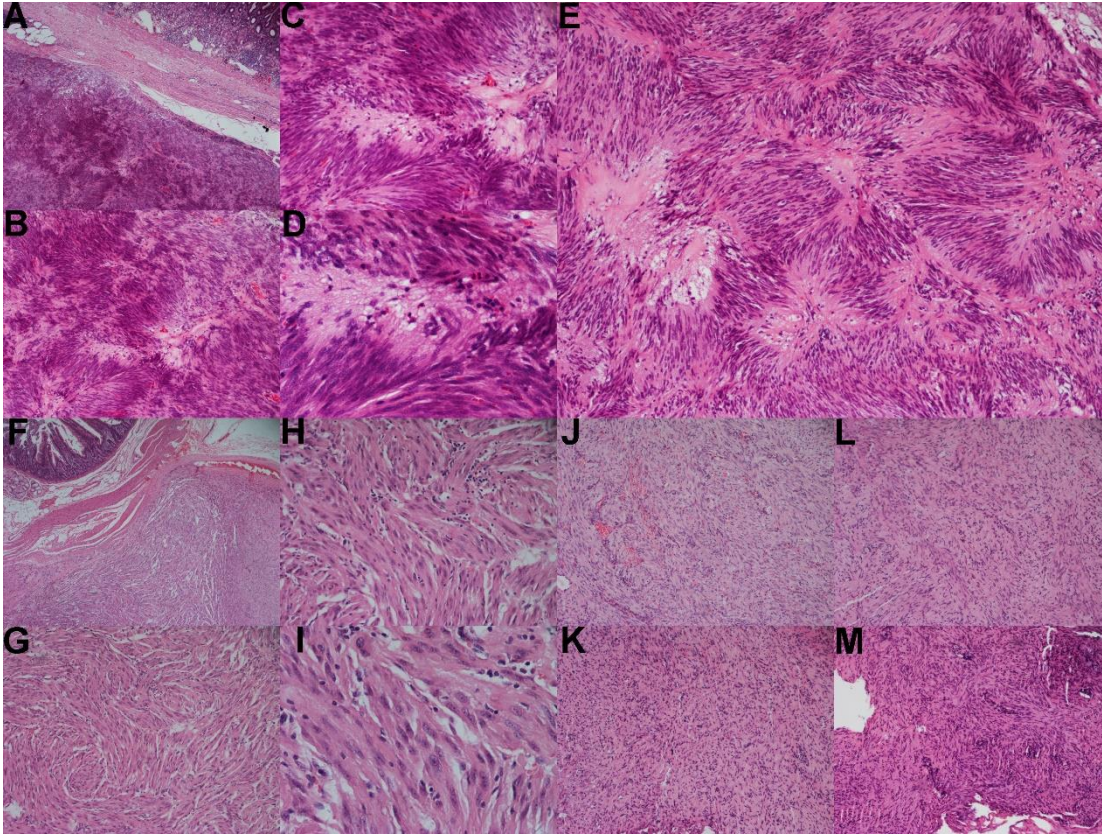


**Supplementary Figure 1 Evaluation of propensity score matching.** A: Jitter plot of individual cases; B: Line plot of individual differences; C: Histogram of propensity score; D: Histogram of standardized differences; E: Dot plot of standardized mean differences.



**Supplementary Figure 2 Pathological images of the multiple gastrointestinal stromal tumor patients.** A-D: Major tumor of patient No. 40. Original magnification  $\times 40$  (A); Original magnification  $\times 100$  (B); Original magnification  $\times 200$  (C); Original magnification  $\times 400$  (D); E: Minor tumor of patient No. 40. original magnification  $\times 100$ ; F-I: Major tumor of patient No. 38. Original magnification  $\times 40$  (F); Original magnification  $\times 100$  (G); Original magnification  $\times 200$  (H); Original magnification  $\times 400$  (I); J-M: Satellite tumors of patient No. 38. original magnification  $\times 100$ .

**Supplementary Table 1 Supplementary clinicopathological characteristics and blood indicators of solitary gastrointestinal stromal tumors and multiple gastrointestinal stromal tumors in the entire cohort and after propensity score matching**

Parameters	Entire cohort (before matching)		<i>P</i> value	Propensity score matched cohort		<i>P</i> value
	SGIST, <i>n</i>	MGIST, <i>n</i>		SGIST, <i>n</i>	MGIST, <i>n</i>	
All cases	942	41		164	41	
Cellular type			0.286			0.814
Spindle	868/942	36/41		147/164	36/41	
Epithelial	52/942	3/41		12/164	3/41	
Mixed	22/942	2/41		5/164	2/41	
Necrosis			<b>0.020</b>			0.139
Present	54/942	6/41		12/164	6/41	
Absent	888/942	35/41		152/164	35/41	
Calcification			0.171			0.103
Present	16/942	2/41		1/164	2/41	
Absent	926/942	39/41		163/164	39/41	
Cystic spaces			0.518			0.361
Present	16/942	1/41		1/164	1/41	
Absent	926/942	40/41		163/164	40/41	
IHC						
CD117 (+)	923/936	41/41	0.620	160/162	41/41	1.000
CD34 (+)	857/933	35/41	0.148	143/161	35/41	0.589
DOG-1 (+)	915/931	39/41	0.174	157/160	39/41	0.270
SMA (+)	209/899	13/36	0.107	37/157	13/36	0.141
S-100 (+)	35/858	4/38	0.078	5/144	4/38	0.092
Desmin (+)	35/306	1/15	1.000	4/54	1/15	1.000
Ki-67 <sup>1</sup>	3.25 (2-6)	5 (2-10)	0.228	5 (3-10)	5 (2-10)	0.694
Blood type			/			/
A	247/942	10/41		43/164	10/41	
B	294/942	14/41		49/164	14/41	
O	234/942	14/41		40/164	14/41	

AB	91/942		3/41			23/164		3/41		
NA	76/942		0/41			9/164		0/41		
Blood indicators										
WBC, 10 <sup>9</sup> /L <sup>1</sup>	5.52 6.61)	(4.54- 9.29)	6.34 9.29)	(4.36- 9.29)	0.834	5.90 7.32)	(4.95- 9.29)	6.34 9.29)	(4.36- 9.29)	0.172
RBC, 10 <sup>12</sup> /L <sup>1</sup>	4.34 4.72)	(3.79- 4.66)	4.30 4.66)	(3.37- 4.66)	0.807	4.25 4.73)	(3.64- 4.66)	4.30 4.66)	(3.37- 4.66)	0.923
HGB, g/L <sup>1</sup>	129 143)	(104- 143)	120 (95-136)	120 (95-136)	0.128	125 (97-143)	120 (95-136)	120 (95-136)	120 (95-136)	0.451
PLT, 10 <sup>9</sup> /L <sup>1</sup>	234 292)	(189- 292)	238 (203-312)	238 (203-312)	0.108	237 (191-293)	238 (203-312)	238 (203-312)	238 (203-312)	0.195
LYM, 10 <sup>9</sup> /L <sup>1</sup>	1.58 1.98)	(1.24- 1.84)	1.56 1.84)	(1.01- 1.84)	0.615	1.53 1.89)	(1.19- 1.84)	1.56 1.84)	(1.01- 1.84)	0.230
MON, 10 <sup>9</sup> /L <sup>1</sup>	0.38 0.48)	(0.28- 0.59)	0.46 0.59)	(0.28- 0.59)	0.086	0.40 0.55)	(0.29- 0.59)	0.46 0.59)	(0.28- 0.59)	0.120
NEU, 10 <sup>9</sup> /L <sup>1</sup>	3.22 4.36)	(2.45- 6.02)	3.98 6.02)	(2.55- 6.02)	0.835	3.54 4.69)	(2.75- 6.02)	3.98 6.02)	(2.55- 6.02)	0.140
EO, 10 <sup>9</sup> /L <sup>1</sup>	0.08 0.14)	(0.05- 0.21)	0.09 0.21)	(0.05- 0.21)	0.371	0.08 0.13)	(0.04- 0.21)	0.09 0.21)	(0.05- 0.21)	0.207
BASO, 10 <sup>9</sup> /L <sup>1</sup>	0.02 0.03)	(0.01- 0.04)	0.02 0.04)	(0.01- 0.04)	0.366	0.02 0.03)	(0.01- 0.04)	0.02 0.04)	(0.01- 0.04)	0.456
AST, U/L <sup>1</sup>	20 (17-24)		18 (16-21)	18 (16-21)	0.250	19 (15-24)		18 (16-21)	18 (16-21)	0.278
ALT, U/L <sup>1</sup>	15 (12-21)		14 (11-18)	14 (11-18)	0.256	16 (11-22)		14 (11-18)	14 (11-18)	0.061
ALP, U/L <sup>1</sup>	78 (64-95)		83 (67-108)	83 (67-108)	0.134	78 (66-95)		83 (67-108)	83 (67-108)	0.070
PA, g/L <sup>1</sup>	226 268)	(175- 268)	167 (138-258)	167 (138-258)	<b>0.002</b>	223 (161-265)		167 (138-258)	167 (138-258)	<b>0.012</b>
ALB, g/L <sup>1</sup>	40.3 43.0)	(36.8- 41.5)	38.1 41.5)	(35.0- 41.5)	0.061	39.9 43.0)	(36.1- 41.5)	38.1 41.5)	(35.0- 41.5)	0.174
GLO, g/L <sup>1</sup>	26.9 30.0)	(23.9- 29.7)	27.4 29.7)	(24.2- 29.7)	0.809	26.2 29.2)	(22.9- 29.7)	27.4 29.7)	(24.2- 29.7)	0.967
TC, mmol/L <sup>1</sup>	4.75 5.53)	(4.08- 5.58)	4.74 5.58)	(3.86- 5.58)	0.352	4.52 5.46)	(3.96- 5.58)	4.74 5.58)	(3.86- 5.58)	0.896

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<sup>1</sup>median (IQR). Bold values indicate  $P < 0.05$ ; MGIST: Multiple gastrointestinal stromal tumors; MGSIT: Multiple gastrointestinal stromal tumors; IHC: Immunohistochemistry; WBC: White blood cell; RBC: Red blood cell; HGB: Hemoglobin; PLT: Platelet; LYM: Lymphocyte; MON: Monocyte; NEU: Neutrophil; EO: Eosinophil; BASO: Basophil; AST: Aspartate aminotransferase; ALT: Alanine aminotransferase; PA: Prealbumin; ALB: Albumin; GLO: Globulin; TC: Total cholesterol; NA: Not available.

**Supplementary Table 2 Clinical characteristics of the multiple gastrointestinal stromal tumors patients**

Case	Sex	Age	Location	Size <sup>1</sup>	Mitotic <sup>1</sup> rate	Risk <sup>2</sup>	Follow- up(m)	Outcome	Number and size of rest tumors
1	M	53	Stomach	3	2	L	79.1	ANED	1; 0.8
2	M	55	Stomach	0.4	< 5	VL	46.3	ANED	1; 0.2
3	M	65	Stomach	0.8	< 5	VL	44.3	ANED	2; 0.5-0.7
4	M	73	Stomach	4.3	< 2	L	13.0	ANED	3; 0.3-3
5	M	73	Stomach	4	< 1	L	83.0	ANED	1; 2.5
6	M	57	Stomach	5	< 5	L	68.5	ANED	1; 0.6
7	F	55	Stomach	1	< 5	VL	71.0	ANED	1; 0.8
8	F	62	Stomach	2	< 5	L	43.4	ANED	1; 0.5
9	F	64	SI	2.7	< 5	L	32.0	ANED	1; 1.7
10	M	59	SI	3.5	< 5	L	31.8	DOD	1; 0.8
11	F	53	SI	3	< 5	L	77.9	ANED	2; 0.3-1
12	M	63	Stomach	14	4	H	32.6	ANED	1; 0.7
13	M	72	Stomach	8.5	35	H	29.1	DOD	8; 0.1-0.3
14	M	79	Stomach	5	> 5	M	96.8	ANED	1; 1
15	F	66	Stomach	5	5	M	24.9	ANED	1; 1
16	M	55	Stomach	12	3	H	57.4	DOD	2; 0.6-0.6
17	M	47	Stomach	9	17	H	104.5	AWD	1; 0.7
18	F	74	Stomach	6.5	8	H	58.1	ANED	1; 1.2
19	F	68	Stomach	5.5	4	M	92.6	ANED	1; 1
20	M	67	Stomach	6.5	1	M	79.4	ANED	1; 2.5
21	F	69	Stomach	7	5	M	60.5	ANED	1; 0.4
22	F	60	Stomach	6.5	1	M	39.7	AWD	1; 4
23	F	50	Stomach	8	< 5	M	84.0	ANED	1; 0.8
24	M	48	Stomach	23	24	H	32.9	AWD	1; 18
25	M	53	Stomach	16	< 5	H	26.1	ANED	1; 3
26	F	58	Stomach	10	20	H	45.3	DOD	1; 2.5
27	F	48	Stomach	20	4	H	53.4	ANED	1; 3

28	M	41	SI	9	5	H	63.5	DOD	2; 2-2
29	F	50	SI	13	19	H	20.6	DOD	1; 4.8
30	M	63	SI	7.5	4	H	49.0	ANED	3; 0.3-3
31	M	54	SI	10	7	H	12.8	DOD	1; 1
32	M	32	SI	9	< 5	H	43.7	ANED	17; 0.3-3
33	M	64	SI	33	> 10	H	10.8	DOD	3; 1-2.5
34	M	58	SI	5.5	> 10	H	36.4	DOD	40; 0.1-4
35	M	63	SI	30	> 10	H	48.5	DOD	10; 0.1-0.5
36	M	62	SI	10.5	> 5	H	76.4	AWD	2; 0.3-0.4
37	M	68	SI	7	> 50	H	8.5	DOD	4; 1.2-4
38	F	50	SI	2.5	2	L	11.8	ANED	5; 0.3-1.1
39	M	73	Stomach	4.3	2	VL	13.0	ANED	3; 0.3-3
40	M	62	Stomach	9	< 5	M	14.7	ANED	1; 1.5
41	M	55	SI	19	105	H	16.9	AWD	1; 0.9

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<sup>1</sup>The characteristics of major gastrointestinal stromal tumors. <sup>2</sup>Stratified by the modified National Institutes of Health criteria, H = High risk; M = Intermedia risk; L = Low risk; VL = Very low risk. NA: Not available; M: Male; F: Female; GIST: Gastrointestinal stromal tumors; SI: Small intestine; ANED: Alive, no evidence of disease; AWD: Alive with disease; DOD: Died of disease.