DOES THE ETIOLOGY OF ACUTE PANCREATITIS IMPACT CLINICAL OUTCOMES? INSIGHTS FROM A POPULATION-BASED COHORT STUDY

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PURPOSE / OBJECTIVES

- **Objective**: To examine the relationship between obesity and clinical outcomes (mortality) in patients with ALF.
- **Key Question**: Does obesity independently confer an additional mortality risk in patients with ALF after adjusting for confounders?

MATERIAL & METHODS

Data source: TriNetX database

Population: Adults aged 18-100 with acute liver failure

Cohorts:
- Obese Group: BMI ≥30 kg/m²
- Non-Obese Group: BMI <30 kg/m²

Matching: 1:1 propensity score matching was conducted for key demographics and comorbidities

Outcomes: All-cause mortality at 28 days, 90 days, 1 year

Exclusion: History of liver transplant, chronic liver disease, or cirrhosis before ALF diagnosis

	Before Propensity Score Matching			After Propensity Score Matching		
Characteristics	Acute liver failure and BMI ≥30 kg/m²	Acute liver failure and BMI <30 kg/m²	P Value	Acute liver failure and BMI ≥30 kg/m²	Acute liver failure and BMI <30 kg/m²	P Value
Demographics						
Age, mean ± SD	59.1 ± 15.2	59 ± 16.8	0.4578	59.1 ± 15.3	59.5 ± 15.7	0.0025
Male, (%)	50.681	55.57	< 0.0001	51.154	51.424	0.4666
Non-Hispanic or Latino, (%)	75.944	76.494	0.0490	75.902	76.195	0.3564
Race						
White (%)	64.935	60.742	< 0.0001	64.943	65.354	0.2456
Black or African American (%)	16.905	14.993	< 0.0001	16.825	16.96	0.6272
Asian (%)	3.016	8.939	< 0.0001	3.047	3.045	0.9828
Other race (%)	3.115	3.323	0.0733	3.136	2.838	0.0185
Unknown race (%)	10.037	10.503	0.0199	10.124	9.953	0.4436
Comorbidities						
Diseases of the respiratory system (%)	59.08	55.511	< 0.0001	58.989	58.57	0.2515
Diabetes mellitus (%)	36.056	26.085	< 0.0001	35.399	35.655	0.4706
Hypertension (%)	59.522	50.328	< 0.0001	59.108	59.234	0.7282
Ischemic heart disease (%)	35.139	30.744	< 0.0001	34.994	34.869	0.7260

Table 1. Baseline patient characteristics of study groups, before and after propensity score matching

Outcome	Cohort	Before Propensity Score Matching		After Propensity Score Matching	
		Overall Risk	Risk Ratio (RR) and P value	Overall Risk	Risk Ratio (RR) and P value
All-cause mortality, measured at 28 days	Acute liver failure and BMI ≥30 kg/m²	31.845%	RR 1.068	31.841%	RR 1.059
	Acute liver failure and BMI <30 kg/m²	29.823%	P<0.0001	30.069%	P<0.0001
All-cause mortality, measured at 90 days	Acute liver failure and BMI ≥30 kg/m²	37.406%	RR 1.058	37.413%	RR 1.049
	Acute liver failure and BMI <30 kg/m²	35.343%	P<0.0001	35.679%	P<0.0001
All-cause mortality, measured at 1 year	Acute liver failure and BMI ≥30 kg/m²	42.21%	RR 0.159	42.357%	RR 1.045
	Acute liver failure and BMI <30 kg/m²	39.855%	P<0.0001	40.542%	P<0.0001

Table 2. All-cause mortality at 28 days, 90 days, and 1 year between two cohorts before and after propensity score matching

RESULTS

Pre-Matching Mortality:
- 28 days: RR 1.068 (P<0.0001)
- 90 days: RR 1.058 (P<0.0001)
- 1 year: RR 1.059 (P<0.0001)

Post-Matching Mortality:
Mortality differences remained statistically significant across all time points

- 28 days: RR 1.059 (P<0.0001)
- 90 days: RR 1.049 (P<0.0001)
- 1 year: RR 1.045 (P<0.0001)

Conclusion

- Obesity is an independent risk factor for worse ALF outcomes.
- Chronic inflammation and metabolic dysfunction likely contribute.
- This data supports inclusion of obesity in ALF risk stratification tools
- There is a need for obesity-specific management strategies in ALF

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