

**S4 Table.** Baseline characteristics of the patients according to the periods

<b>Characteristic</b>	<b>2000-2006 (n=129)</b>	<b>2007-2012 (n=205)</b>	<b>2013-2017 (n=312)</b>	<b>p-value</b>
<b>Age (yr)</b>	58 (36-87)	61 (35-84)	64 (44-84)	<0.001
<b>Sex</b>				
Male	73 (56.6)	103 (50.2)	174 (55.8)	0.387
Female	56 (43.4)	102 (49.8)	138 (44.2)	
<b>Tumor size (cm)</b>	2.3 (0.3-6.5)	2.1 (0.1-7.0)	2.0 (0.0-5.9)	0.053
<b>TNM stage</b>				
Stage I	68 (52.7)	108 (52.7)	160 (51.3)	0.701
Stage II	27 (20.9)	32 (15.6)	55 (17.6)	
Stage III	34 (26.4)	65 (31.7)	97 (31.1)	
<b>T category</b>				
T1	33 (25.6)	61 (29.8)	81 (26.0)	0.515
T2	45 (34.9)	81 (39.5)	125 (40.1)	
T3	51 (39.5)	63 (30.7)	106 (34.0)	
<b>N category</b>				
Negative	95 (73.6)	140 (68.3)	215 (68.9)	0.540
Positive	34 (26.4)	65 (31.7)	97 (31.1)	
<b>LVI</b>				
Absent	91 (70.5)	130 (63.4)	161 (51.6)	<0.001
Present	36 (27.9)	74 (36.1)	151 (48.4)	
Unknown	2 (1.6)	1 (0.5)	0	
<b>PNI</b>				
Absent	77 (59.7)	158 (77.1)	239 (76.6)	0.544
Present	17 (13.2)	47 (22.9)	73 (23.4)	
Unknown	35 (27.1)	0 (0)	0	
<b>Histology</b>				
W/D	46 (35.7)	71 (34.6)	89 (28.5)	0.348
M/D	66 (51.2)	120 (58.5)	187 (59.9)	
P/D	12 (9.3)	13 (6.3)	27 (8.7)	
Unknown	5 (3.9)	1 (0.5)	9 (2.9)	
<b>Resection status</b>				
R0	128 (99.2)	200 (97.6)	305 (97.8)	0.529
R1	1 (0.8)	5 (2.4)	7 (2.2)	

<b>Operation type</b>				
PPPD	128 (99.2)	203 (99.0)	312 (100)	0.236
TP	1 (0.8)	2 (1.0)	0	
<b>CEA (ng/mL)<sup>a)</sup></b>				
Normal	80 (62.0)	157 (76.6)	246 (78.8)	0.157
Elevated	15 (11.6)	14 (6.8)	29 (9.3)	
Unknown	34 (26.4)	34 (16.6)	37 (11.9)	
<b>CA 19-9 (U/mL)<sup>a)</sup></b>				
Normal	74 (57.4)	142 (69.3)	189 (60.6)	0.181
Elevated	44 (34.1)	54 (26.3)	93 (29.8)	
Unknown	11 (8.5)	9 (4.4)	30 (9.6)	

Values are presented as mean (range) or number (%). CA 19-9, carbohydrate antigen 19-9; CEA, carcinoembryonic antigen; LVI, lymphovascular invasion; M/D, moderately differentiated; P/D, poorly differentiated; PNI, perineural invasion; PPPD, pylorus-preserving pancreaticoduodenectomy; TP, total pancreatectomy; W/D, well differentiated. <sup>a)</sup>The levels of CEA and CA 19-9 were evaluated before operation.