

5-2019

Psoas Muscle Area Predicts Acute Respiratory Distress Syndrome in Acute Pancreatitis

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Recommended Citation

Fisher, Charles; Kandagatla, Pridvi; Gupta, Arielle H; Abbas, Daniyal; Knisely, Beatrice; Cho, Rachel; Schmoekel, Nathan; and Stassinopoulos, Jerry, "Psoas Muscle Area Predicts Acute Respiratory Distress Syndrome in Acute Pancreatitis" (2019). *Clinical Research*. 24.

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PSOAS MUSCLE AREA PREDICTS ACUTE RESPIRATORY DISTRESS SYNDROME IN ACUTE PANCREATITIS

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DISCLOSURES

I do not have any relevant financial relationship with any commercial interest that pertains to the content of my presentation.



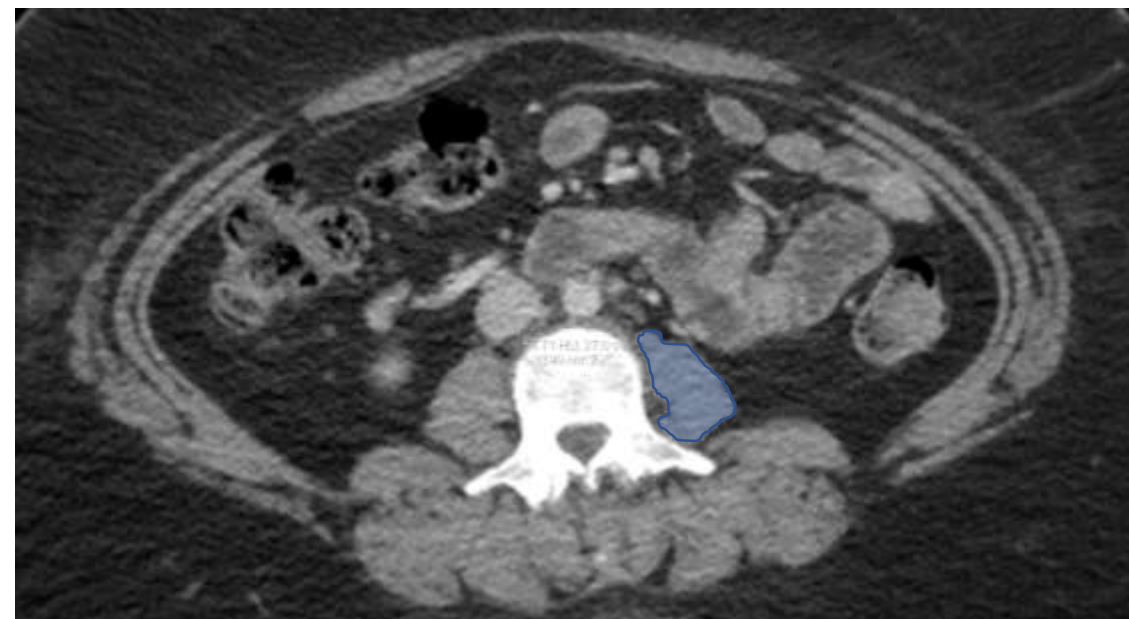
BACKGROUND

- Acute Respiratory Distress Syndrome (ARDS) is a dreaded complication of acute pancreatitis
 - Increased association with morbidity and mortality¹
- Sarcopenia based on psoas muscle area shown to be a predictor of morbidity and mortality²
- Aim: To determine predictive ability of psoas muscle area for ARDS in acute pancreatitis



METHODS

- Chart review of patients between 2015-2017 admitted to the ICU for acute pancreatitis with a CT abdomen at admission
- Patients without CT abdomen at admission and transfers were excluded
- Information regarding patient demographics, disease etiology, and hospital course recorded
- Psoas muscle cross-sectional area was measured at L3, standardized to patients' heights
 - Sarcopenia defined: lowest gender-based quartile of cross sectional area at L3



RESULTS – UNIVARIATE ANALYSIS

	No ARDS n = 186	ARDS n = 32 (14.7%)	p-value
Age (Mean[SD])	47.3 (17.3)	58.0 (19.8)	<0.01
L3 Sarcopenia (%)	66 (35.7%)	16 (50.0%)	0.12
Male (%)	104 (55.9%)	19 (59.4%)	0.72
Race (%)			0.37
White	113 (64.6%)	23 (76.7%)	
African American	45 (25.7%)	6 (20.0%)	
Hispanic	3 (1.7%)	0 (0.0%)	
Asian	12 (6.9%)	0 (0.0%)	
Other	2 (1.1%)	1 (3.3%)	

RESULTS – UNIVARIATE ANALYSIS

	No ARDS	ARDS	p-value
BMI (Mean[SD])	29.1 [7.5]	30.1 [9.3]	0.52
Albumin (Mean[SD])	2.85 [0.95]	2.71 [0.89]	0.48
Serum Creatinine (Mean [SD])	1.52 [1.87]	2.07 [1.83]	0.14
ICU (%)			0.52
SICU	110 (59.1%)	17 (53.1%)	
MICU	76 (40.9%)	15 (46.9%)	
Etiology (%)			0.04
EtOH	86 (49.1%)	8 (25.8%)	
Gallstone	26 (14.9%)	9 (28.1%)	
Other	63 (36.0%)	11 (35.5%)	

RESULTS – UNIVARIATE ANALYSIS

	No ARDS	ARDS	p-value
Necrotizing (%)	54 (29.2%)	13 (41.9%)	0.16
CAD	21 (11.4%)	7 (21.9%)	0.01
HTN	99 (53.2%)	22 (68.8%)	0.1
COPD	19 (10.3%)	8 (25.0%)	0.02
Diabetes	55 (29.9%)	9 (28.1%)	0.84
Functional Status (%)			<0.01
Independent	123 (80.9%)	13 (54.2%)	
Partially Dependent	23 (15.1%)	7 (29.2%)	
Dependent	6 (3.9%)	4 (16.7%)	



RESULTS – MULTIVARIATE ANALYSIS

	OR	95% C.I.		p-value
Age	1.03	0.98	1.08	0.26
L3 Sarcopenia	5.15	1.23	21.49	0.03
Serum Creatinine	1.33	0.99	1.78	0.06
Functional Status				
Independent	REF			
Partially Dependent	1.25	0.23	6.68	0.80
Dependent	1.75	0.24	12.67	0.58
Necrotizing	0.60	0.15	2.37	0.46
Etiology				
EtOH	REF			
Gallstones	3.49	0.60	20.29	0.16
Other	1.63	0.33	7.91	0.55
CAD	2.10	0.45	9.84	0.35
HTN	0.30	0.07	1.35	0.12
COPD	6.60	1.46	29.96	0.01



CONCLUSIONS

- Limitations
 - Single institution – difficult to apply results to hospitals with less capable ICUs
 - Limited by power – only patients with CT on admission could be included in study
- Conclusions
 - Psoas area and history of COPD are independent predictors for development of ARDS
- Future Directions
 - Prospective studies
 - Control for severity
 - Explore other possible predictors



QUESTIONS?

Thank you!



References:

1. [Chest](#). 2017 Apr;151(4):755-763. doi: 10.1016/j.chest.2016.09.004. Epub 2016 Sep 20
2. [J Vasc Surg](#). 2018 Feb;67(2):460-467. doi: 10.1016/j.jvs.2017.06.085. Epub 2017 Aug 23.