

Approach to Adult Patients with Acute Dyspnea



Elizabeth DeVos, MD, MPH, Lisa Jacobson, MD*

KEYWORDS

- Dyspnea • Shortness of breath • Asthma • COPD • Respiratory compensation
- Pneumonia • Pulmonary embolism • Angina

KEY POINTS

- The cause of dyspnea is often evident from a complete history and physical examination.
- Rapid determination of the cause of dyspnea saves lives.
- Shortness of breath is not always primarily a pulmonary problem.
- Understanding the pathophysiology of each disease allows clinicians to make rational decisions about testing.

INTRODUCTION

Emergency Medical Services (EMS) calls en route with a 45-year-old woman who has a history of congestive heart failure, chronic bronchitis, morbid obesity, and diabetes. She is breathing 40 times per minute, maintaining oxygen saturations of 94%. She appears mildly confused. You have 5 minutes to consider algorithms before the patient arrives. Perhaps respiratory therapy is paged to supply a ventilator or a biphasic positive airway pressure (BIPAP) machine. Maybe you prepare airway equipment or ask your nursing staff to access medication in advance, or you might use the time to expand your differential and determine what brief information regarding the patient's history and initial physical examination will help you treat her.

Acutely dyspneic patients present in various ways. Are the lungs full of fluid or pus? Did the throat swell shut or is the patient just anxious? Did the patient aspirate a foreign body or have a slow or rapid hemorrhage? Is the patient compensating for a severe metabolic acidosis or did the patient run out of beta agonists at home? This article provides helpful guidelines in the assessment and management of these diverse patients.

Disclosures: None.

Department of Emergency Medicine, University of Florida College of Medicine - Jacksonville, 655 West 8th Street, Jacksonville, FL 32209, USA

* Corresponding author.

E-mail address: Lisa.Jacobson@jax.ufl.edu

Emerg Med Clin N Am 34 (2016) 129–149
<http://dx.doi.org/10.1016/j.emc.2015.08.008>

emed.theclinics.com

0733-8627/16/\$ – see front matter © 2016 Elsevier Inc. All rights reserved.

Respiratory distress is responsible for nearly 4 million emergency department (ED) visits each year and is one of the most common presenting complaints in the elderly.¹ When a patient presents with dyspnea, the primary task of the emergency physician is to assess for and ensure stability of the patient's airway, breathing, and circulation. In the case of dyspnea, presentations may range from minor symptoms to extremis. Rapid assessment may necessitate the use of intubation, BIPAP, nebulizations, decompression, or other therapies in the immediate period following the patient's arrival, to treat dyspnea.

PATIENT EVALUATION

The American Thoracic Society suggests that "dyspnea results from a ... mismatch between central respiratory motor activity and incoming afferent information from receptors in the airways, lungs and chest wall structures."² This dissociation can result from increased metabolic demand, decreased compliance, increased dead-space volume, or many other disorders that are discussed later. Each patient presenting short of breath uses a different set of phrases to describe the symptoms and examination reveals a different combination of disorders. The clinician's ability to interpret these varying constellations is necessary to provide appropriate treatment to these patients, who are often in serious distress.

History

Acute dyspnea, or shortness of breath, is one of the most common chief complaints in the ED. The differential diagnosis includes many disorders that can be divided based on obstructive, parenchymal, cardiac, and compensatory features. A careful history can begin to narrow this wide differential. In addition to common symptoms, consider risk factors such as past medical and family history, trauma, travel, medications, and exposures.

Schwartzstein and Lewis³ use the analogy of a machine to identify different causes of dyspnea based on pathophysiologic data. Dysfunctions of the respiratory system may be caused by faulty controllers, ventilatory pumps, or gas exchangers (**Table 1**). This table makes it easier to understand the causes of shortness of breath related to respiratory causes.

Cardiovascular disease manifests as dyspnea by causing disruptions of the system that pumps oxygenated blood to tissues and then transports the carbon dioxide back to the lung. Decreases in cardiac output or increases in resistance limit oxygen delivery. Similarly, decreased oxygen carrying capacity in anemia plays a role in its presentation with dyspnea.

Physical Examination

A detailed physical examination also provides important guidance (**Table 2**). Respiratory rate and oxygen saturation are obtained with vital signs. The clinician should assess the patient's work of breathing, looking for any tripodding or retractions. Crepitation in the chest may indicate subcutaneous air and pneumothorax. Lung sounds such as wheezing, rales, and rhonchi further guide the differential. Decreased sounds, hyperresonance, or egophony may also provide additional clues.

Jugular venous distension, S3 gallop, and peripheral edema indicate that a patient has fluid overload. Conjunctival pallor, capillary refill, and temperature of extremities can provide clues about blood volume and general circulation. Pulses must also be assessed.

Download English Version:

<https://daneshyari.com/en/article/3236675>

Download Persian Version:

<https://daneshyari.com/article/3236675>

[Daneshyari.com](https://daneshyari.com)