Rapid Recovery in an Adolescent with E-cigarette or Vaping Product Use Associated Lung Injury (EVALI)

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Introduction: EVALI is a relatively new, poorly characterized and sometimes fatal clinical syndrome that has been the subject of intense attention in recent months. EVALI's presentation can be sudden with acute respiratory symptoms such as hypoxia and cough or gastrointestinal symptoms such as acute abdominal pain, nausea, vomiting, diarrhea and weight loss. Here, we present the case of a young man who presented with EVALI following repeated exposure to e-cigarettes containing nicotine and CBD oil. Case: A 13-year-old Caucasian male with a past medical history significant for anxiety presented with worsening left side acute on chronic abdominal pain, nausea, vomiting, low grade fevers and 13 kg weight loss. Laboratory findings were significant for leukocytosis and markedly elevated C-reactive protein. He was found to have significant hypoxemia soon after his admission requiring supplemental oxygen. Extensive gastrointestinal, infectious and rheumatologic workup was negative. Subsequent chest CT demonstrated multifocal ground glass/crazy paving pulmonary opacities with scattered IV methylprednisolone had rapid improvement of oxygen saturation and gastrointestinal symptoms. He was started on nicotine replacement therapy using patches. Systemic steroids were tapered over 3 weeks. C-reactive protein was within normal limits at the end of steroid taper. Repeat chest CT 1 month from initiation of systemic steroids showed minimal residual scattered subsegmental ground glass opacities with near complete resolution of previously seen pulmonary parenchymal and interstitial lung disease. He also demonstrated weight gain in addition to complete resolution of respiratory and gastrointestinal symptoms. Conclusion: EVALI remains a diagnosis of exclusion. Lack of specific clinical symptoms and radiologic findings often delays the diagnosis. There are no pathognomonic radiologic findings for EVALI. The constellation of respiratory, gastrointestinal and constitutional symptoms along with thorough clinical history are paramount for diagnosis. Treatment with systemic corticosteroids have been proven effective in many cases. Education regarding dangers of E-cigarettes may contribute in preventing such illness. We strongly believe that an E-cigarette quit program geared toward adolescents may have significant impact, as many may have anxiety issues complicating cessation efforts.

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