Supplementary Table 1. Baseline Characteristics of Study Groups

Demographical and clinical data															
Variables	**Not Lean (NL) (n:797)**	**Lean (L) (n:134)**	**P**	**(A) NL-MASLD (n:206)**	**(B) NL-MASLD / MAFLD (n:481)**	**(C) NL-MAFLD (n:110)**	**P A vs B**	**P A vs C**	**P B vs C**	**(C) L-MASLD (n:39)**	**(D) L-MASLD/ MAFLD (n:68)**	**(E) L-MAFLD (n:27)**	**P C vs D**	**P C vs E**	**P D vs E**
Age (years)	60.11 ± 3.48	46.21 ± 5.74	**<0.0001**	59.15 ±12.44	59.29 ± 16.03	62.42 ± 14.55	n.s.	n.s.	n.s.	46.6 ± 4.85	45.1 ± 4.3	47.8 ± 4.1	n.s.	n.s.	n.s.
Gender															
Male (n and %)	445 (55.8%)	85 (63.4%)	n.s.	125 (60.6%)	264 (55%)	56 (51%)	n.s.	n.s.	n.s.	23 (59%)	47 (69.12%)	15 (55.5%)			
Female (n and %)	352 (44.2%)	49 (36.6%)		81 (39.3%)	217 (45%)	54 (49%)				16 (41%)	21 (30.9%)	12 (44.4%)	n.s.	n.s.	n.s.
MedDiet															
Yes (n and%)	114 (14.3%)	58 (43.28%)	**<0.0001**	27 (13.1%)	72 (14.9%)	15 (13.6%)	n.s.	n.s.	n.s.	16 (41.02%)	31 (45.6%)	11 (40.7%)	n.s.	n.s.	n.s.
Smoke status															
Never (%)	159 (19.94%)	28 (20.89%)	n.s.	40 (19.4%)	98 (20.4%)	21 (19.1%)	n.s.	n.s.	n.s.	8 (20.5%)	14 (20.6%)	6 (22.2%)	n.s.	n.s.	n.s.
Past (%)	202 (25.35%)	54 (40.30%)	**0.0005**	48 (23.3%)	133 (27.6%)	21 (19.1%)	n.s.	n.s.	n.s.	16 (41.02%)	25 (36.8%)	13 (48.1%)	n.s.	n.s.	n.s.
Current (%)	436 (54.71%)	52 (38.81%)	**0.0007**	117 (56.8%)	256 (53.2%)	63 (57.3%)	n.s.	n.s.	n.s.	15 (38.5%)	29 (42.6%)	8 (29.6%)	n.s.	n.s.	n.s.

Active physical exercise														
Yes (n and%)	418 (52.44%)	88 (65.67%)	**0.005**	107 (51.9%)	244 (50.7%)	67 (60.9%)	n.s.	n.s.	n.s.	25 (64.1%)	46 (67.6%)	17 (62.9%)	n.s.	n.s.	n.s.
T2DM (%)	471 (59.1%)	49 (36.6%)	**0.005**	51 (24.7%)	342 (71.1%)	78 (70.9%)	**<0.0001**	**<0.0001**	n.s.	6 (15.4%)	19 (27.9%)	7 (25.9%)	n.s.	n.s.	n.s.
Dyslipidemia (%)	478 (59.9%)	48 (35.82%)	**<0.0001**	47 (22.8%)	351 (72.9%)	80 (72.7%)	**<0.0001**	**<0.0001**	n.s.	12 (30.8%)	22 (32.3%)	14 (51.8%)	n.s.	n.s.	n.s.
Hypertension (%)	334 (41.9%)	89 (66.4%)	**<0.0001**	52 (25.2%)	199 (41.3%)	83 (75.4%)	**<0.0001**	**<0.0001**	**0.001**	21 (53.8%)	47 (69.1%)	21 (77.8%)	/	/	/
Obesity (%)	576 (72.27%)	/	/	56 (27.2%)	429 (89.2%)	91 (82.7%)	**<0.0001**	**<0.0001**	n.s.	/	/	/	n.s.	**0.001**	**<0.0001**
Anthropometrical data															
Variables (mean ± standard deviation)	**Not Lean (NL)**	**Lean (L)**	**P**	**(A) NL-MASLD**	**(B) NL-MASLD/ MAFLD**	**(C) NL-MAFLD**	**P A vs B**	**P A vs C**	**P B vs C**	**(C) L-MASLD**	**(D) L-MASLD/ MAFLD**	**(E) L-MAFLD**	**P C vs D**	**P C vs E**	**P D vs E**
Body Mass Index (Kg/m^2)	32.12 ± 20.7	34.23 ± 2.449	**<0.0001**	32.03 ± 2.51	33.49 ± 3.08	34.91 ± 3.39	n.s.	n.s.	n.s.	22.66 ± 1.61	22.35 ± 1.4	22.25 ± 1.4	n.s.	n.s.	n.s.
WhR	1.110 ± 3.05	1.257 ± 0.12	**<0.0001**	1.410 ± 5.994	1.004 ± 0.11	1.144 ± 0.13	n.s.	n.s.	n.s.	0.86 ± 0.02	0.86 ± 0.02	0.85 ± 0.02	n.s.	n.s.	n.s.
SBP (mmHg)	130.7 ± 12.35	130.2 ± 12.90	n.s.	131.3 ± 12.35	130.1 ± 12.73	132.9 ± 10.85	n.s.	n.s.	n.s.	127.9 ± 12.21	133.7 ± 9.45	133.3 ± 9.61	n.s.	n.s.	n.s.
DBP (mmHg)	87.21 ± 7.71	86.94 ± 7.55	n.s.	87.57 ± 8.03	87.05 ± 7.74	88.63 ± 6.21	n.s.	n.s.	n.s.	86.51 ± 9.6	88.7 ± 7.46	88.52 ± 7.7	n.s.	n.s.	n.s.

Biochemical data														
AST (IU/L)	54.04 ± 18.34	52.84 ± 24.70	n.s.	51.10 ± 28.80	54.26 ± 13.38	52.04 ± 7.82	n.s.	n.s.	n.s.	51.82 ± 18.3	53.63 ± 31.23	52.78 ± 6.82	n.s.	n.s.	n.s.
ALT (IU/L)	56.11 ± 19.13	56.41 ± 21.20	n.s.	59.65 ± 29.98	54.29 ± 14.31	54.77 ± 9.61	n.s.	n.s.	n.s.	50.03 ± 15.3	51.38 ± 25.9	52.78 ± 9.36	n.s.	n.s.	n.s.
GGT (IU/L)	94.93 ± 33.42	92.49 ± 39.62	n.s.	75 ± 45.5	102.4 ± 25.36	101.3 ± 20.06	**<0.0001**	**0.001**	n.s.	93.8 ± 50.95	86.6 ± 38.77	105.5 ± 10.02	n.s.	n.s.	**0.004**
ALP (IU/L)	112.6 ± 29.53	112.9 ± 29.01	n.s.	92.65 ± 22.96	118.6 ± 29.01	122 ± 27.93	**<0.0001**	**0.001**	n.s.	111.6 ± 32.03	107.9 ± 27.2	124.8 ± 24.9	n.s.	n.s.	**0.004**
PLT (mm^3)	198.9 ± 87.69	177.5 ± 69.54	n.s.	206.8 ± 91.93	210 .1 ± 121.0	220.2 ± 93.0	n.s.	n.s.	n.s.	183.3 ± 69.1	190.1 ± 64.9	176.7 ± 86.9	n.s.	n.s.	n.s.
LDL (mg/dl)	154.04 ± 18.34	152.84 ± 24.70	n.s.	151.10 ± 28.80	154.26 ± 13.38	157.04 ± 7.82	n.s.	n.s.	n.s.	147.82 ± 18.3	153.63 ± 31.23	157.78 ± 6.82	n.s.	n.s.	n.s.
HDL (mg/dl)	56.11 ± 19.13	56.41 ± 21.20	n.s.	59.65 ± 29.98	54.29 ± 14.31	54.77 ± 9.61	n.s.	n.s.	n.s.	50.03 ± 15.3	61.38 ± 25.9	52.78 ± 9.36	n.s.	n.s.	n.s.
FPG (mg/dl)	112.6 ± 29.53	119.9 ± 29.01	n.s.	112.65 ± 22.96	118.6 ± 29.01	113.21 ± 27.93	n.s.	n.s.	n.s.	111.6 ± 32.03	107.9 ± 27.2	122.8 ± 24.9	n.s.	n.s.	**0.004**
Insulin (μU/mL)	54.04 ± 18.34	59.84 ± 24.70	n.s.	51.10 ± 28.80	54.26 ± 13.38	52.04 ± 7.82	n.s.	n.s.	n.s.	47.82 ± 18.3	53.63 ± 31.23	57.78 ± 6.82	n.s.	n.s.	**0.002**
HbA1c (%)	5.17 ± 1.52	5.21 ± 1.64	n.s.	5.41 ± 2.52	5.81 ± 2.56	5.87 ± 2.38	n.s.	n.s.	n.s.	5.09 ± 2.42	4.98 ± 1.21	5.13 ± 1.17	n.s.	n.s.	n.s.
HOMA-IR	3.01 ± 1.52	3.72 ± 1.64	**0.04**	3.11 ± 1.54	3.02 ± 1.51	3.17 ± 1.40	n.s.	n.s.	n.s.	3.68 ± 1.5	3.39 ± 1.66	4.02 ± 1.77	n.s.	n.s.	n.s.
Hs-CRP (mg/L)	1.72 ± 0.75	1.97 ± 0.74	**0.03**	1.88 ± 0.74	1.79 ± 0.75	2.04 ± 0.63	n.s.	n.s.	n.s.	1.10 ± 0.67	1.66 ± 0.66	1.98 ± 0.66	**<0.0001**	**0.001**	**0.002**

Non-invasive tools for liver disease progression status														
LSM (kPa)	10.14	9.62	n.s.	9.84	10.32	10.24	n.s.	n.s.	n.s.	10.03	9.43	9.34	n.s.	n.s.	n.s.
	± 5.70	± 2.28		± 5.02	± 5.75	± 4.77				± 2.03	± 2.27	± 2.56			
CAP (dB/m)	273.6	272.8	n.s.	272.4	274	273.3	n.s.	n.s.	n.s.	271.8	273.7	272.4	n.s.	n.s.	n.s.
	± 9.77	± 9.216		± 11.61	± 9.38	± 8.02				± 9.87	± 9.22	± 7			
NFS	-2.394	-2.502	n.s.	-1.986	-2.989	-2.456	n.s.	n.s.	n.s.	-2.71	-2.48	-2.74	n.s.	n.s.	n.s.
	± 11.32	± 1.09		± 2.127	± 0.93	± 1.52				± 0.74	± 1.3	± 0.64			
FIB-4	2.458 ±	2.537	n.s.	2.51	2.49	2.39	n.s.	n.s.	n.s.	2.51	2.54	2.52	n.s.	n.s.	n.s.
	1.214	± 1.47		± 1.59	± 1.08	± 1.08				± 1.04	± 1.85	± 0.5			
BARD	2.287	2.366	n.s.	2.23	2. 29	2. 38	n.s.	n.s.	n.s.	2.61	2.38	2.05	n.s.	n.s.	n.s.
	± 1.18	± 1.33		± 1.178	± 1.21	± 1.06				± 1.53	± 1.37	± 0.82			

The Kruskal-Wallis test for continuous variables and the Chi-square test for categorical variables were adopted to compare respectively continuous and categoric variables among the groups**.**

T2DM: type 2 diabetes mellitus; Whr: Waist to hip ratio; SBP/DBP: systolic/diastolic blood pressure; PLT: Platelet Count; FPG: Fasting Plasma Glucose; HbA1c: Glycated Hemoglobin; HOMA-IR: Homeostatic Model Assessment for Insulin Resistance; Hs-CRP: high-sensitivity C-reactive protein; LSM: Liver stiffness measurement; CAP: controlled attenuation parameter; NFS: NAFLD fibrosis score; FIB-4: Fibrosis-4; BARD: BMI-AST/Platelet Ratio-Diabetes. SD: standard deviation, n.s: not statistically significant; Statistically significant p values are reported in bold.