# ACG value 2022

#### Introduction

- Current literature shows that risk factors like obesity, diabetes, and hypertension, which are components of metabolic syndrome, lead to worse outcomes in COVID-19 patients
- Metabolic-associated fatty liver disease (MAFLD) and Nonalcoholic fatty liver disease (NAFLD) are on the rise and are currently estimated to affect around 25% of the US population
- We aimed to investigate the association between NAFLD/ MAFLD and mortality outcomes among COVID-19 Patients

#### Methods

- Database: PubMed, Cochrane, Embase, Science
   Direct, and Web of Science
- Duration of literature: January 2019- to August 2022
- Inclusion Criteria: Observational studies or clinical trials that studied mortality outcomes in COVID-19 patients
- Studies that assessed NAFLD/MAFLD using lab assessment (FIB-4, APRI, FIBROSIS score, HSI index, etc.), non-invasive imaging (Elastography, Liver Ultrasound, CT scan, MR elastography, Liver stiffness measurement), or liver biopsy were included
- Meta-analysis performed using Rev Man software and heterogeneity assessed using the *I2* statistic. Mantel-Haenszel odds ratio was generated to describe the overall effect size using random effect models

## Association Of Non-Alcoholic Fatty Liver Disease And Metabolic-Associated Fatty Liver Disease With Mortality in COVID-19 Patients: A Systematic Review And Meta-Analysis

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Results

Total studies included: 29

Total of 42,475 patients from 29 studies were included in the qualitati COVID-19 died; 846 were in the NAFLD group and 1252 were in the no

The odds ratio was 1.36 for mortality, p=0.07 and a 95% Confidence in not observe an association between NAFLD/MAFLD and hospital mort

	NAFLD		Non-NAFLD			Odds Ra
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Randor
Calapod et al 2021	4	47	3	79	2.6%	2.36 [0.5
Campos-Varela et al 2021	13	271	0	29	1.1%	3.08 [0.1
Chang et al 2022	80	2082	14	1040	4.8%	2.93 [1
Chen et al 2020	27	178	37	164	4.9%	0.61 [0
Demir et al 2022	7	349	1	270	1.8%	5.51 [0.6
Derevynko et al 2021	7	47	25	335	4.0%	2.17 [0
Effenberger et al 2020	2	12	0	20	1.0%	9.76 [0.43
Elfeki et al 2021	11	88	16	285	4.2%	2.40 [1
Elhence et al 2021	9	22	81	199	4.0%	1.01 [0
Forlano et al 2020	18	61	41	132	4.6%	0.93 [0
Hashemi et al 2020	9	55	39	294	4.3%	1.28 [0
Huang et al 2020	0	86	0	194		Note
Hussain et al 2021	59	87	39	63	4.6%	1.30 [0
Ji et al 2020	1	19	0	35	0.9%	5.76 [0.22
Kim et al 2021	46	456	75	411	5.2%	0.50 [0
Madan et al 2022	38	289	21	157	4.8%	0.98 [0
Marjot et al 2021	48	322	97	367	5.2%	0.49 [0
Moctezuma-Velázquez et al 2022	106	359	21	111	4.9%	1.80 [1
Mushtag et al 2021	19	320	15	269	4.5%	1.07 [0
Romero-Cristóbal et al 2021	41	81	29	96	4.7%	2.37 [1
Shao et al 2021	0	37	5	84	1.1%	0.19 [0
Tignanelli et al 2021	56	934	372	25962	5.4%	4.39 [3
Trivedi et al 2021	3	45	45	274	3.2%	0.36 0
Vázquez-Medina et al 2022	162	299	23	60	4.8%	1.90 [1
Vrsaliko et al 2022	8	120	3	96	2.9%	2.21 0
Nang et al 2021	0	86	2	132	1.0%	0.30 0
Yao et al 2021	0	38	0	48		Note
Yoo et al 2021	12	629	9	561	4.1%	1.19 (0
Younossi et al 2021	60	553	239	2736	5.4%	1.27 [0
Total (95% CI)		7972		34503	100.0%	1.36 [0
Total events	846		1252			

Figure 2: Forest Plot and meta-analysis of Mortality outcomes in COVID-19 with Fatty Liver disease

tive analysis. A total of 2098 patients with on-NAFLD group nterval (95% CI) of 0.97- 1.90, <i>I</i> <sup>2</sup> = 83%. We did rtality among COVID-19 patients	<ul> <li>Our meta-analysis patients with NA</li> <li>A high level of he studies</li> </ul>



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sis suggests that the increased odds of mortality among COVID-19 AFLD, did not reach statistical significance

neterogeneity among the studies needs to be considered for future