



Vaping-Associated Lung Injury with Lipoid Pneumonia: An EVALI Case Report and Review of Literature

(EVALI: E-Cigarette, or Vaping, Product Associated Lung Injury)

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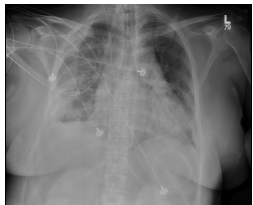
CASE REPORT

47 year old female with history of vaping and recent pneumonia who presented with lethargy and fatigue with subsequent PEA arrest. She developed shock and severe ARDS, requiring paralysis and proning.

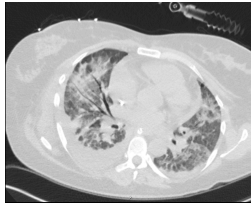


DIAGNOSTICS

- BAL culture with few yeast; MRSA, RVP, PCP DFA negative
- BAL Oil Red O staining positive for intracytoplasmic lipid in alveolar macrophages, confirming lipoid pneumonia



Diffuse airspace opacities



Intralobular thickening and diffuse groundglass opacities with areas of consolidation



TREATMENT

- Initially treated with empiric antibiotics with cefepime, vancomycin, and azithromycin
- Hydrocortisone was used for stress dose steroids then changed to methylprednisolone



RESULTS

The patient's clinical course continued to improve and she was discharged to an acute rehabilitation center



MECHANISM OF ACTION

Lipoid pneumonia results from an inflammatory response to lipid present in the alveolar space. It can be endogenous or exogenous in etiology. Endogenous causes include bronchial lipid storage disorders, bronchial obstruction, or hypercholesteremia. Exogenous causes include inhalation or aspiration of animal, vegetable, or mineral oil.



REVIEW OF LITERATURE

- 15 cases
- Diagnoses
 - Lipoid pneumonia: 26%
 - Organizing pneumonia: 20%
 - Acute eosinophilic pneumonia: 20%
 - Diffuse alveolar hemorrhage: 20%
 - Respiratory bronchiolitis: 7%
 - Acute hypersensitivity pneumonitis: 7%
 - Acute alveolitis with intra-alveolar fibrosis: 7%
- 88% were treated with antibiotics
- 67% were treated with steroids
- 33% of cases required mechanical ventilation
- 1 case of ARDS, requiring ECMO, who did not survive



DISCUSSION

- Nurses and providers should inquire about the use of e-cigarettes or vaping products in all patients presenting with respiratory symptoms and be aware of its association with mortality.
- Those patients with a recent vaping history who develop severe ARDS should be considered for transfer to a tertiary center with expert ARDS care.



CONCLUSION

- There have only been a few reported cases of EVALI with severe ARDS.
- More research needs to be done to identify the causes and relationships between e-cigarettes and lung injury.