Intermountain Healthcare

E-Cigarette, or Vaping, Associated Lung Injury (E-VALI) Guideline

History & Physical

Symptom duration prior to presentation? ______

VAPING HISTORY 1. History of: □ Vaping □ Juuling □ Dabbing Date when last vaped? 2. Type of device(s) Used: □ Bottles □ Cartridges □ Pods □ Dry Vape □ Pax □ Other 3. Specific type(s) of liquids used: □ Nicotine □ THC Products □ Oils □ Flavored Fluids □ Other 4. Were devices, liquids, refill pods and/or cartridges shared with other people? 5. Were old cartridges or pods reused with other homemade or commercial products? 6. Were devices used to inhale drugs that were concentrated by heating prior to vaping (i.e. dabbing?) 7. Details of vaping behavior: cloud volume □ frequency of puffs □ 'Zero or Stealth' vaping □ Valsalva at end of inhalation	Yes / No Yes / No Yes / No
 Smoking history Occupational exposures Mold, humidifiers, birds, hot tubs, etc. GI (nausea, vomiting, Note: GI symptoms in presenting symptom) 	s, weight loss, myalgias) abdominal pain, diarrhea) hay be severe and may be the initially ss of breath, cough, pleuritic
findings: commonly bilateral GGO, but also patchy consolidation, and unilateral findings Pneumothorax and/or pneumomediastinum occasionally present LFT abnormalities (200-300 alk phos, AST and ALT) Leukocytosis (mild) history was obtained f persistent attempts to Viral pneumonitis Atypical pneumon etc) Bacterial pneumo	is suspicion – in many cases vaping ar into the presenting illness even with elicit the history (influenza, other) iia (Mycoplasma, Legionella, Chlamydia, mia expneumonia ivity to pneumonitis due to other cause birds, mold, etc.)

Clinical Diagnosis of E-VALI

See Other Side for: Treatment recommendations

KEY: ALI: Acute Lung Injury; ALT: Alanine Aminotransferase; AST: Aspartate Aminotransferase; BAL: Bronchoalveolar Lavage; CDC: Center for Disease Control; CT: Computerized Tomography; CXR: Chest X-ray; DAH: diffuse alveolar hemorrhage; ;DLCO: Diffusing Lung Capacity for Carbon Monoxide; ESR: Erythrocyte Sedimentation Rate; GGO: Ground Glass Opacities; GI: Gastrointestinal; ICU: Intensive Care Unit; IV: Intravenous; kg: kilogram; mg: milligram; LFT: Liver Function Test; PFT: Pulmonary Function Test; PO: by mouth; THC: Tetrahydrocannabinol (active ingredient in cannabis); Synonyms: VAPI: Vaping Associated Pulmonary Injury; VALI: Vaping Associated Acute Lung Injury; E-VALI: e-cigarette, or vaping, Associated Acute Lung Injury;

E-Cigarette, or VAPING, ASSOCIATED LUNG INJURY (E-VALI) GUIDELINE



<u>Case Definition – E-cigarette, or Vaping, Associated Acute Lung Injury (E-VALI):</u>

https://www.nejm.org/doi/full/10.1056/NEJMoa1911614;

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease/healthcare-providers/index.html

Person with reported use of e-cigarette devices and related inhalational products in the 90 days before symptom onset with pulmonary infiltrates on imaging, whose illness was not attributed to other causes.

All Patients: Contact Intermountain EVALI Taskforce; Telecritical Care (available 24/7) for support, follow up, and public reporting;

- Assess oxygenation
- Obtain vaping history counsel on Vaping and tobacco cessation
- Avoid all fumes, dust, essential oils, and other respiratory irritants
- May include empiric antibiotics for pneumonia
- Close outpatient follow-up

Disposition Based on Patient Clinical Presentation Admit to ICU • Routine ICU care, ALI evaluation and treatment as indicated **Admit to Ward** based on clinical judgement **Outpatient Treatment** • Rapid early steroids (e.g. methylprednisolone 1mg/kg IV per • Consider consult to Pulmonary Service day in divided doses; within 1-2 days should see Steroids for vaping lung injury (short • Rapid initiation of short improvement) course) and expect improvement over course of empiric steroids • Consider early steroids and obtain Urine Toxicology screen 1-3 days (e.g. Prednisone PO daily for THC • May start IV methylprednisolone 0.5 40-60mg/day for 5-10 • Consider bronchoscopy w/ BAL if lack of improvement or mg/kg per day x 1-2 days then days) diagnostic uncertainty to eval infection, DAH, etc. [Please transition to po prednisone Monitor for treatment note, lipid laden macrophage Oil red O stain on BAL is a depending on clinical course response and marker for lipid and oil inhalation – it is not specific for · If not improving or worsening, complications (e.g. vaping associated lung injury. Expect ORO positive with reconsider differential diagnosis and pneumothorax, infection, vaping history, essential oils, or other oil inhalation.] consider step up to more invasive relapse of vaping) Hospital Course: Attention to weaning steroids (some work up (e.g. bronchoscopy, biopsy, patients relapse with rapid wean), infectious complications other) (some patients with secondary infections after initial improvement), and pneumothorax/pneumomediastinum

Post Discharge Follow-up

- Reassess symptoms (usually improved)
- Reassess pulmonary exposures and vaping, nicotine, THC use, and relapse
- Reassess oxygenation (should be able to wean down/off oxygen within days-weeks)
- Consider PFT's (Spirometry and DLCO) though caution if history of pneumothorax or pneumomediastinum
- Consider CXR in 4-6 weeks to assess for resolution
- If persistent abnormalities consider chest CT or other imaging at further follow-up
- · Other testing as clinically indicated

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AUTHORS: The Intermountain EVALI Taskforce: Denitza P. Blagev MD, Dixie Harris MD, Michael J. Lanspa MD, Colin K. Grissom MD, and David W. Guidry MD

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