

**Supplementary Table 1.** Multivariable logistic regression analysis by variables associated with HP using FP1 criterion

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
Male sex	–	–	0.66 (0.50–0.87)	0.003	0.68 (0.51–0.90)	0.007	0.99 (0.72–1.37)	0.952	1.06 (0.76–1.47)	0.748
Age (year)	–	–	1.06 (1.04–1.07)	<0.001	1.05 (1.04–1.07)	<0.001	1.05 (1.03–1.06)	<0.001	1.05 (1.03–1.06)	<0.001
BMI	–	–	–	–	–	–	1.22 (1.11–1.33)	<0.001	1.20 (1.10–1.31)	<0.001
WC (cm)	–	–	–	–	–	–	1.03 (1.00–1.06)	0.086	1.02 (0.99–1.05)	0.129
SBP (mmHg)	–	–	–	–	–	–	–	–	–	–
DBP (mmHg)	–	–	–	–	–	–	–	–	–	–
FBG (mg/dL)	–	–	–	–	–	0.384	1.00 (0.99–1.01)	0.976	1.00 (0.99–1.01)	0.845
HbA1c (%)	–	–	–	–	0.98 (0.66–1.46)	0.914	0.91 (0.61–1.35)	0.642	0.92 (0.62–1.36)	0.667
TG (mg/dL)	–	–	–	–	–	–	–	–	1.00 (1.00–1.01)	0.014
Cr	–	–	–	–	–	–	–	–	–	–
BUN	–	–	–	–	–	–	–	–	–	–
LDL	–	–	–	–	–	–	–	–	1.00 (1.00–1.01)	0.430
NAFLD	16.51 (10.51–25.93)	<0.001	15.03 (9.45–23.90)	<0.001	14.82 (9.30–23.63)	<0.001	8.75 (5.40–14.16)	<0.001	7.86 (4.82–12.81)	<0.001
Prediabetes/diabetes	6.34 (3.84–10.45)	<0.001	4.81 (2.88–8.02)	<0.001	4.50 (2.51–8.04)	<0.001	4.02 (2.21–7.33)	<0.001	3.83 (2.09–7.01)	<0.001

FP1 criterion, mild HP and more.

Model 1, NAFLD and preDM/DM as independent variables; Model 2, adjusted for variables of Model 1, age, sex; Model 3, adjusted for variables of Model 2, plasma glucose, and HbA1c; Model 4, adjusted for variables of Model 3, weight, BMI, and waist circumference; Model 5, adjusted for variables of Model 4, TG, and LDL. Fully adjusted model (Supplementary Table 2).

HP, hyperechoic pancreas; FP1, fatty pancreas 1; OR, odds ratio; CI, confidence interval; BMI, body mass index; WC, waist circumference; SBP, systolic blood pressure; DBP, diastolic blood pressure; FBG, fasting plasma glucose; HbA1c, serum glycosylated hemoglobin; TG, triglycerides; Cr, creatinine; BUN, blood urea nitrogen; LDL, low-density lipoprotein; NAFLD, nonalcoholic fatty liver disease.

**Supplementary Table 2.** Fully adjusted model using multivariable logistic regression analysis by variables associated with HP

	FP1 group		FP2 group	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Male sex	1.49 (0.93–2.39)	0.099	1.09 (0.73–1.62)	0.670
Age (year)	1.05 (1.03–1.06)	<0.001	1.04 (1.02–1.05)	<0.001
BMI <sup>a)</sup>	1.18 (1.08–1.29)	<0.001	1.16 (1.07–1.27)	<0.001
WC (cm)	1.03 (0.99–1.06)	0.110	1.03 (1.00–1.06)	0.085
SBP (mmHg)	1.00 (0.98–1.02)	0.660	0.99 (0.98–1.01)	0.485
DBP (mmHg)	1.01 (0.98–1.03)	0.504	1.01 (0.99–1.04)	0.283
FBG (mg/dL)	1.00 (0.98–1.01)	0.698	1.00 (0.99–1.01)	0.512
HbA1c (%)	0.94 (0.63–1.41)	0.776	0.85 (0.62–1.16)	0.303
TG (mg/dL)	1.00 (1.00–1.01)	0.026	1.00 (1.00–1.00)	0.280
Cr	3.13 (0.85–11.53)	0.086	0.90 (0.40–2.01)	0.792
BUN	1.00 (0.95–1.05)	0.954	1.01 (0.97–1.05)	0.619
LDL	1.00 (1.00–1.01)	0.484	1.00 (1.00–1.01)	0.118
NAFLD	7.93 (4.86–12.94)	<0.001	4.68 (3.45–6.37)	<0.001
Prediabetes/diabetes	3.90 (2.12–7.18)	<0.001	6.96 (4.66–10.47)	<0.001

FP1 criterion as mild HP and more, and FP2 criterion as moderate HP and more.

HP, hyperechoic pancreas; FP1, fatty pancreas 1; FP2, fatty pancreas 2; OR, odds ratio; CI, confidence interval; BMI, body mass index; WC, waist circumference; SBP, systolic blood pressure; DBP, diastolic blood pressures; FBG, fasting plasma glucose; HbA1c, serum glycosylated hemoglobin; TG, triglyceride; Cr, creatinine; BUN, blood urea nitrogen; LDL, low-density lipoproteins; NAFLD, nonalcoholic fatty liver disease.

<sup>a)</sup>Only inclusion of BMI due to multicollinearity with weight.