

# HOSPITAL PHYSICIAN®

## CRITICAL CARE MEDICINE BOARD REVIEW MANUAL

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## Acute Respiratory Distress Syndrome

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#### I. INTRODUCTION

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Acute respiratory distress syndrome (ARDS), formerly known as adult respiratory distress syndrome, is a fairly common finding in critically ill patients. Initially described in 1967,<sup>1</sup> this syndrome is characterized by rapid onset of dyspnea, by hypoxemia that is poorly responsive to oxygen, by diffuse pulmonary infiltrates, and by poor lung compliance. Moreover, ARDS is always associated with another causative pathologic process.

ARDS represents the most severe portion of the range of injury comprising acute lung injury (ALI).<sup>2</sup> ALI connotes a syndrome of pulmonary inflammation and increased permeability and edema, independent of pulmonary capillary hypertension. In an attempt to describe more precisely the degree and character of lung injury, Murray and colleagues developed the Lung Injury Score (LIS).<sup>3</sup> The LIS uses a patient's chest radiograph findings and level of hypoxemia, positive end-expiratory pressure (PEEP), and lung compliance to develop a total score; scores greater than 2.5 indicate ARDS.

This article will examine ARDS in some detail, discussing criteria for and etiology of the disease, recount-

ing the typical clinical course of the disease, and discussing treatment options.

#### DEFINITION

Defining ARDS precisely is a difficult task. The American-European Consensus Conference on ARDS settled on a broad definition that recognizes the entire continuum of the syndrome's findings.<sup>2</sup> This definition is less restrictive than previous ones and requires the following findings to be present: acute onset of pulmonary impairment; bilateral infiltrates on frontal radiographs of the chest; a ratio of PaO<sub>2</sub> to fraction of inspired oxygen (FIO<sub>2</sub>) of less than 200 (a ratio less than 300 indicates acute lung injury); and either a pulmonary artery occlusion pressure of less than 18 mm Hg or no evidence of left atrial hypertension<sup>4</sup> (**Tables 1** and **2**).

A patient with ARDS typically has rapidly progressive hypoxemia, severe dyspnea, diffuse bilateral pulmonary infiltrates, and a recent or current comorbidity known to be associated with ARDS (**Table 3**). Isolated pulmonary injuries, such as lobar pneumonia or pulmonary contusion, do not meet the criteria for ARDS in themselves, even if the patient exhibits high oxygen requirements. However, both lobar pneumonia and pulmonary contusion can lead to ARDS if there is the further development of diffuse bilateral infiltrates.