An Analysis of Characteristics and Inpatient Outcomes of Patients Hospitalized with ARDS and Comorbid Autoimmune Hepatitis : Insights From a Nationwide Inpatient Sample

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INTRODUCTION

Acute respiratory distress syndrome (ARDS) is a life- threatening form of respiratory failure, triggered by inflammation, accounting for 10% of intensive care unit admissions and 24% of patients receiving mechanical ventilation worldwide. Autoimmune hepatitis (AIH) is a chronic inflammatory liver disease, for which the initiating and driving factors are still elusive. It has been shown that development of ARDS in a cirrhotic patient greatly increased mortality and other adverse hospital outcomes. However, there is limited literature to assess the role that AIH plays on patient outcomes in those hospitalized with primary diagnosis of ARDS.

MATERIAL & METHODS

The National Inpatient Sample (NIS) database was used to identify adult patient admitted for ARDS with secondary diagnosis of AIH in 2015-2016. Multivariate logistic regression analysis was performed to assess the primary outcome of mortality; after adjusting for age, sex and race. Other outcomes investigated include length of stay (LOS), total hospital charges, and frequency of routine disposition.

RESULTS

	ARDS	ARDS + AIH
Mortality (%)	14.9%	22%
Length of Stay (Days)	8.7	10.6
Total Hospital Charges (USD)	$108,423	$133,125

Table 1. Comparison of inpatient outcomes between patients hospitalized with ARDS and ARDS with concomitant AIH.

SUMMARY / CONCLUSION

In this retrospective study from 2015-2016, AIH when present with ARDS, led to a higher mortality rate, LOS, and total hospital charge when compared to ARDS alone. Other factors that led to an increased mortality rate included liver transplantation and ulcerative colitis. Presence of such illnesses may negatively affect outcomes due to chronic inflammation and the use of immune-modulating pharmaceuticals. Further prospective studies are required to investigate

RESULTS

There was a total of 1,000 patients hospitalized for ARDS with concomitant AIH in 2015-2016. 81% of patients were female and majority were white (70.5%) between the ages of 61-80 years old (47.5%). In hospital mortality rate was 22% in patients with ARDS/AIH, and the average LOS was nearly 2 days longer when AIH was present (8.7 days vs. 10.6 days). 36% of patients with ARDS/AIH underwent routine discharge, and total hospital charges were significantly increased when concomitant AIH was present (Table 1).

Common comorbidities present in patients with ARDS/AIH included gastroesophageal reflux disease (13%), tobacco use disorder (10%), obesity (7%), hypertension (46%), type 2 diabetes (17%), hyperlipidemia (12%), chronic obstructive pulmonary disease (17%), and chronic kidney disease (26%).

Higher mortality was associated in those with AIH (OR 1.47, $p<0.05$, 95% CI 1.25-1.73), liver transplant (OR 2.79, $p<0.05$, 95% CI 2.21-3.53), and ulcerative colitis (OR 2.26, $p<0.05$, 95% CI 1.95-2.62).