

The formula of T2-RS

$$\begin{aligned}
 \text{T2-RS} = & 0.318 \times \text{log-sigma-2-0-mm-3D_glszm_SizeZoneNonUniformity} - 1.228 \times \text{original_glszm_GrayLevelNonUniformity} \\
 & + 0.068 \times \text{wavelet-LLL_glszm_SizeZoneNonUniformity} - 1.713 \times \text{original_glrlm_RunVariance} + 2.255 \times \text{original_glrlm_LongRunHighGrayLevelEmphasis} \\
 & - 1.358 \times \text{original_glcm_Imc1} - 0.542 \times \text{log-sigma-3-0-mm-3D_glszm_LowGrayLevelZoneEmphasis} \\
 & - 0.642 \times \text{original_glcm_ClusterShade} - 0.82 \times \text{original_glrlm_GrayLevelNonUniformity} + 1.407 \times \text{original_gldm_LowGrayLevelEmphasis} \\
 & - 0.762 \times \text{original_ngtdm_Strength} - 0.261 \times \text{wavelet-HHL_glszm_SizeZoneNonUniformity} \\
 & - 0.53 \times \text{wavelet-HHH_glszm_GrayLevelNonUniformityNormalized} - 0.132 \times \text{wavelet-HHH_glszm_SizeZoneNonUniformity} \\
 & + 2.418 \times \text{original_gldm_SmallDependenceLowGrayLevelEmphasis} - 0.945 \times \text{wavelet-LLL_glrlm_LongRunHighGrayLevelEmphasis} \\
 & + 0.368 \times \text{original_ngtdm_Busyness} - 2.289 \times \text{original_glszm_LowGrayLevelZoneEmphasis} - 0.34.
 \end{aligned}$$

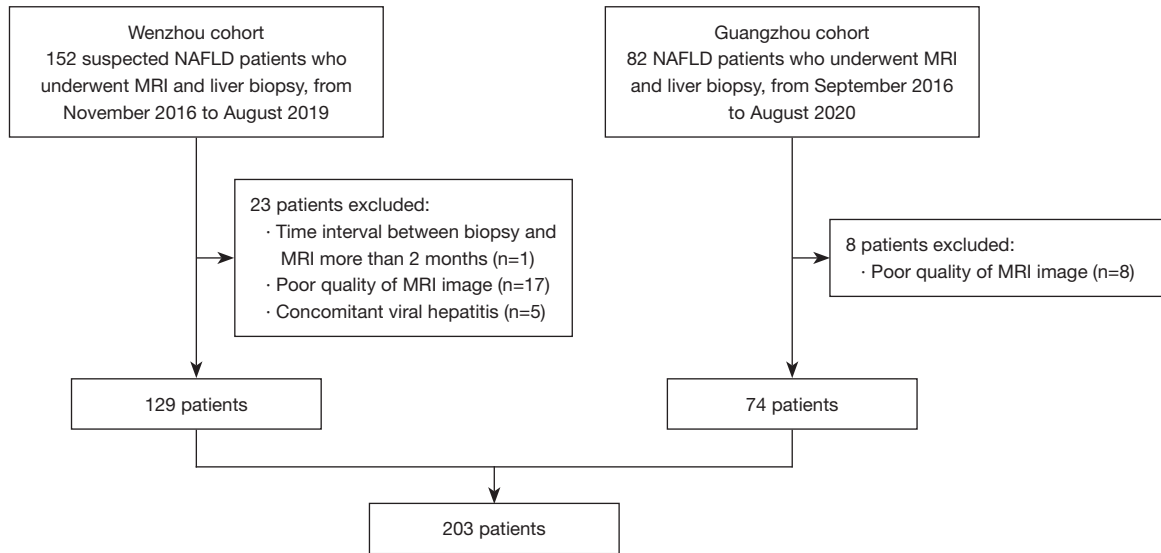


Figure S1 A flow diagram of study participants. NAFLD, nonalcoholic fatty liver disease; MRI, magnetic resonance imaging.

Table S1 The scanners and parameters of fat-suppressed fast spin-echo sequencea

Scanner	Magnetic field strength (Tesla)	Echo time (ms)	Repetition time (ms)	Field of view (mm ²)	Matrix	Slice thickness (mm)	Slice spacing (mm)	n
GE Discovery MR750	3.0	71–81	5,455–15,000	250×250	320×320	5–7	7–9	129
Toshiba Vantage Titan	3.0	75	1,953–7,568	400×410	312×320	6–8	8–10.6	68
				380×400	304×320			
				360×420	274×320			
Siemens MAGNETOM Verio	3.0	77	5,927	285×380	480×640	5	6	1
GE SIGNA excite	3.0	98–108	6,666.7	400×400	512×512	6	9	3
Siemens MAGNETOM Prisma	3.0	93	3,412–5,499	380×380	320×320	6	7.8	2

Table S2 Baseline characteristics of the Wenzhou and Guangzhou cohorts of patients with biopsy-proven NAFLD

Characteristics	Wenzhou cohort (n=129)	Guangzhou cohort (n=74)	P value
Demographics			
Age, years	42.2±12.0	41.9±10.9	0.895
Male sex, n (%)	93 (72.1)	51 (68.9)	0.632
Metabolic factors			
Type 2 diabetes, n (%)	21 (16.4) ^a	7 (9.5)	0.169
Hypertension, n (%)	21 (16.4) ^a	6 (8.1)	0.095
Laboratory parameters			
ALT, IU/L	52.0 (29.5–90.0)	41.9 (28.3–69.8)	0.115
AST, IU/L	35.0 (26.0–57.0)	28.0 (20.0–38.3)	<0.001
γ-glutamyltranspeptidase, IU/L	53.0 (33.0–87.0)	45.5 (29.5–74.0)	0.241
Albumin, g/L	46.6 (44.9–49.7)	47.9 (45.3–50.1)	0.306
Total bilirubin, μmol/L	12.0 (10.0–17.0)	11.8 (9.4–14.8)	0.094
Fasting glucose, mmol/L	5.2 (4.9–6.1)	5.1 (4.5–5.5)	0.259
Fasting insulin, pmol/L	109.0 (76.2–157.0) ^b	83.5 (65.3–105.8) ^c	0.005
Glycosylated hemoglobin, %	5.7 (5.3–6.3) ^d	5.6 (5.4–6.0) ^e	0.862
Total cholesterol, mmol/L	5.2±1.1	5.1±1.1	0.585
Triglyceride, mmol/L	1.9 (1.3–2.8)	1.7 (1.2–2.6)	0.315
HDL-C, mmol/L	1.0 (0.9–1.1)	1.1 (1.0–1.3)	0.001
LDL-C, mmol/L	3.1±0.9	3.4±1.1	0.030
Liver histology features			
Fibrosis stage, n (%)			0.124
F0	39 (30.2)	1 (1.4)	
F1	61 (47.3)	62 (83.8)	
F2	22 (17.1)	8 (10.8)	
F3	4 (3.1)	3 (4.1)	
F4	3 (2.3)	0 (0.0)	
Steatosis grade, n (%)			0.010
S0	7 (5.4)	5 (6.8)	
S1	41 (31.8)	31 (41.9)	
S2	51 (39.5)	34 (45.9)	
S3	30 (23.3)	4 (5.4)	
Ballooning grade, n (%)			<0.001
B0	17 (13.2)	2 (2.7)	
B1	72 (55.8)	23 (31.1)	
B2	40 (31.0)	49 (66.2)	

Table S2 (continued)

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Characteristics	Wenzhou cohort (n=129)	Guangzhou cohort (n=74)	P value
Lobular inflammation grade, n (%)			0.092
L0	9 (7.0)	1 (1.4)	
L1	74 (57.4)	59 (79.7)	
L2	42 (32.6)	14 (18.9)	
L3	4 (3.1)	0 (0.0)	
Definitive NASH [‡]	57 (44.2)	36 (48.6)	0.539
Hepatic IAS [†]			0.021
0	4 (3.1)	0 (0.0)	
1	13 (10.1)	3 (4.1)	
2	53 (41.1)	16 (21.6)	
3	35 (27.1)	47 (63.5)	
4	22 (17.1)	8 (10.8)	
5	2 (1.6)	0 (0.0)	

Continuous variables were expressed as means \pm SD or medians with IQRs; categorical variables were expressed as number (percentages). ^a, 128 (99.2%) cases were available; ^b, 127 (98.4%) cases were available; ^c, 48 (64.9%) cases were available; ^d, 126 (97.7%) cases were available; ^e, 66 (89.2%) cases patients were available; [‡], definitive NASH was defined as the presence of steatosis, lobular inflammation and ballooning with NAS score \geq 5; [†], hepatic IAS was defined as the sum of histologic scores for lobular inflammation and ballooning. NAFLD, nonalcoholic fatty liver disease; ALT, alanine aminotransferase; AST, aspartate aminotransferase; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; NASH, nonalcoholic steatohepatitis; IAS, inflammatory activity score; SD, standard deviation; IQRs, interquartile ranges; NAS, NAFLD activity score.