

Title: E-cigarette or Vaping Use-Associated Lung Injury (EVALI) in a Hispanic male during the COVID-19 pandemic

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Background:

Electronic cigarette or vaping product use–associated lung injury established the relationship between vaping products and lung injury. Overlapping clinical manifestations may mimic those of other respiratory conditions including COVID-19. Multiple radiographic findings including diffuse, bilateral, ground-glass infiltrates with lower-lobe predominance, eosinophilic pneumonia, and diffuse alveolar damage have been described. It is important to consider this as an alternative diagnosis, particularly in patients with respiratory symptoms and a history of vaping in the last 90 days due to increased risk of COVID-19 infection and worse outcomes.

Case presentation:

A 25-year-old male with a history of polysubstance abuse and frequent E-cigarette use presented to the ED after losing consciousness. He was cyanotic and required emergent intubation due to severe acute hypoxemic respiratory failure. Initial chest CT reported extensive amount of bilateral scattered infiltrates with air bronchograms (Image 1a). Broad spectrum antibiotics were started due to high suspicion of aspiration pneumonia and CIWA protocol was started in setting of alcohol withdrawal symptoms. The patient was successfully extubated on day 5 of admission. Repeat Chest CT on day 9 showed improvement in dense perihilar infiltrates; perihilar interstitial increased markings were seen extending to the lung peripheries from residual pneumonitis versus subsequent fibrotic changes/scarring (Image 1b).

Conclusion:

EVALI has grave consequences on the respiratory system, including acute pathologies such as diffuse alveolar injury, acute fibrinous pneumonitis, and acute respiratory failure requiring noninvasive or invasive ventilation as well as chronic respiratory conditions. Among the most common culprits identified in the mechanism of EVALI are Vitamin E acetate, nicotine and THC. Furthermore, multiple drug users are at higher risk of more serious complications. More studies and clinical trials are needed to better understand the pathophysiology of EVALI and to explain short- and long-term effects of vaping.