node metastasis, colon

	n0			n+		
	ly-	ly+	Unknown	ly-	ly+	Unknown
v-	882	497	0	130	352	2
v+	169	546	4	47	800	4
Unknown	3	20	65	0	4	36
Total	1,054	1,063	69	177	1,156	42

25-3 Lymph node metastasis, rectum

	n0			n+		
	ly-	ly+	Unknown	ly-	ly+	Unknown
v-	490	259	2	82	233	2
v+	121	393	3	35	602	0
Unknown	2	5	33	0	3	16
Total	613	657	38	117	838	18

25-4 Liver metastasis**25-4-1 Negative venous invasion (v-)**

	H0	H1	H2	H3
ly-	1,613	33	15	22
ly+	348	19	13	2
Unknown	5	0	1	0
Total	1,966	52	29	24

25-4-2 Positive venous invasion (v+)

	H0	H1	H2	H3
ly-	1,262	51	45	10
ly+	1,932	249	206	12
Unknown	21	4	0	0
Total	3,215	304	251	22

25-4-3 Unknown venous invasion

	H0	H1	H2	H3
ly-	6	0	0	0
ly+	11	0	1	0
Unknown	188	15	23	16
Total	205	15	24	16

ly: Lymphatic vessel invasion, v: Venous vessel invasion.

26 Histological classification and Dukes' stage**adenocarcinoma, surgical cases****26-1 Colon** (excluding I and V)

	w/d	m/d	p/d	muc	sig	NOS	Total
Dukes A	640	204	5	7	1	30	887
Dukes B	569	460	31	52	3	11	1,126
Dukes C	386	445	44	51	7	11	944
Dukes D	182	272	29	36	2	4	525
Unknown	72	63	10	9	0	20	174
Total	1,849	1,444	119	155	13	76	3,656

26-2 Rectum (excluding P and E)

	w/d	m/d	p/d	muc	sig	NOS	Total
Dukes A	404	200	3	5	0	15	627
Dukes B	276	271	4	21	1	5	578
Dukes C	265	420	19	33	2	4	743
Dukes D	82	139	13	13	0	3	250
Unknown	104	70	10	4	3	9	200
Total	1,131	1,100	49	76	6	36	2,398

27 Accompanied lesions in the resected specimen**adenocarcinoma, surgical cases****27-1 By site of carcinoma**

Lesion	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	5	7	259	551	348	229	1,161	438	495	789	32	2	4,316
Adenoma	1	2	68	189	109	63	347	111	125	183	11	0	1,209
Adenomatosis	0	0	3	6	4	6	11	4	8	7	0	0	49
Hyperplastic polyp	0	1	9	32	17	13	39	25	26	41	0	0	203
Ulcerative colitis	0	0	0	1	0	0	2	0	1	1	0	0	5
Diverticulosis	0	0	6	3	5	3	23	6	6	9	2	0	63
Anal fistula	0	0	0	1	0	0	1	0	0	2	2	0	6
Radiation colitis	0	0	0	0	0	0	2	0	0	4	0	0	6
Crohn's disease	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	1	14	22	12	5	38	14	14	17	1	0	138
Unknown	0	1	11	19	17	6	36	27	19	39	3	0	178
Total	6	12	370	824	512	325	1,660	625	694	1,092	51	2	6,173

27-2 By number of carcinomas

Lesion	Number of carcinomas									Total
	1	2	3	4	5	6	7	>8	Unknown	
None	4,064	216	26	4	2	0	0	0	4	4,316
Adenoma	1,018	141	33	8	5	1	1	2	0	1,209
Adenomatosis	35	6	2	2	1	0	0	2	1	49
Hyperplastic polyp	179	20	2	1	1	0	0	0	0	203
Ulcerative colitis	4	1	0	0	0	0	0	0	0	5
Diverticulosis	55	5	3	0	0	0	0	0	0	63
Anal fistula	6	0	0	0	0	0	0	0	0	6
Radiation colitis	6	0	0	0	0	0	0	0	0	6
Crohn's disease	0	0	0	0	0	0	0	0	0	0
Others	119	14	4	0	0	0	0	1	0	138
Unknown	158	9	3	0	0	0	0	0	8	178
Total	5,644	412	73	15	9	1	1	5	13	6,173

28 Grades of operative procedures**adenocarcinoma, surgical cases**

Site	R0	R1	R2	R3	R4	Rx	Total
I	1	0	3	2	0	0	6
V	0	3	3	4	0	1	11
C	14	62	116	159	9	3	363
A	24	83	272	392	40	5	816
T	32	102	174	174	18	6	506
D	11	57	134	102	16	5	325
S	50	288	555	641	103	9	1,646
Rs	19	109	214	250	22	8	622
Ra	27	125	257	243	34	6	692
Rb	120	213	290	368	80	13	1,084
P	8	8	12	17	4	1	50
E	2	0	0	0	0	0	2
Total	308	1,050	2,030	2,352	326	57	6,123

R0: Incomplete dissection of Group 1 lymph nodes.

R1: Complete dissection of Group 1 lymph nodes.

R2: Complete dissection of Group 1 and 2 lymph nodes.

R3: Complete dissection of Group 1, 2 and 3 lymph nodes.

Rx: Assessment of grade of lymph nodes dissection are not met.

29 Evaluation of operative procedure**adenocarcinoma****29-1 Macroscopic, male**

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	2	1	0	0	0	0	3
V	4	0	0	1	1	0	6
C	107	17	5	37	1	1	168
A	291	37	16	83	2	1	430
T	184	38	13	44	6	2	287
D	150	13	7	28	3	3	204
S	721	63	45	154	2	5	990
Rs	291	29	12	66	5	4	407
Ra	318	34	20	66	4	1	443
Rb	510	75	19	70	12	11	697
P	12	1	2	8	1	0	24
E	0	0	0	0	0	0	0
Total	2,590	308	139	557	37	28	3,659

29-2 Macroscopic, female

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	1	0	1	1	0	0	3
V	3	1	0	1	0	0	5
C	119	29	7	38	1	1	195
A	264	33	16	65	4	4	386
T	143	23	13	38	2	0	219
D	90	12	5	13	0	1	121
S	493	31	34	89	4	5	656
Rs	164	9	6	31	2	3	215
Ra	186	23	7	27	5	1	249
Rb	297	39	10	32	3	6	387
P	20	0	1	2	0	3	26
E	2	0	0	0	0	0	2
Total	1,782	200	100	337	21	24	2,464

29-3 Histological, male

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	3	0	0	0	0	0	3
V	4	0	0	1	1	0	6
C	115	9	9	32	1	2	168
A	308	23	17	78	2	2	430
T	201	23	10	46	6	1	287
D	157	8	7	28	3	1	204
S	753	49	37	146	2	3	990
Rs	299	23	10	65	5	5	407
Ra	319	34	20	60	3	7	443
Rb	507	66	28	74	11	11	697
P	13	2	2	6	0	1	24
E	0	0	0	0	0	0	0
Total	2,679	237	140	536	34	33	3,659

29-4 Histological, female

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	1	0	1	1	0	0	3
V	3	1	0	1	0	0	5
C	132	19	8	35	1	0	195
A	272	29	16	59	4	6	386
T	155	14	14	34	2	0	219
D	94	8	5	14	0	0	121
S	498	34	26	90	4	4	656
Rs	157	12	9	31	2	4	215
Ra	180	18	14	28	5	4	249
Rb	283	41	16	38	3	6	387
P	18	3	1	1	0	3	26
E	1	1	0	0	0	0	2
Total	1,794	180	110	332	21	27	2,464

29-5 Endoscopic polypectomy cases

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0
C	10	0	0	0	0	0	10
A	37	1	0	0	0	1	39
T	24	1	0	0	0	0	25
D	25	2	0	0	0	1	28
S	113	21	0	0	0	2	136
Rs	23	5	0	0	0	1	29
Ra	24	5	0	0	0	3	32
Rb	26	9	0	0	0	0	36
P	0	0	0	1	0	0	0
E	0	0	0	0	0	0	0
total	282	44	0	0	0	8	335

Minimum requirements for 'curative resection' are as follows.

1. No metastasis in the liver, peritoneum or extra-abdominal organs.
2. No cancerous infiltration in the surgical margin of the resected specimen.

When the minimum requirements for curative resection are not met, the operation is classified as 'non-curative resection'. 'Absolute' and 'relative' categories are determined by the extent of lymph node dissection and assessment of the lymph node metastasis.

30 Operative method**adenocarcinoma, surgical cases**

	No. of cases		No. of cases
Nonresection		Right colectomy	1,107
Laparotomy only	38	Transversectomy	277
Enterostomy		Descending colectomy	140
ileum	13	Left colectomy	227
right colon	6	Sigmoidectomy	1,433
transverse colon	12	Subtotal colectomy	15
left colon	22	Total colectomy	9
unknown	1	Total colorectal resection	20
Intestinal by-pass	11	Sphincter-preserving operation	
Others	5	high anterior resection	388
Polypectomy		low anterior resection	1,217
trans-abdominal	9	posterior resection	8
trans-anal	33	invagination method	2
trans-sacral	9	pull-through procedure	2
trans-sphincteric	2	abdominosacral resection	13
Tumorectomy		Hartmann's operation	129
trans-abdominal	12	Amputation of the rectum	
trans-anal	28	abdominoperineal	607
trans-sacral	18	abdominosacral	16
trans-sphincteric	3	sacroabdominal	1
Appendectomy	0	Total pelvic exenteration	42
Ileocecal resection	137	Others	38
Ascending colectomy	71	Unknown	2
		Total	6,123

31 Combined resection of other organs**adenocarcinoma, surgical cases**

Combined resection	Colon	Rectum	Total
None	3,079	2,148	5,227
Abdominal wall	115	2	117
Pelvic wall	4	6	10
Uterus	20	50	70
Adnexa	48	35	83
Vagina	1	48	49
Seminal vesicle	2	41	43
Prostate	4	38	42
Bladder	73	62	135
Ureter	17	23	40
Stomach	23	5	28
Duodenum	17	0	17
Small intestine	69	14	83
Colon	37	10	47
Rectum	11	0	11
Liver	114	48	162
Omentum	45	6	51
Remote organs	4	4	8
Others	89	35	124
Unknown	54	34	88
Total	3,826	2,609	6,435

32 Operative mortality**surgical cases****32-1 Site**

	Adenocarcinoma			Other malignancies		
	No. of operations	Operative death	%	No. of operations	Operative death	%
I	6	0		1	0	
V	11	0		2	0	
C	363	2	0.6	4	0	
A	816	7	0.9	8	0	
T	506	8	1.6	2	0	
D	325	5	1.5	2	0	
S	1,646	18	1.1	9	1	11.1
Rs	622	4	0.6	2	0	
Ra	692	2	0.3	6	0	
Rb	1,084	7	0.6	35	0	
P	50	0		13	0	
E	2	0		1	0	
Total	6,123	53	0.9	85	1	1.2

32-2 Grades of operative procedures**adenocarcinoma**

		Curative resection		Non-curative resection		Not resected	Unknown	Total
		absolute	relative	relative	absolute			
Colon	No. of operation	2,696	217	150	565	26	19	3,673
	Operation death	18	4	4	15	0	1	40
	%	0.7	1.8	1.3	2.7		5.3	1.1
Rectum	No. of operation	1,777	200	100	303	29	41	2,450
	Operation death	6	2	0	5	0	0	13
	%	0.3	1.0		1.7			0.5

32-3 Grades of operative procedures**other malignancies**

		Curative resection		Non-curative resection		Not resected	Unknown	Total
		absolute	relative	relative	absolute			
Colon	No. of operation	20	2	1	4	0	1	28
	Operation death	1	0	0	0	0	0	1
	%	5.0						3.6
Rectum	No. of operation	18	21	2	8	2	6	57
	Operation death	0	0	0	0	0	0	0
	%							

32-4 Operative procedures				adenocarcinoma		
	No. of cases	No. of death	%	No. of cases	No. of death	%
Nonresection						
Laparotomy only	38	0		Right colectomy	1,107	15 1.4
Enterostomy				Transversectomy	277	0
ileum	13	0		Descending colectomy	140	2 1.4
right colon	6	0		Left colectomy	227	2 0.9
transverse colon	12	0		Sigmoidectomy	1,433	13 0.9
left colon	22	0		Subtotal colectomy	15	1 6.7
Unknown	1	0		Total colectomy	9	0
Intestinal by-pass	11	0		Total colorectal resection	20	1 5
Others	5	0		Sphincter-preserving operation		
Polypectomy				high anterior resection	388	1 0.3
trans-abdominal	9	0		low anterior resection	1,217	9 0.7
trans-anal	33	1 3		posterior resection	8	0 0
trans-sacral	9	0		invagination method	2	0
trans-sphincteric	2	0		pull-through procedure	2	0
Tumorectomy				abdominosacral resection	13	0
trans-abdominal	12	0		Hartmann's operation	129	5 3.9
trans-anal	28	0		Amputation of the rectum		
trans-sacral	18	0		abdominoperineal	607	2 0.3
trans-sphincteric	3	0		abdominosacral	16	0
Appendectomy	0	0		sacroabdominal	1	0
Ileocecal resection	137	0		Total pelvic exenteration	42	1 2.4
Ascending colectomy	71	0		Others	38	0
				Unknown	2	0
Total				6,123	53 0.9	

**Multi-Institutional Registry of Large Bowel Cancer
in Japan**

Vol.12-b
Cases treated in 1994
(Prospective Registry Data)

1 Patients registered

Number of registered patients by institutes

Institute	Department	No. of registered	No. of cases analyzed		
			Total	Male	Female
Aichi Cancer Center Hospital	Dpt Surg	153	152	89	63
Akita Red Cross Hospital	Dpt GE	98	95	54	41
Akita University School of Medicine	Dpt Surg I	38	37	19	18
Aomori Municipal Hospital	Dpt Surg	92	89	50	39
Chiba Cancer Center	Dpt Surg	80	80	50	30
Dokkyo University School of Medicine	Dpt Surg II	34	34	22	12
Dokkyo University School of Medicine	Dpt Surg I	25	25	13	12
Faculty of Medicine, Kagoshima University	Dpt Surg I	43	43	30	13
Faculty of Medicine, Kyushu University	Dpt Surg II	45	40	20	20
Faculty of Medicine, Mie University	Dpt Surg II	41	40	25	15
Faculty of Medicine, University of Tokyo	Dpt Surg I	63	62	44	18
Fujieda City Shida Hospital	Dpt Surg	44	41	26	15
Fujita Health University School of Medicine	Dpt Surg (Miura)	35	34	24	10
Fukui Prefectural Hospital	Dpt Surg	86	85	44	41
Fukuoka University, Tsukushi Hospital	Dpt Surg	101	100	60	40
Fukuoka University, Tsukushi Hospital	Dpt GI	16	15	9	6
Fukushima Medical College	Dpt Surg II	13	12	7	5
Gifu University School of Medicine	Dpt Surg II	41	41	20	21
Gihoku General Hospital	Dpt Surg	39	38	24	14
Gunma Cancer Center	Dpt Surg	60	59	34	25
Gunma University School of Medicine	Dpt Surg I	78	77	51	26
Hamamatsu University School of Medicine	Dpt Surg II	46	45	33	12
Hiraga General Hospital	Dpt Surg	59	57	31	26
Hirosaki University, School of Medicine	Dpt Surg II	53	51	30	21
Hiroshima University School of Medicine	Dpt Surg II	56	55	30	25
Hokkaido University, School of Medicine	Dpt Surg I	22	22	13	9
Hokuriku Central Hospital of the Mutual Aid					
Association of Public School Teachers	Dpt Surg	31	30	17	13
Iwakuni National Hospital	Dpt Surg	21	20	13	7
Iwate Medical University, School of Medicine	Dpt Surg I	57	55	36	19
Izushi Municipal Hospital		3	3	2	1
Jichi Medical School, School of Medicine	Dpt GI Gen Surg	43	43	29	14
Juntendo University, School of Medicine	Dpt Surg I	77	76	55	21
Kanagawa Cancer Center	Dpt Surg IV	91	90	56	34
Kanto Rosai Hospital		42	37	17	20
Kariya General Hospital.		61	60	38	22
Kasukabe City Hospital	Dpt Surg	28	27	15	12
Kawasaki City Ida Hospital	Dpt Surg	45	42	24	18
Kawasaki Medical School	Dpt GE Surg	69	68	41	27
Kinki University School of Medicine	Dpt Surg I	83	81	53	28
Kitakyushu Municipal Medical Center		118	115	66	49
Kobe National Hospital		44	42	19	23
Kobe University School of Medicine	Dpt Surg I	39	39	20	19
Kumamoto Municipal Hospital	Dpt Surg	71	68	35	33
Kumamoto University, School of Medicine	Dpt Surg II	34	33	25	8
Kurume University, School of Medicine	Dpt Surg I	86	80	48	32
Kyoto Prefectural University of Medicine	Dpt Surg II	35	34	20	14
Kyoto University, Faculty of Medicine	Dpt Surg I	57	56	36	20
Mito Kyodo General Hospital	Dpt Surg	43	40	29	11

Multi-Institutional Registry of Large Bowel Cancer

Institute	Department	No. of registered	No. of cases analyzed		
			Total	Male	Female
Mitsui Memorial Hospital	Dpt Surg	72	70	43	27
Nagasaki University, School of Medicine	Dpt Surg I	87	82	46	36
Nagoya University, School of Medicine	Dpt Surg II	30	30	19	11
Nara Medical University	Dpt Surg I	45	40	23	17
National Cancer Center Hospital	Dpt Surg	142	139	85	54
National Cancer Center Hospital East		25	25	16	9
National Defense Medical College	Dpt Surg I	150	149	88	61
National Kyushu Cancer Center	Dpt GE Surg	69	69	39	30
National Kyushu Medical Center Hospital		59	57	36	21
National Okura Hospital	Dpt Surg	33	31	17	14
National Sapporo Hospital Hokkaido Cancer Center	Dpt Surg	44	44	14	30
National Tohigi Hospital	Dpt Surg	10	10	6	4
Nihon University, School of Medicine	Dpt Surg II	51	46	23	23
Niigata University, School of Medicine	Dpt Surg I	33	33	19	14
Nippon Medical School	Dpt Surg I	104	103	64	39
Nogaki Hospital	Dpt Surg	70	67	46	21
Oita Medical University	Dpt Surg I	38	36	25	11
Okayama 1st Red Cross Hospital	Dpt Surg	59	59	40	19
Okayama University, Medical School	Dpt Surg II	13	13	9	4
Oomoto Hospital		71	65	31	34
Osaka City University Medical School	Dpt Surg I	79	79	44	35
Osaka National Hospital	Dpt Surg	192	189	120	69
Osaka Prefectural Hospital	Dpt Surg	102	100	42	58
Osaka Teishin Hospital	Dpt Surg	60	59	33	26
Osaka University Medical School	Dpt Surg II	50	46	23	23
Red Cross Ashikaga Hospital	Dpt Surg	34	34	16	18
Red Cross Sendai Hospital	Dpt Surg	107	103	58	45
Research Institute for Nuclear Medicine and Biology, Hiroshima University	Dpt Surg	18	18	10	8
Saga Prefectural Hospital, Koseikan		93	91	41	50
Saitama Medical Center	Dpt Surg II	30	29	19	10
Saitama Medical School	Dpt Surg I	40	39	29	10
Saitama Medical School	Dpt Surg II	38	37	21	16
Sapporo Social Insurance General Hospital		29	28	14	14
Sapporo-Kosei General Hospital	Dpt Surg	107	106	64	42
Sasebo Municipal General Hospital	Dpt Surg	113	110	65	45
School of Medicine, Chiba University	Dpt Surg I	78	71	39	32
School of Medicine, Kanazawa University	Dpt Surg I	8	8	4	4
School of Medicine, Kitasato University	Dpt Surg	35	31	20	11
School of Medicine, Kitasato University, East Hospital	Dpt Surg	78	77	48	29
School of Medicine, Tokai University	Dpt Surg II	53	51	34	17
Sendai Medical Center Open Hospital		225	214	136	78
Sendai National Hospital	Dpt Surg	48	48	28	20
Shiga University of Medical Science	Dpt Surg I	40	40	18	22
Shimada Municipal Hospital	Dpt Surg	59	55	36	19
Showa University School of Medicine, Toyosu Hospital	Dpt Surg	34	33	19	14

Institute	Department	No. of registered	No. of cases analyzed		
			Total	Male	Female
Social Insurance Ritsurin Hospital		18	18	12	6
St. Marianna University School of Medicine	Dpt Surg I	33	33	20	13
St. Marianna University School of Medicine	Dpt Surg II	18	18	12	6
Takano Hospital Coloproctology Center		150	146	91	55
Teikyo University Hospital at Mizonokuchi	Dpt Surg	38	38	27	11
Teikyo University School of Medicine	Dpt Surg II	55	55	41	14
Teikyo University School of Medicine	Dpt Surg I	42	42	29	13
The 2nd Tokyo National Hospital	Dpt Surg	68	67	34	33
The Institute of Medical Science, The University of Tokyo		12	12	8	4
The Jikei University School of Medicine, Third Hospital	Dpt Surg	51	47	25	22
Tochigi Cancer Center		73	73	47	26
Toho University School of Medicine	Dpt Surg I	62	62	41	21
Tohoku University, School of Medicine	Dpt Surg I	43	42	30	12
Tokyo Kyosai Hospital		174	169	118	51
Tokyo Medical and Dental University, School of Medicine	Dpt Surg I	25	25	20	5
Tokyo Medical and Dental University, School of Medicine	Dpt Surg II	38	38	23	15
Tokyo Metropolitan Cancer Detection Center		9	9	6	3
Tokyo Metropolitan Komagome Hospital	Dpt Surg	138	138	78	60
Tokyo Women's Medical College	Dpt Surg II	110	109	84	25
Tokyo Women's Medical College, Second Hospital	Dpt Surg	81	80	47	33
Toranomon Hospital	Dpt GI Surg	204	194	126	68
Tottori University, Faculty of Medicine	Dpt Surg I	62	58	33	25
Uwajima City Hospital	Dpt Surg	61	58	27	31
Wakayama Medical College	Dpt GI Surg	25	25	16	9
Yaizu Municipal Hospital	Dpt Surg	56	55	38	17
Yamagata Prefectural Central Hospital	Dpt Surg	137	137	80	57
Yamagata University, School of Medicine	Dpt Surg I	33	33	26	7
Yamanashi Medical University	Dpt Surg I	37	35	20	15
Yokohama City University, School of Medicine	Dpt Surg II	116	115	77	38
Total		7563	7363	4452	2911

Cases with an omission of following terms were excluded from analysis.

- 1) Histological features
- 2) Date of birth
- 3) Date of treatment
- 4) Sex
- 5) Location of tumor

Abbreviation

Dpt: department, Surg: surgery, GI: gastrointestinal, GE: gastroenterological, IM: internal medicine, Gen.: general

2 Patients analyzed

2-1 Site and sex

Histological type	Site	Total No.	Sex	
			Male	Female
Adenocarcinoma ^{a)}	Colon	4,387	2,574	1,813
	Rectum	2,882	1,828	1,054
Other malignancies ^{b)}	Colon	34	18	16
	Rectum	60	31	29
Total		7,363	4,451	2,912

a): well-, moderately and poorly differentiated adenocarcinoma, mucinous carcinoma and signet-ring cell carcinoma.

b): carcinomas other than adenocarcinoma and non-epithelial malignant neoplasms.

2-2 Site and surgical treatment

Histological type	Site	Surgery ^{a)}			Total
		Yes		No	
Adenocarcinoma	Colon	4,381	[302] ^{b)}	6	4,387
	Rectum	2,877	[125]	5	2,882
	Total	7,258	[427]	11	7,269
Other malignancies	Colon	33	[1]	1	34
	Rectum	58	[11]	2	60
	Total	91	[12]	3	94
Total		7,349	[439]	14	7,363

a): Includes cryosurgery and electric cautery therapy.

b): The figures in parentheses represent the number of patients treated solely by endoscopic polypectomy, and those are included in the number in the left column.

3 Age incidence

all cases

3-1 Male by site

Site	Age									Total
	≤ 9	≤ 19	≤ 29	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
I	0	0	0	1	0	3	2	1	0	7
V	0	0	0	0	1	0	3	3	0	7
C	0	0	1	2	20	50	76	62	19	230
A	0	0	2	7	36	103	161	138	44	491
T	0	0	2	1	23	73	150	102	36	387
D	0	0	2	4	21	56	67	56	10	216
S	1	0	3	18	107	302	508	247	68	1,254
Rs	0	0	1	7	46	138	173	88	34	487
Ra	0	0	0	6	53	151	196	100	30	536
Rb	0	0	5	14	104	217	271	156	38	805
P	0	0	0	2	3	7	11	7	1	31
E	0	0	0	0	0	0	0	0	0	0
Total	1	0	16	62	414	1,100	1,618	960	280	4,451

3-2 Female by site

Site	Age									Total
	≤ 9	≤ 19	≤ 29	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
I	0	0	0	0	0	0	2	0	0	2
V	0	0	1	0	1	1	2	1	0	6
C	0	0	0	2	10	35	72	87	23	229
A	0	0	2	6	18	82	113	151	49	421
T	0	0	2	5	17	45	67	70	32	238
D	0	1	0	3	19	24	39	28	18	132
S	0	1	4	22	85	187	260	176	66	801
Rs	0	0	1	8	31	82	110	72	18	322
Ra	0	0	1	7	27	84	117	61	26	323
Rb	0	0	3	12	38	99	135	77	30	394
P	0	1	0	0	3	8	11	11	5	39
E	0	0	0	0	0	1	2	0	2	5
Total	0	3	14	65	249	648	930	734	269	2,912

I: ileum, V: vermiform process, C: caecum, A: ascending colon, T: transverse colon, D: descending colon, S: sigmoid colon, Rs: rectosigmoid, Ra: rectum above the peritoneal reflection, Rb: rectum below the peritoneal reflection, P: proctos, E: external skin.

Refer to "The General Rules for Clinical and Pathological Studies on Cancer of the Colon, Rectum and Anus" by Japanese Society for Cancer of the Colon and Rectum (JSCCR) on terminology and classification used in this report.

Japanese Journal of Surgery 13: 557-573, 1983

4 Occupation

adenocarcinoma

4-1 Site and sex

Occupation	Colon		Rectum		Total
	Male	Female	Male	Female	
None	826	1,169	457	652	3,104
Agriculture	84	37	102	36	259
Fishery	39	2	43	3	87
Industry	110	25	104	12	251
Physical labor	6	6	5	8	25
Office worker	471	94	372	51	988
Specialist	137	44	99	26	306
Administrative	167	107	149	68	491
Other service industry	133	12	81	7	233
Unknown	601	317	416	191	1,525
Total	2,574	1,813	1,828	1,054	7,269

4-2 Age distribution, colon, male

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	4	8	38	304	346	126	826
Agriculture	1	0	9	51	22	1	84
Fishery	1	7	19	11	1	0	39
Industry	3	11	41	36	18	1	110
Physical labor	0	0	2	2	2	0	6
Office worker	17	87	199	136	27	5	471
Specialist	2	12	43	53	22	5	137
Administrative	5	17	43	81	19	2	167
Other service industry	2	7	27	60	28	9	133
Unknown	5	58	161	229	122	26	601
Total	40	207	582	963	607	175	2,574

4-3 Age distribution, colon, female

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	29	77	175	342	391	155	1,169
Agriculture	0	0	8	17	12	0	37
Fishery	0	1	0	1	0	0	2
Industry	0	2	12	8	2	1	25
Physical labor	0	0	3	2	1	0	6
Office worker	7	17	42	22	5	1	94
Specialist	6	6	12	11	7	2	44
Administrative	3	14	43	31	15	1	107
Other service industry	0	0	5	5	1	1	12
Unknown	3	31	68	114	74	27	317
Total	48	148	368	553	508	188	1,813

4-4 Age distribution, rectum, male

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	2	3	33	163	183	73	457
Agriculture	0	4	9	58	28	3	102
Fishery	1	4	24	14	0	0	43
Industry	2	13	41	42	6	0	104
Physical labor	0	0	3	0	2	0	5
Office worker	12	73	167	98	22	0	372
Specialist	3	23	22	34	16	1	99
Administrative	0	22	55	53	16	3	149
Other service industry	0	6	22	39	12	2	81
Unknown	11	49	127	144	64	21	416
Total	31	197	503	645	349	103	1,828

4-5 Age distribution, rectum, female

Occupation	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	16	55	124	231	163	63	652
Agriculture	1	4	10	14	4	3	36
Fishery	0	2	0	1	0	0	3
Industry	1	3	5	2	1	0	12
Physical labor	0	1	3	4	0	0	8
Office worker	2	6	29	12	1	1	51
Specialist	3	5	11	6	1	0	26
Administrative	4	9	25	23	5	2	68
Other service industry	0	1	2	3	1	0	7
Unknown	5	12	53	68	42	11	191
Total	32	98	262	364	218	80	1,054

5 Family history of cancers

adenocarcinoma

5-1 Family history of colorectal cancer

Site	Family history of colorectal cancer			Total
	No	Yes	Unknown	
I	5	0	0	5
V	5	3	3	11
C	367	48	39	454
A	724	85	94	903
T	515	53	54	622
D	283	27	33	343
S	1,698	171	180	2,049
Rs	673	65	71	809
Ra	699	71	85	855
Rb	975	86	101	1,162
P	47	3	5	55
E	1	0	0	1
Total	5,992	612	665	7,269

5-2 Family history of other cancers

Site	Family history of other cancers			Total
	No	Yes	Unknown	
I	3	2	0	5
V	5	3	3	11
C	299	110	45	454
A	556	252	95	903
T	405	162	55	622
D	220	89	34	343
S	1,328	541	180	2,049
Rs	537	205	67	809
Ra	544	225	86	855
Rb	771	287	104	1,162
P	34	18	3	55
E	1	0	0	1
Total	4,703	1,894	672	7,269

5-3 Age distribution, colon

		Family history(FH) of colorectal cancer								
		No			Yes			Unknown (?)		
FH of other cancers		No	Yes	?	No	Yes	?	No	Yes	?
Age	≤ 39	55	15	1	7	5	2	0	0	3
	≤ 49	206	86	1	25	8	6	1	2	20
	≤ 59	575	210	4	44	45	0	4	10	58
	≤ 69	865	354	11	81	54	5	0	11	135
	≤ 79	665	243	15	55	31	2	0	8	96
	≥ 80	227	64	0	6	10	1	0	3	52
Total		2,593	972	32	218	153	16	5	34	364

5-4 Age distribution, rectum

		Family history(FH) of colorectal cancer								
		No			Yes			Unknown (?)		
FH of other cancers		No	Yes	?	No	Yes	?	No	Yes	?
Age	≤ 39	43	7	1	9	0	1	0	0	2
	≤ 49	176	73	1	13	10	1	0	1	20
	≤ 59	462	158	4	49	27	3	1	4	57
	≤ 69	612	221	9	35	27	2	2	16	85
	≤ 79	353	126	3	21	14	2	1	4	43
	≥ 80	104	40	2	6	5	0	0	2	24
Total		1,750	625	20	133	83	9	4	27	231

6 Past history

adenocarcinoma

6-1 Diseases of the colon, rectum and anus, by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	2	8	285	578	389	221	1,327	575	591	798	31	1	4,806
Adenoma	0	0	34	89	70	35	169	57	46	74	2	0	576
Adenomatosis	0	0	3	2	3	1	8	3	2	2	0	0	24
Ulcerative colitis	0	0	0	1	0	0	3	1	0	0	0	0	5
Crohn's disease	1	0	0	0	0	0	0	0	0	0	0	0	1
Anal fistula	0	0	3	7	3	4	29	7	6	19	6	0	84
Radiation colitis	0	0	0	0	1	0	3	1	1	1	0	0	7
Diverticulosis	1	1	5	5	3	3	18	3	6	5	0	0	50
Hemorrhoid	0	0	28	41	28	19	144	52	60	86	7	0	465
Appendicitis	1	1	76	132	94	47	281	97	112	139	7	0	987
Others	0	1	11	22	23	7	27	5	10	15	1	0	122
Unknown	0	0	9	26	8	6	40	8	21	23	1	0	142
Total	5	11	454	903	622	343	2,049	809	855	1,162	55	1	7,269

6-2 Diseases of the colon, rectum and anus, by age, male

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	≥ 80	
None	49	275	676	987	579	196	2,762
Adenoma	6	32	104	171	92	18	423
Adenomatosis	2	0	1	10	2	1	16
Ulcerative colitis	0	0	1	0	0	0	1
Crohn's disease	0	0	1	0	0	0	1
Anal fistula	1	7	17	29	14	3	71
Radiation colitis	0	0	0	1	0	0	1
Diverticulosis	2	3	7	12	10	3	37
Hemorrhoid	1	29	92	125	78	18	343
Appendicitis	8	50	155	211	136	25	585
Others	0	1	16	31	20	7	75
Unknown	2	7	15	31	25	7	87
Total	71	404	1,085	1,608	956	278	4,402

6-3 Diseases of the colon, rectum and anus, by age, female

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	≥ 80	
None	62	172	424	644	528	214	2,044
Adenoma	1	15	38	48	42	9	153
Adenomatosis	1	2	2	1	2	0	8
Ulcerative colitis	0	1	2	1	0	0	4
Crohn's disease	0	0	0	0	0	0	0
Anal fistula	0	1	4	5	3	0	13
Radiation colitis	0	0	0	3	3	0	6
Diverticulosis	0	0	2	4	6	1	13
Hemorrhoid	2	13	28	34	34	11	122
Appendicitis	11	36	110	144	79	22	402
Others	1	2	8	14	19	3	47
Unknown	2	4	12	19	10	8	55
Total	80	246	630	917	726	268	2,867

6-4 Diseases of other digestive organs, by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	4	9	334	660	442	252	1,539	627	647	890	44	1	5,449
Gall stone ope(-)	0	0	14	31	14	6	48	17	17	20	1	0	168
Gall stone ope(+)	0	0	18	32	24	13	63	29	32	31	1	0	243
Pancreatitis	0	0	3	5	4	2	8	3	3	2	0	0	30
Hepatitis	0	0	12	22	18	14	60	21	21	30	2	0	200
Peptic ulcer ope(-)	0	2	27	54	46	22	160	49	60	69	3	0	492
Peptic ulcer ope(+)	0	0	11	19	18	11	43	15	17	37	1	0	172
Others	0	0	23	50	37	17	67	28	40	60	1	0	323
Unknown	1	0	12	30	19	6	61	20	18	23	2	0	192
Total	5	11	454	903	622	343	2,049	809	855	1,162	55	1	7,269

6-5 Diseases of other digestive organs, by age, male

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	61	314	820	1,144	673	193	3,205
Gall stone ope(-)	0	4	16	27	20	7	74
Gall stone ope(+)	1	3	20	52	39	18	133
Pancreatitis	0	2	6	7	2	1	18
Hepatitis	1	17	39	55	23	3	138
Peptic ulcer ope(-)	2	32	94	142	80	23	373
Peptic ulcer ope(+)	0	7	25	61	40	12	145
Others	4	15	42	85	43	12	201
Unknown	2	10	23	35	36	9	115
Total	71	404	1,085	1,608	956	278	4,402

6-6 Diseases of other digestive organs, by age, female

	Age						Total
	≤ 39	≤ 49	≤ 59	≤ 69	≤ 79	80≥	
None	71	210	504	699	550	210	2,244
Gall stone ope(-)	1	3	12	30	34	14	94
Gall stone ope(+)	0	2	15	39	43	11	110
Pancreatitis	1	1	1	5	2	2	12
Hepatitis	1	4	11	27	16	3	62
Peptic ulcer ope(-)	2	12	29	41	24	11	119
Peptic ulcer ope(+)	0	1	2	11	10	3	27
Others	2	5	29	43	36	7	122
Unknown	2	8	27	22	11	7	77
Total	80	246	630	917	726	268	2,867

7 Symptom (multi-answer)

adenocarcinoma

7-1 Site

Symptom	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	1	1	96	218	171	88	473	157	126	155	3	0	1,489
Anal bleeding	1	2	67	136	101	73	753	400	468	720	31	0	2,752
Mucous discharge	0	0	3	4	4	3	26	12	14	16	3	0	85
Constipation	0	0	30	64	40	26	217	105	110	117	6	0	715
Diarrhea	0	0	16	37	16	17	122	52	60	56	2	0	378
Tenesmus	0	0	1	5	2	1	28	11	19	39	1	0	107
Narrowed stool	0	0	4	12	5	11	81	51	55	76	2	0	297
Anal tumor	0	1	0	0	0	0	1	1	2	15	6	0	26
Anal pain	0	0	1	2	2	3	26	9	17	60	10	1	131
Nausea, vomiting	0	0	19	26	14	15	33	12	3	1	0	0	123
Ileus	1	0	18	40	32	27	82	14	13	4	0	0	231
Abdominal distension	1	0	21	48	37	28	105	35	24	21	0	0	320
Abdominal pain	3	5	141	246	131	69	281	74	52	50	1	0	1,053
Abdominal mass	1	2	36	29	26	9	17	3	1	2	0	0	126
Anemia	0	0	62	120	64	15	71	19	18	20	1	0	390
Weight loss	0	0	8	26	17	10	27	8	10	19	0	0	125
Total	8	11	523	1,013	662	395	2,343	963	992	1,371	66	1	8,348

7-2 Duration of symptom, by site

Site	Duration of symptom								Total
	None	<1m	<3m	<6m	<1y	<2y	>2y	Unknown	
I	0	2	0	0	0	0	0	3	5
V	0	8	2	0	1	0	0	0	11
C	87	100	141	70	25	9	6	16	454
A	211	183	245	122	62	18	11	51	903
T	142	131	166	93	36	8	10	36	622
D	78	90	91	42	22	5	4	11	343
S	431	461	545	318	127	40	42	85	2,049
Rs	124	165	263	125	60	20	18	34	809
Ra	108	170	265	134	94	30	15	39	855
Rb	146	234	314	211	138	40	29	50	1,162
P	2	6	17	8	12	6	1	3	55
E	0	0	1	0	0	0	0	0	1
Total	1,329	1,550	2,050	1,123	577	176	136	328	7,269

7-3 Duration of symptom

Symptom	Duration of symptom							Unknown	Total
	None	<1m	<3m	<6m	<1y	<2y	>2y		
None	1,489								1,489
Anal bleeding	89	651	939	496	308	99	79	91	2,752
Mucous discharge	4	22	23	21	9	4	1	1	85
Constipation	13	126	231	184	96	20	19	26	715
Diarrhea	8	69	128	109	35	9	9	11	378
Tenesmus	0	24	27	38	9	5	2	2	107
Narrowed stool	0	42	101	85	40	15	5	9	297
Anal tumor	2	5	5	4	6	2	1	1	26
Anal pain	1	35	40	19	16	7	9	4	131
Nausea, vomiting	2	41	48	22	5	1	2	2	123
Ileus	7	103	70	27	14	2	0	8	231
Abdominal distension	5	77	121	64	29	6	7	11	320
Abdominal pain	32	303	370	195	87	24	17	25	1,053
Abdominal mass	4	33	47	21	14	2	1	4	126
Anemia	29	83	121	83	33	12	7	22	390
Weight loss	3	13	50	27	23	6	1	2	125
Total	1,688	1,627	2,321	1,395	724	214	160	219	8,348

8 Serum carcinoembryonic antigen (CEA)

8-1 Measurement

Methods	
Not examined	438
Z-gel	1,819
Sandwich	3,105
CIS	1,626
Others	281
Total	7,269

adenocarcinoma

8-2 Serum CEA value

CEA value(ng/ml)	
<2.5	2,764
<5	1,460
<10	838
<30	659
<50	183
≥ 50	398
Unknown	248
Total	6,550

(Z-gel, Sandwich and CIS)

9 Multiple primary cancers

adenocarcinoma

9-1 Synchronous, by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
Colon & rectum			24	71	68	35	166	46	46	67	3		526
Head & neck				2	1	2	2		1				8
Chest wall							1						1
Breast			1				3		1	4			9
Lung & bronchus				3	1	2	3	1	3	1			14
Mediastinum													0
Esophagus					1		5	1	1	5			13
Stomach		1	13	17	16	8	35	7	11	21	1		130
Small intestine								2					2
Liver			2	2	2		4	2	2	1			15
Biliary tract				1	3		4	2		2			12
Pancreas							1						1
Cervix uteri					1		1			1			3
Corpus uteri					1	1							2
Uterus NOS ^{a)}							1	1	1				3
Adnexa			2	1	2		3						8
Vagina													0
Prostate				1	1	1	1	1	2	1	1		9
Testis													0
Bladder			1		1		4		2	2			10
Kidney				3	2		2		2	3			12
Skin					2		1			1			4
Bone													0
Soft tissue			1										1
Hematopoietic & RE ^{b)} system			1	2	1		3	2	1	1			11
Unknown site													0

9-2 Metachronous,by site

	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
Colon & rectum			10	45	36	16	24	9	13	15	1		169
Head & neck			2	2	6	1	19	4	3	3	1		41
Chest wall													0
Breast			6	8	4	2	20	8	7	4			59
Lung & bronchus			1	5	1		8	2	3				20
Mediastinum													0
Esophagus					2	1	2	1	1	1			8
Stomach	I	x	11	18	17	8	38	10	12	22	4		141
Small intestine							1						1
Liver				4	1		3		1				9
Biliary tract				2	2	1	2	2					9
Pancreas						1							1
Cervix uteri			1	1	2		1		2	1			8
Corpus uteri			2		1	1	2						6
Uterus NOS ^{a)}				11	3		10	3	2	5	1	1	36
Adnexa			1	1	1	1	3	2	2				11
Vagina			1				1						2
Prostate				3	2		4	3	3	1			16
Testis										1			1
Bladder					2		8	1	4	1			16
Kidney							4			2			6
Skin				1			2		1				4
Bone													0
Soft tissue													0
Hematopoietic & RE ^{b)} system							5						5
Unknown site										1			1

a)NOS: not otherwise specified, b)RE:reticuloendothelial.

10 Multiple colorectal carcinomas

adenocarcinoma

10a Macroscopic

10a-1 Number of cancers

Number of tumors									Total
1	2	3	4	5	6	7	>8	Unknown	
6,780	393	59	17	6	3	1	4	6	7,269

10a-2 Male, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	66	2	1	0	0	0	0	1	1	71
≤ 49	386	16	2	0	0	0	0	0	0	404
≤ 59	1,019	53	8	2	0	2	0	0	1	1,085
≤ 69	1,470	108	18	7	2	0	0	2	1	1,608
≤ 79	874	67	9	2	0	1	0	1	2	956
80≥	259	14	4	0	1	0	0	0	0	278
Total	4,074	260	42	11	3	3	0	4	5	4,402

10a-3 Female, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	75	4	0	0	1	0	0	0	0	80
≤ 49	236	7	1	2	0	0	0	0	0	246
≤ 59	593	29	6	1	0	0	1	0	0	630
≤ 69	856	50	7	2	1	0	0	0	1	917
≤ 79	692	31	2	0	1	0	0	0	0	726
80≥	254	12	1	1	0	0	0	0	0	268
Total	2,706	133	17	6	3	0	1	0	1	2,867

10a-4 Male and female, by site

Site	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
I	5	0	0	0	0	0	0	0	0	5
V	11	0	0	0	0	0	0	0	0	11
C	429	22	1	0	2	0	0	0	0	454
A	839	47	10	3	2	1	1	0	0	903
T	555	48	12	6	0	0	0	1	0	622
D	309	29	3	1	0	0	0	1	0	343
S	1,903	120	17	4	0	1	0	2	2	2,049
Rs	769	32	6	1	0	1	0	0	0	809
Ra	812	38	4	0	0	0	0	0	1	855
Rb	1,095	55	6	2	2	0	0	0	2	1,162
P	52	2	0	0	0	0	0	0	1	55
E	1	0	0	0	0	0	0	0	0	1
Total	6,780	393	59	17	6	3	1	4	6	7,269

10b Histological**10b-1 Number of cancers**

Number of tumors									Total
1	2	3	4	5	6	7	>8	Unknown	
6,726	420	63	22	10	4	1	6	17	7,269

10b-2 Male, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	64	5	1	0	0	0	0	1	0	71
≤ 49	385	13	2	1	0	0	0	1	2	404
≤ 59	1,017	52	9	4	0	2	0	0	1	1,085
≤ 69	1,459	115	21	5	3	0	0	3	2	1,608
≤ 79	860	76	10	4	1	1	0	1	3	956
80≥	254	15	4	0	2	0	0	0	3	278
Total	4,039	276	47	14	6	3	0	6	11	4,402

10b-3 Female, by age

Age	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
≤ 39	74	4	0	0	2	0	0	0	0	80
≤ 49	232	11	0	2	1	0	0	0	0	246
≤ 59	585	33	6	1	0	1	1	0	3	630
≤ 69	853	52	7	2	1	0	0	0	2	917
≤ 79	693	29	2	2	0	0	0	0	0	726
80≥	250	15	1	1	0	0	0	0	1	268
Total	2,687	144	16	8	4	1	1	0	6	2,867

10b-4 Male and female, by site

Site	Number of tumors									Total
	1	2	3	4	5	6	7	>8	Unknown	
I	5	0	0	0	0	0	0	0	0	5
V	11	0	0	0	0	0	0	0	0	11
C	430	21	1	1	1	0	0	0	0	454
A	831	51	10	3	4	2	1	0	1	903
T	552	47	12	7	1	0	0	1	2	622
D	308	29	3	2	0	0	0	1	0	343
S	1,877	137	19	6	1	1	0	2	6	2,049
Rs	762	36	6	2	0	1	0	1	1	809
Ra	804	41	5	0	0	0	0	0	5	855
Rb	1,094	55	7	1	3	0	0	1	1	1,162
P	51	3	0	0	0	0	0	0	1	55
E	1	0	0	0	0	0	0	0	0	1
Total	6,726	420	63	22	10	4	1	6	17	7,269

11 Modality of principal treatment ^{a)}

Modality	Adenocarcinoma		Other malignancies	
	Colon	Rectum	Colon	Rectum
No definitive treatment	6	6	1	1
Endoscopic polypectomy	302	125	1	11
Surgery	4,071	2,738	32	47
Cryosurgery	0	0	0	0
Electric cauter therapy	0	0	0	0
Radiation	1	6	0	0
Chemotherapy	5	6	0	1
Other modalities	2	1	0	0
Total	4,387	2,882	34	60

a): modalities regarded as the most effective and beneficial treatment for cancer.

12 Additional or adjuvant treatment**adenocarcinoma**

Treatment	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	3	3	214	448	320	177	1,048	369	377	520	23	0	3,502
Radiation													
preoperative	0	0	0	0	0	0	2	1	6	50	4	0	63
intraoperative	0	0	0	0	0	0	0	0	0	0	0	0	0
postoperative	0	0	1	4	2	0	4	4	6	29	2	0	52
pre- and postoperative	0	0	0	0	0	1	0	1	0	3	2	0	7
Chemotherapy													
preoperative	0	0	7	4	5	1	7	9	6	9	1	0	49
postoperative	2	7	196	389	249	142	822	365	382	450	16	1	3,021
pre- and postoperative	0	1	14	19	16	10	56	23	44	35	2	0	220
Others	0	0	5	10	6	2	31	11	8	12	1	0	86
Unknown	0	0	17	29	24	10	79	26	26	54	4	0	269
Total	5	11	454	903	622	343	2,049	809	855	1,162	55	1	7,269

13 Previous surgical treatment**adenocarcinoma**

None	6,651
Enterostomy	64
Polypectomy	296
Others	56
Unknown	202
Total	7,269

14 Reasons for non-surgical treatment**adenocarcinoma**

Reasons for non-surgical treatment	
Unresectable disease	19
Physical condition impeding surgery	1
Refusal	2
Others reasons	3
Total	25

15 Gross appearance of the primary lesion

15-1 Adenocarcinoma

Site	Superficial	Protruding	Localized ulcerating	Infiltrating ulcerating	Diffuse infiltrating	Unclassified	Unknown	Total
I	2	1	2	0	0	0	0	5
V	1	0	3	2	0	2	3	11
C	83	66	221	68	2	5	9	454
A	166	90	517	109	1	8	12	903
T	148	53	336	61	4	6	14	622
D	90	33	179	34	0	5	2	343
S	546	188	1,101	149	8	18	39	2,049
Rs	143	101	468	75	2	8	12	809
Ra	156	69	522	76	11	9	12	855
Rb	262	101	632	120	9	13	25	1,162
P	8	4	23	12	3	2	3	55
E	0	0	1	0	0	0	0	1
Total	1,605	706	4,005	706	40	76	131	7,269

15-2 Other malignancies

Site	Superficial	Protruding	Localized ulcerating	Infiltrating ulcerating	Diffuse infiltrating	Unclassified	Unknown	Total
I	0	1	2	1	0	0	0	4
V	0	0	1	0	0	0	1	2
C	0	1	3	1	0	0	0	5
A	0	4	3	0	0	0	2	9
T	1	0	1	1	0	0	0	3
D	1	1	1	1	0	1	0	5
S	4	1	0	1	0	0	0	6
Rs	0	0	0	0	0	0	0	0
Ra	2	0	1	0	0	1	0	4
Rb	22	6	5	0	0	1	3	37
P	3	3	3	3	0	2	1	15
E	1	2	0	1	0	0	0	4
Total	34	19	20	9	0	5	7	94

Refer to the general rules of “JSCCR” for details of the classification.

16 Gross appearance, modificatory subtypes**adenocarcinoma**

Site	None	Stricture	Mucinous	Schirrous	Villous	Others	Unknown	Total
I	4	0	0	0	0	0	1	5
V	5	1	1	0	0	0	4	11
C	244	6	2	0	10	1	191	454
A	511	33	4	1	6	0	348	903
T	341	31	2	1	8	2	237	622
D	194	15	1	0	4	1	128	343
S	1,115	76	9	3	18	3	825	2,049
Rs	439	30	2	1	10	0	327	809
Ra	460	25	3	3	10	0	354	855
Rb	617	15	2	2	20	6	500	1,162
P	29	0	1	0	2	1	22	55
E	0	0	0	0	0	0	1	1
Total	3,959	232	27	11	88	14	2,938	7,269

17 Gross appearance, early cancer (superficial type)**adenocarcinoma**

Site	Ip	Is	Ila	Ilb	Ilc	III	Others	Unknown	Total
I	0	0	1	0	0	0	1	0	2
V	0	0	1	0	0	0	0	0	1
C	12	23	34	0	2	0	11	1	83
A	33	47	51	1	6	0	25	3	166
T	16	34	56	0	12	0	29	1	148
D	22	26	20	1	5	0	13	3	90
S	183	177	78	1	13	1	78	15	546
Rs	26	50	30	0	4	0	29	4	143
Ra	24	53	40	0	1	0	34	4	156
Rb	35	100	72	1	4	0	45	5	262
P	1	4	1	0	0	0	1	1	8
E	0	0	0	0	0	0	0	0	0
Total	352	514	384	4	47	1	266	37	1,605

Ip: protruding pedunculated type, Is: protruding sessile type, Ila: superficial elevated type, Ilb: superficial flat type, Ilc: superficial depressed type, III: excavated type.

18 Tumor site by circumferential division of the bowel wall **adenocarcinoma**

Site	Dorsal (Posterior)	Ventral (Anterior)	Medial (Right)	Lateral (Left)	Circular	Unknown	Total
I	2	0	0	0	2	1	5
V	0	0	0	0	8	3	11
C	97	99	21	22	156	59	454
A	171	177	55	37	309	154	903
T	123	114	22	20	218	125	622
D	62	69	22	8	126	56	343
S	406	387	102	79	587	488	2,049
Rs	156	166	53	33	251	150	809
Ra	127	222	60	56	245	145	855
Rb	244	261	127	133	208	189	1,162
P	9	11	6	9	17	3	55
E	0	0	1	0	0	0	1
Total	1,397	1,506	469	397	2,127	1,373	7,269

19 Size of the tumor **adenocarcinoma****19-1 Circumferential occupancy, by site**

Site	<1/3	<1/2	<2/3	Semicircular	Circular	Unknown	Total
I	2	0	0	2	1	0	5
V	1	0	0	0	8	2	11
C	102	61	45	88	145	13	454
A	234	113	101	141	289	25	903
T	186	61	63	92	204	16	622
D	115	34	33	33	121	7	343
S	703	253	232	272	532	57	2,049
Rs	234	117	88	155	195	20	809
Ra	236	116	106	161	207	29	855
Rb	389	214	183	173	161	42	1,162
P	13	9	5	11	16	1	55
E	1	0	0	0	0	0	1
Total	2,216	978	856	1,128	1,879	212	7,269

19-2 Circumferential occupancy and maximum diameter

Diameter	<1/3	<1/2	<2/3	Semicircular	Circular	Unknown	Total
≤ 2cm	1,000	21	2	9	8	37	1,077
≤ 3cm	661	186	35	10	21	36	949
≤ 5cm	384	609	475	278	337	53	2,136
≤ 7cm	36	107	258	502	656	17	1,576
>7cm	15	28	60	297	741	8	1,149
Unknown	120	27	26	32	116	61	382
Total	2,216	978	856	1,128	1,879	212	7,269

20 Serosal invasion of the tumor**adenocarcinoma, surgical cases**

Site	S0	S1	S2	S3	Unknown	Total
I	1	1	0	2	0	4
V	1	2	2	4	2	11
C	126	79	154	74	6	439
A	232	169	330	108	11	850
T	173	102	217	83	10	585
D	110	60	115	32	2	319
S	618	388	644	202	19	1,871
Rs	254	146	282	76	14	772
Ra	270	170	285	66	18	809
Rb	608	173	200	88	46	1,115
P	28	9	8	8	2	55
E	0	1	0	0	0	1
Total	2,421	1,300	2,237	743	130	6,831

S0: No serosal invasion.

S1: Slight or questionable serosal invasion.

S2: Definite serosal invasion.

S3: Invasion to other organs or tissue through serosa.

21 Histological type

21-1 Adenocarcinoma

Site	w/d	m/d	p/d	muc	sig	NOS	Total
I	3	1	0	1	0	0	5
V	3	1	1	6	0	0	11
C	246	155	22	19	4	8	454
A	489	302	56	36	1	19	903
T	326	233	26	29	0	8	622
D	197	122	11	5	1	7	343
S	1,168	758	32	31	2	58	2,049
Rs	448	319	15	10	1	16	809
Ra	435	368	18	20	1	13	855
Rb	587	477	43	27	3	25	1,162
P	21	23	2	7	1	1	55
E	0	1	0	0	0	0	1
Total	3,923	2,760	226	191	14	155	7,269

w/d: well-differentiated adenocarcinoma, m/d: moderately differentiated adenocarcinoma, p/d: poorly differentiated adenocarcinoma, muc: mucinous carcinoma, sig: signet ring cell carcinoma.

NOS: not otherwise specified.

21-2 Other malignancies

Site	sq	as	ud	Basaloid	cd	Melanoma	Leiomyo- blastoma	Leiomyo- sarcoma	Malignant lymphoma	Others	Total
I	0	0	0	0	1	0	0	0	3	0	4
V	0	0	0	0	2	0	0	0	0	0	2
C	0	0	1	0	0	0	0	0	4	0	5
A	1	2	0	0	1	0	1	0	3	1	9
T	0	0	0	0	1	0	0	0	1	1	3
D	0	0	0	0	1	0	0	1	0	3	5
S	0	1	0	0	1	0	0	0	0	4	6
Rs	0	0	0	0	0	0	0	0	0	0	0
Ra	0	0	1	0	2	0	0	0	0	1	4
Rb	1	0	1	1	26	1	0	1	1	5	37
P	7	2	0	1	0	4	0	0	1	0	15
E	2	0	0	0	0	0	0	0	0	2	4
Total	11	5	3	2	35	5	1	2	13	17	94

sq: squamous cell carcinoma, as: adeno-squamous carcinoma, ud: undifferentiated carcinoma, basaloid: basaloid cell carcinoma, cd: carcinoid.

22 Metastasis**adenocarcinoma, surgical cases****22-1 Liver**

Site	H0	H1	H2	H3	Unknown	Total
I	4	0	0	0	0	4
V	10	0	0	0	1	11
C	390	20	2	25	2	439
A	751	32	26	39	2	850
T	530	19	10	24	2	585
D	292	7	4	14	2	319
S	1,686	50	34	96	5	1,871
Rs	683	28	23	36	2	772
Ra	725	31	13	34	6	809
Rb	1,012	29	13	31	30	1,115
P	50	2	1	2	0	55
E	1	0	0	0	0	1
Total	6,134	218	126	301	52	6,831

H0: No evidence of liver metastasis.

H1: Metastasis in one hepatic lobe only.

H2: A few scattered metastases in both lobes.

H3: Numerous metastases in both lobes.

22-2 Peritoneum

Site	P0	p+	P1	P2	P3	Unknown	Total
I	4	0	0	0	0	0	4
V	10	1	0	0	0	0	11
C	386	4	16	10	21	2	439
A	789	0	25	13	20	3	850
T	550	1	6	7	19	2	585
D	308	0	3	5	3	0	319
S	1,776	3	34	31	21	6	1,871
Rs	738	2	14	8	7	3	772
Ra	765	4	24	5	6	5	809
Rb	1,052	1	12	3	3	44	1,115
P	55	0	0	0	0	0	55
E	1	0	0	0	0	0	1
Total	6,434	16	134	82	100	65	6,831

P0: No evidence of peritoneal dissemination.

P1: Slight disseminations in the peritoneum adjacent to the primary lesion (It seemed to be resectable).

P2: Scattered disseminations in the peritoneum remote from the primary lesion. Dissemination limited to the major omentum or to ovary is classified as P2.

P3: Marked disseminations in the remote peritoneum.

22-3 Remote organs-1

Site	M(-)	M(+)	Unknown	Total
I	4	0	0	4
V	11	0	0	11
C	421	10	8	439
A	820	20	10	850
T	568	12	5	585
D	313	4	2	319
S	1,818	37	16	1,871
Rs	747	19	6	772
Ra	780	21	8	809
Rb	1,070	23	22	1,115
P	55	0	0	55
E	1	0	0	1
Total	6,608	146	77	6,831

M(-): No evidence of metastasis in remote organ(s) but liver and peritoneum.

M(+): Evidence of metastases in the remote organ(s).

22-4 Remote organs-2

Site	None	Lung	Bone	Ovary	Virchow	Brain	Adrenal	Skin	Others	Unknown	Total
I	4	0	0	0	0	0	0	0	0	0	4
V	11	0	0	0	0	0	0	0	0	0	11
C	421	6	1	0	0	1	0	1	1	8	439
A	820	16	0	0	2	1	0	0	1	10	850
T	568	8	0	1	3	0	0	0	0	5	585
D	313	2	0	0	1	1	0	0	0	2	319
S	1,818	26	2	2	3	0	1	0	3	16	1,871
Rs	747	15	1	1	0	0	0	0	2	6	772
Ra	780	16	0	0	0	1	0	1	3	8	809
Rb	1,070	13	4	2	1	0	0	0	3	22	1,115
P	55	0	0	0	0	0	0	0	0	0	55
E	1	0	0	0	0	0	0	0	0	0	1
Total	6,608	102	8	6	10	4	1	2	13	77	6,831

22-5 Lymph nodes, macroscopic

Site	N0	N1	N2	N3	N4	Nx	Total
I	2	2	0	0	0	0	4
V	5	2	1	0	0	3	11
C	157	127	92	41	15	7	439
A	318	263	162	52	43	12	850
T	275	169	70	44	15	12	585
D	158	93	43	9	11	5	319
S	914	575	253	41	55	33	1,871
Rs	373	260	89	17	22	11	772
Ra	367	285	93	26	22	16	809
Rb	560	293	136	41	20	65	1,115
P	26	12	6	6	4	1	55
E	0	0	0	0	0	1	1
Total	3,155	2,081	945	277	207	166	6,831

N0: No macroscopic evidence of lymph node metastasis.

N1: Macroscopic evidence of metastasis in group 1 lymph nodes.

N2: Macroscopic evidence of metastasis in group 2 lymph nodes.

N3: Macroscopic evidence of metastasis in group 3 lymph nodes.

N4: Macroscopic evidence of metastasis in group 4 lymph nodes.

Nx: Unknown or not assessed lymph node metastasis.

22-6 Lymph nodes, histological

Site	n0	n1	n2	n3	n4	nx	Total
I	1	3	0	0	0	0	4
V	8	0	1	0	0	2	11
C	237	98	51	29	9	15	439
A	479	186	108	44	18	15	850
T	370	112	38	33	8	24	585
D	210	63	24	8	5	9	319
S	1,146	421	197	16	34	57	1,871
Rs	440	206	70	15	18	23	772
Ra	450	214	73	20	14	38	809
Rb	580	227	137	30	16	125	1,115
P	22	10	10	4	4	5	55
E	0	0	0	0	0	1	1
Total	3,943	1,540	709	199	126	314	6,831

n0: No histological evidence of lymph node metastasis.

n1: Histological evidence of metastasis in group 1 lymph nodes.

n2: Histological evidence of metastasis in group 2 lymph nodes.

n3: Histological evidence of metastasis in group 3 lymph nodes.

n4: Histological evidence of metastasis in group 4 lymph nodes.

nx: Unknown or not assessed lymph node metastasis.

23 Depth of invasion

adenocarcinoma, surgical cases

23-1 Macroscopic

Site	M	SM	PM	SS, A1	S, A2	Si, Ai	Unknown	Total
I	1	0	0	1	0	2	0	4
V	0	1	0	1	3	4	2	11
C	40	37	33	111	140	69	9	439
A	50	83	65	238	291	98	25	850
T	43	74	48	148	183	80	9	585
D	24	44	27	89	94	31	10	319
S	83	303	184	496	581	192	32	1,871
Rs	31	91	101	206	261	72	10	772
Ra	37	84	115	199	286	68	20	809
Rb	87	138	213	269	289	103	16	1,115
P	3	5	7	11	14	14	1	55
E	0	0	0	1	0	0	0	1
Total	399	860	793	1,770	2,142	733	134	6,831

- M: Carcinoma is limited to within the mucosa.
- SM: Carcinoma is limited to within the mucosa and submucosa.
- PM: Carcinoma is limited to within the mucosa, submucosa and proper muscle.
- SS: Carcinoma extended from the mucosa beyond the proper muscle but is not exposed on the serosal surface.
- S: Carcinoma exposed on the serosal surface.
- Si: Carcinoma definitely infiltrating other organs.
- At the site without serosa
- A1: Carcinoma extended beyond the proper muscle but does not penetrate deeper.
- A2: Carcinoma extended beyond the proper muscle infiltrating deeper but without infiltrating other organs.
- Ai: Carcinoma definitely infiltrating other organs.

23-2 Histological

Site	m	sm	pm	ss, a1	s, a2	si, ai	Unknown	Total
I	0	1	0	1	0	2	0	4
V	1	0	0	3	1	4	2	11
C	53	30	45	167	104	35	5	439
A	61	86	62	371	221	42	7	850
T	56	66	35	238	136	46	8	585
D	32	46	34	134	58	11	4	319
S	97	322	224	748	367	98	15	1,871
Rs	43	91	108	312	180	30	8	772
Ra	50	82	109	304	211	39	14	809
Rb	90	152	248	290	256	61	18	1,115
P	4	4	12	13	11	10	1	55
E	0	0	0	1	0	0	0	1
Total	487	880	877	2,582	1,545	378	82	6,831

Definition and classification of depth of invasion are equally applicable to histological findings.

Small letters i.e., m, sm, pm, ss(a1), s(a2) and si(ai) represent histological findings.

24 Surgical margin of the resected specimen adenocarcinoma, surgical cases**24-1 Distance of proximal (oral side) margin, macroscopic**

Site	OW				Unknown	Total
	<3cm	<5cm	<10cm	>10cm		
I	0	1	0	2	1	4
V	0	0	3	5	3	11
C	15	33	128	212	51	439
A	17	30	196	509	98	850
T	34	50	141	285	75	585
D	16	25	102	154	22	319
S	74	138	604	874	181	1,871
Rs	13	32	181	476	70	772
Ra	24	25	99	564	97	809
Rb	78	8	71	800	158	1,115
P	4	1	2	34	14	55
E	1	0	0	0	0	1
Total	276	343	1,527	3,915	770	6,831

24-2 Distance of distal (anal side) margin, macroscopic, colon

Site	AW			Unknown	Total
	<5cm	<10cm	>10cm		
I	2	0	1	1	4
V	1	1	6	3	11
C	30	84	276	49	439
A	70	160	530	90	850
T	107	179	230	69	585
D	53	99	143	24	319
S	406	761	534	170	1,871
Total	669	1,284	1,720	406	4,079

24-3 Distance of distal (anal side) margin, macroscopic, rectum

Site	AW				Unknown	Total
	<2cm	<3cm	<5cm	>5cm		
Rs	29	103	280	304	56	772
Ra	109	202	283	139	76	809
Rb	274	211	254	244	132	1,115
P	10	12	14	6	13	55
E	1	0	0	0	0	1
Total	423	528	831	693	277	2,752

24-4 Proximal and distal margin, colon

OW	AW				Total
	<5cm	<10cm	>10cm	Unknown	
<5cm	212	122	94	5	433
<10cm	234	537	397	6	1,174
>10cm	209	615	1,209	8	2,041
Unknown	14	10	20	387	431
Total	669	1,284	1,720	406	4,079

24-5 Proximal and distal margin, rectum

OW	AW				Total
	<2cm	<3cm	<5cm	>5cm	
<5cm	89	29	21	44	186
<10cm	51	85	124	89	353
>10cm	264	393	654	533	1,874
Unknown	19	21	32	27	339
Total	423	528	831	693	2,752

24-6 Cancer infiltration at the margin of resected bowel

Site	ow			aw			ew		
	-	+	Unknown	-	+	Unknown	-	+	Unknown
I	4	0	0	4	0	0	4	0	0
V	10	0	1	10	0	1	10	0	1
C	432	0	7	432	0	7	410	14	15
A	839	0	11	838	0	12	805	15	30
T	576	0	9	576	0	9	554	9	22
D	316	0	3	316	0	3	310	2	7
S	1,853	1	17	1,853	1	17	1,794	27	50
Rs	759	0	13	759	0	13	738	11	23
Ra	795	0	14	793	3	13	755	20	34
Rb	1,093	2	20	1,087	7	21	1,050	36	29
P	54	0	1	54	0	1	49	5	1
E	1	0	0	1	0	0	1	0	0
Total	6,732	3	96	6,723	11	97	6,480	139	212

OW: Distance between proximal (oral) edge of the tumor and surgical margin of the bowel.

AW: Distance between distal (anal) edge of the tumor and surgical margin of the bowel.

ow(+): The cancer cells are seen within 5 mm of the oral margin.

ow(-): No cancer cells within the 5 mm.

aw(+): The cancer cells are seen within 5 mm of the anal margin.

aw(-): No cancer cells within the 5 mm.

ew(+): The cancer is exposed at the external surgical surface.

ew(-): No exposure of cancer cells.

25 Lymphatic and venous vessel invasion**adenocarcinoma, surgical cases****25-1 Site**

Site	ly-	ly+	Unknown	v-	v+	Unknown
I	1	3	0	2	2	0
V	6	4	1	8	2	1
C	139	287	13	230	191	18
A	307	524	19	441	389	20
T	222	342	21	302	259	24
D	106	198	15	161	143	15
S	649	1,149	73	949	841	81
Rs	257	488	27	379	365	28
Ra	252	523	34	361	410	38
Rb	388	662	65	497	547	71
P	16	35	4	22	29	4
E	1	0	0	0	1	0
Total	2,344	4,215	272	3,352	3,179	300

25-2 Lymph node metastasis, colon

	n0			n+		
	ly-	ly+	Unknown	ly-	ly+	Unknown
v-	1,036	509	0	125	388	1
v+	197	631	1	46	905	2
Unknown	4	8	65	0	7	32
Total	1,237	1,148	66	171	1,300	35

25-3 Lymph node metastasis, rectum

	n0			n+		
	ly-	ly+	Unknown	ly-	ly+	Unknown
v-	564	297	0	94	222	0
v+	123	456	1	56	672	1
Unknown	3	6	42	1	4	18
Total	690	759	43	151	898	19

25-4 Liver metastasis**25-4-1 Negative venous invasion (v-)**

	H0	H1	H2	H3
ly-	1,845	15	4	21
ly+	408	8	8	9
Unknown	7	0	0	1
Total	2,260	23	12	31

25-4-2 Positive venous invasion (v+)

	H0	H1	H2	H3
ly-	1,348	32	19	38
ly+	2,292	150	86	205
Unknown	24	2	0	1
Total	3,664	184	105	244

25-4-3 Unknown venous invasion

	H0	H1	H2	H3
ly-	1	0	0	1
ly+	3	1	0	1
Unknown	206	10	9	24
Total	210	11	9	26

ly: Lymphatic vessel invasion. v: Venous vessel invasion.

26 Histological classification and Dukes' stage

adenocarcinoma, surgical cases

26-1 Colon (excluding I and V)

	w/d	m/d	p/d	muc	sig	NOS	Total
Dukes A	828	203	8	8	0	24	1,071
Dukes B	657	495	43	34	2	9	1,240
Dukes C	464	518	52	47	3	4	1,088
Dukes D	173	272	32	24	2	0	503
Unknown	67	70	11	7	1	6	162
Total	2,189	1,558	146	120	8	43	4,064

26-2 Rectum (excluding P and E)

	w/d	m/d	p/d	muc	sig	NOS	Total
Dukes A	483	218	5	3	0	16	725
Dukes B	338	300	10	15	0	6	669
Dukes C	319	436	40	28	4	8	835
Dukes D	90	130	16	9	0	1	246
Unknown	137	70	4	2	1	7	221
Total	1,367	1,154	75	57	5	38	2,696

27 Accompanied lesions in the resected specimen

adenocarcinoma, surgical cases

27-1 By site of carcinoma

Lesion	I	V	C	A	T	D	S	Rs	Ra	Rb	P	E	Total
None	3	7	313	578	398	236	1,319	564	577	822	44	1	4,862
Adenoma	0	0	88	205	130	61	388	137	158	195	7	0	1,369
Adenomatosis	0	0	3	2	4	2	10	3	3	6	0	0	33
Hyperplastic polyp	0	0	10	22	13	7	67	35	43	43	0	0	240
Ulcerative colitis	0	0	0	1	0	0	2	0	0	0	0	0	3
Diverticulosis	1	1	6	11	8	2	21	4	4	5	2	0	65
Anal fistula	0	0	0	0	1	0	3	0	0	1	0	0	5
Radiation colitis	0	0	0	0	1	0	0	0	1	2	0	0	4
Crohn's disease	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	1	2	8	17	14	5	33	12	11	16	2	0	121
Unknown	0	1	14	26	18	7	51	24	22	29	0	0	192
Total	5	11	442	862	587	320	1,894	779	819	1,119	55	1	6,894

27-2 By number of carcinomas

Lesion	Number of carcinomas									Total
	1	2	3	4	5	6	7	>8	Unknown	
None	4,611	211	24	7	2	0	0	2	5	4,862
Adenoma	1,174	142	33	11	6	2	0	1	0	1,369
Adenomatosis	24	1	2	1	1	2	0	2	0	33
Hyperplastic polyp	218	19	2	0	0	1	0	0	0	240
Ulcerative colitis	3	0	0	0	0	0	0	0	0	3
Diverticulosis	55	9	1	0	0	0	0	0	0	65
Anal fistula	3	2	0	0	0	0	0	0	0	5
Radiation colitis	3	0	0	1	0	0	0	0	0	4
Crohn's disease	0	0	0	0	0	0	0	0	0	0
Others	109	10	2	0	0	0	0	0	0	121
Unknown	173	9	0	1	0	0	0	0	9	192
Total	6,373	403	64	21	9	5	0	5	14	6,894

28 Grades of operative procedures**adenocarcinoma, surgical cases**

Site	R0	R1	R2	R3	R4	Rx	Total
I	0	0	3	1	0	0	4
V	2	2	4	2	1	0	11
C	16	66	128	218	8	3	439
A	18	90	291	423	26	2	850
T	32	128	217	187	14	7	585
D	5	70	134	100	7	3	319
S	68	336	639	718	91	19	1,871
Rs	28	110	259	346	26	3	772
Ra	39	146	339	242	33	10	809
Rb	137	209	333	355	66	15	1,115
P	7	5	21	19	3	0	55
E	1	0	0	0	0	0	1
Total	353	1,162	2,368	2,611	275	62	6,831

R0: Incomplete dissection of Group 1 lymph nodes.

R1: Complete dissection of Group 1 lymph nodes.

R2: Complete dissection of Group 1 and 2 lymph nodes.

R3: Complete dissection of Group 1, 2 and 3 lymph nodes.

Rx: Assessment of grade of lymph nodes dissection are not met.

29 Evaluation of operative procedure

adenocarcinoma

29-1 Macroscopic, male

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	3	0	0	0	0	0	3
V	6	0	0	1	0	0	7
C	146	16	8	41	3	1	215
A	319	41	16	59	4	3	442
T	265	27	10	50	4	0	356
D	148	16	10	19	1	0	194
S	851	75	43	148	8	6	1,131
Rs	338	35	19	62	4	1	459
Ra	374	36	19	72	7	3	511
Rb	542	80	28	75	9	18	752
P	16	4	0	5	1	0	26
E	0	0	0	0	0	0	0
Total	3,008	330	153	532	41	32	4,096

29-2 Macroscopic, female

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	1	0	0	0	0	0	1
V	1	2	0	0	0	1	4
C	140	31	5	46	2	0	224
A	274	37	20	74	2	1	408
T	154	29	4	38	2	2	229
D	98	9	5	12	1	0	125
S	574	38	19	101	6	2	740
Rs	243	16	14	33	5	2	313
Ra	218	32	6	36	4	2	298
Rb	264	38	13	35	5	8	363
P	17	6	1	4	1	0	29
E	0	0	0	1	0	0	1
Total	1,984	238	87	380	28	18	2,735

29-3 Histological, male

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	3	0	0	0	0	0	3
V	6	0	0	1	0	0	7
C	156	10	8	36	2	3	215
A	336	26	17	59	4	0	442
T	278	19	9	46	4	0	356
D	152	14	6	21	1	0	194
S	873	57	41	144	8	8	1,131
Rs	336	33	22	63	4	1	459
Ra	370	33	25	73	7	3	511
Rb	546	73	29	76	8	20	752
P	15	4	1	5	1	0	26
E	0	0	0	0	0	0	0
Total	3,071	269	158	524	39	35	4,096

29-4 Histological, female

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	1	0	0	0	0	0	1
V	1	2	0	0	0	1	4
C	152	20	6	44	2	0	224
A	282	32	21	71	2	0	408
T	162	22	3	37	2	3	229
D	103	2	6	13	1	0	125
S	585	31	14	100	5	5	740
Rs	241	18	14	34	4	2	313
Ra	223	20	9	39	4	3	298
Rb	258	39	9	42	5	10	363
P	20	4	1	4	0	0	29
E	0	0	0	1	0	0	1
Total	2,028	190	83	385	25	24	2,735

29-5 Endoscopic polypectomy cases

Site	Curative resection		Non-curative resection		Not resected	Unknown	Total
	absolute	relative	relative	absolute			
I	1	0	0	0	0	0	1
V	0	0	0	0	0	0	0
C	10	2	0	0	0	3	15
A	36	3	0	2	0	8	49
T	30	4	0	0	0	2	36
D	22	0	1	0	0	1	24
S	130	24	0	0	0	23	177
Rs	26	3	0	2	0	6	37
Ra	36	3	0	1	0	5	45
Rb	32	5	0	0	0	6	43
P	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
total	323	44	1	5	0	54	427

Minimum requirements for 'curative resection' are as follows.

1. No metastasis in the liver, peritoneum or extra-abdominal organs.
2. No cancerous infiltration in the surgical margin of the resected specimen.

When the minimum requirements for curative resection are not met, the operation is classified as 'non-curative resection'. 'Absolute' and 'relative' categories are determined by the extent of lymph node dissection and assessment of the lymph node metastasis.

30 Operative method**adenocarcinoma, surgical cases**

	No. of cases		No. of cases
Nonresection		Right colectomy	1,207
Laparotomy only	20	Transversectomy	300
Enterostomy		Descending colectomy	141
ileum	8	Left colectomy	231
right colon	2	Sigmoidectomy	1,606
transverse colon	17	Subtotal colectomy	15
left colon	31	Total colectomy	8
unknown	0	Total colorectal resection	12
Intestinal by-pass	11	Sphincter-preserving operation	
Others	1	high anterior resection	547
Polypectomy		low anterior resection	1,374
trans-abdominal	2	posterior resection	3
trans-anal	33	invagination method	2
trans-sacral	9	pull-through procedure	3
trans-sphincteric	3	abdominosacral resection	3
Tumorectomy		Hartmann's operation	146
trans-abdominal	3	Amputation of the rectum	
trans-anal	55	abdominoperineal	616
trans-sacral	14	abdominosacral	14
trans-sphincteric	5	sacroabdominal	1
Appendectomy	2	Total pelvic exenteration	49
Ileocecal resection	202	Others	53
Ascending colectomy	79	Unknown	3
		Total	6,831

31 Combined resection of other organs**adenocarcinoma, surgical cases**

Combined resection	Colon	Rectum	Total
None	3,505	2,425	5,930
Abdominal wall	117	2	119
Pelvic wall	2	10	12
Uterus	21	61	82
Adnexa	47	47	94
Vagina	2	44	46
Seminal vesicle	5	32	37
Prostate	1	38	39
Bladder	66	65	131
Ureter	13	19	32
Stomach	35	7	42
Duodenum	17	0	17
Small intestine	74	22	96
Colon	34	7	41
Rectum	14	2	16
Liver	105	74	179
Omentum	68	1	69
Remote organs	5	2	7
Others	81	43	124
Unknown	21	14	35
Total	4,233	2,915	7,148

32 Operative mortality**surgical cases****32-1 Site**

	Adenocarcinoma			Other malignancies		
	No. of operations	Operative death	%	No. of operations	Operative death	%
I	4	0		4	0	
V	11	0		2	0	
C	439	4	0.9	5	0	
A	850	6	0.7	8	1	12.5
T	585	3	0.5	3	0	
D	319	1	0.3	5	0	
S	1,871	15	0.8	5	0	
Rs	772	7	0.9	0	0	
Ra	809	11	1.4	3	0	
Rb	1,115	5	0.4	26	0	
P	55	0		15	0	
E	1	0		3	0	
Total	6,831	52	0.8	79	1	1.3

32-2 Grades of operative procedures**adenocarcinoma**

		Curative resection		Non-curative resection		Not resected	Unknown	Total
		absolute	relative	relative	absolute			
Colon	No. of operation	3,090	235	131	572	31	20	4,079
	Operation death	9	2	0	15	2	1	29
	%	0.3	0.9		2.6	6.5	5.0	0.7
Rectum	No. of operation	2,009	224	110	337	33	39	2,752
	Operation death	9	4	0	6	3	1	23
	%	0.4	1.8		1.8	9.1	2.6	0.8

32-3 Grades of operative procedures**other malignancies**

		Curative resection		Non-curative resection		Not resected	Unknown	Total
		absolute	relative	relative	absolute			
Colon	No. of operation	20	3	1	8	0	0	32
	Operation death	1	0	0	0	0	0	1
	%	5.0						3.1
Rectum	No. of operation	15	16	3	8	1	4	47
	Operation death	0	0	0	0	0	0	0
	%							

32-4 Operative procedures				adenocarcinoma			
	No. of cases	No. of death	%		No. of cases	No. of death	%
Nonresection				Right colectomy	1,207	7	0.6
Laparotomy only	20	1	5.0	Transversectomy	300	1	0.3
Enterostomy	8			Descending colectomy	141		
ileum	2			Left colectomy	231		
right colon	17			Sigmoidectomy	1,606	10	0.6
transverse colon	31	3	9.7	Subtotal colectomy	15		
left colon	0			Total colectomy	8		
Unknown	11			Total colorectal resection	12		
Intestinal by-pass	1	1	100.	Sphincter-preserving operation			
Others				high anterior resection	547	4	0.7
Polypectomy	2			low anterior resection	1,374	9	0.7
trans-abdominal	33			posterior resection	3		
trans-anal	9			invagination method	2	1	50.
trans-sacral	3			pull-through procedure	3		
trans-sphincteric				abdominosacral resection	3		
Tumorectomy				Hartmann's operation	146	6	4.1
trans-abdominal	3			Amputation of the rectum			
trans-anal	55			abdominoperineal	616	3	0.5
trans-sacral	14	1	7.1	abdominosacral	14		
trans-sphincteric	5			sacroabdominal	1		
Appendectomy	2			Total pelvic exenteration	49		
Ileocecal resection	202	3	1.5	Others	53		
Ascending colectomy	79	1	1.3	Unknown	3	1	33.3
				Total	6,831	52	0.8

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発行者

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事務局：近畿大学医学部 第1外科内

〒589 大阪府大阪狭山市大野東377-2

TEL 0723(66)0221

FAX 0723(67)7771

全国登録委員会：栃木県立がんセンター

〒320 栃木県宇都宮市陽南4-9-13

TEL 028(658)5151

FAX 028(658)5669

印刷

(株)松井ピ・テ・オ・印刷

宇都宮市平出町4287-7

TEL 028(662)2511
