



Supplementary Figure 1 Selection of the study population.

Supplementary Table 1 Baseline characteristics of patients without liver metastasis at baseline (n=1,583)

	With newly developed liver metastasis n = 502 (31.7)	Without newly developed liver metastasis n = 1,081 (68.3)	P-value
Patient characteristics			
Age, years	63 (55.0–70.0)	68 (60.0–74.0)	0.012
Male	242 (48.2)	578 (53.5)	0.051
Body mass index, kg/m ²	22.9 (20.8–24.9)	22.7 (20.8–24.7)	0.301
Diabetes mellitus	278 (55.4)	519 (48.0)	0.006
Hypertension	237 (47.2)	443 (41.0)	0.020
Cirrhosis	1 (0.2)	2 (0.2)	0.952
HSI	33.8 (30.7–37.3)	33.8 (30.5–37.4)	0.740
HSI>30	399 (79.2)	858 (79.4)	0.959
HSI>36	166 (33.1)	371 (34.3)	0.624
TG, median (mg/dL)	104 (76–136)	103 (72–137)	0.433
HDL, median (mg/dL)	42 (32–50)	42 (31–53)	0.646
LDL, median (mg/dL)	87 (64–116)	85 (65–118)	0.900
Tumor characteristics			
Location			0.382
Head	246 (49.0)	477 (44.2)	

Body	107 (21.3)	253 (23.4)	
Tail	65 (12.9)	171 (15.8)	
Mixed	84 (16.8)	179 (16.6)	
Size (mm)	35 (26–46)	35 (26–45)	0.647
CA 19-9 (U/mL)	253.9 (35.6–1460.8)	182.0 (27.3–922.9)	0.012

Data expressed are the n (%) or median (interquartile range), as appropriate.

HSI, hepatic steatosis index

Supplementary Table 2 Risk factors of newly developed liver metastasis in patients without liver metastasis at baseline

Variables	Univariate			Multivariate		
	OR	95% CI	P-value	OR	95% CI	P-value
Age, years	0.966	0.956–0.975	<0.001	0.960	0.950–0.970	<0.001
Male	0.810	0.655–1.001	0.051			
Diabetes mellitus	1.344	1.086–1.662	0.006	1.300	1.041–1.623	0.021
Hypertension	1.288	1.041–1.594	0.020	1.508	1.198–1.898	<0.001
Cirrhosis	1.077	0.097–11.903	0.952			
Body mass index	1.023	0.989–1.058	0.188			
Tumor size	1.001	0.992–1.011	0.748			
HSI	1.005	0.989–1.021	0.542			
HSI>30	1.007	0.775–1.308	0.959			

HSI>36	0.945	0.755–1.183	0.624
TG	1.001	0.999–1.003	0.471
HDL	0.996	0.985–1.007	0.496
LDL	1.000	0.996–1.003	0.929
CA19-9 >260 U/mL	1.196	0.966–1.480	0.100

OR, odds ratio; HSI, hepatic steatosis index; CI, confidence interval

Supplementary Table 3 Characteristics of randomly selected patients (n=452)

Characteristics	Total, n = 452
Patients	
Age, years	66 (58–72)
Male	225 (49.8)
Body mass index, kg/m ²	22.7 (20.7–25.0)
Diabetes mellitus	239 (52.9)
Hypertension	209(46.2)
Cirrhosis	0 (0.0)
HSI	33.7 (30.7–37.2)
>30	361 (79.9)
>36	151 (33.4)
TG, median (mg/dL)	106 (80–145)

HDL, median (mg/dL)	40 (32-51)
LDL, median (mg/dL)	87 (64-122)
Tumors	
Location	
Head	214 (47.3)
Body	97 (21.5)
Tail	76 (16.8)
Body to tail	65 (14.3)
Size (mm)	36.0 (28.0-46.0)
CA 19-9 (U/mL)	259.0 (28.5-1650.3)

Data expressed are the n (%) or median (interquartile range), as appropriate.

HSI, hepatic steatosis index