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Letter to the Editor

E-cigarette or vaping product use-associated lung injury: need for screening pediatric patients in emergency and triage for vaping

Sir,

In Pakistan, 23.9 million individuals (19.1%) smoke regularly, while 15.9 million (12.4%) use smokeless tobacco (SLT). Around 6.2% of the population uses vaping or e-cigarettes. In a study from Sindh, 65.6% of participants reported being aware of e-cigarettes, and 6.2% said they used them.[1] The prevalence of tobacco use among Pakistani youth (ages 13–15) is estimated at 10.7%, with boys at 13.3% and girls at 6.6%.[2] Pakistan is also emerging as a major vaping hub, with projected e-cigarette revenue reaching $77.2 million by 2024 and an annual growth rate of 1.39%. According to the Hangsen Group, there are approximately 2,500 vape specialty stores and 5,000 sales outlets nationwide, with Karachi as the main distribution center.[3]

In the U.S., a region with similar statistics experienced an outbreak of E-cigarette or vaping product use-associated lung injury (EVALI) beginning in March 2019, resulting in over 2,800 hospitalizations and 68 deaths by February 2020.[4] The bronchoalveolar lavage (BAL) from these patients revealed the presence of vitamin E acetate in 48 out of 51 cases.[5] This compound was illegally used as a diluent in counterfeit, low-cost THC-containing cartridges, becoming common in 2019, the same year the EVALI outbreak began.[6] The compound contributes to lung injury by disrupting surfactant function and causing inflammation. Lung scans reveal patterns such as lipoid pneumonia, which is linked to the inhaled oils interfering with the lung's lipid membranes and surface tension regulation.[7] E-cigarettes have other systemic side effects due to components such as nicotine, propylene glycol, flavoring agents, and metals, and, due to their physiology, adolescents are more susceptible to the damage.[8] The key to treating patients with EVALI is early diagnosis, and sometimes this can be a challenge. It has been described as the "Great Mimicker" of COVID-19 pneumonia and a diagnostic conundrum. This is largely due to the wide variety of complaints it might elicit. Most of the time, EVALI presents with nonspecific respiratory symptoms. A study of 2,155 patients revealed that approximately 95% of cases initially presented with respiratory complaints such as cough, chest pain, or shortness of breath.[9] At the same time, 77% also reported gastrointestinal symptoms like nausea or abdominal pain, and 85% experienced constitutional symptoms such as fever, chills, or weight loss. Pediatric patients appear to exhibit a broader symptom profile, with a higher incidence of non-respiratory symptoms, and some even present without any respiratory complaints. Another case series reported that individuals presented with hemoptysis and were later found to have a history of vaping.[6]

The variability in symptoms makes EVALI a diagnostic challenge, especially during viral seasons, underscoring the need for thorough history-taking, including ENDS use. Some cases have even presented with hemoptysis, later linked to vaping. Following CDC and ALA guidelines, clinicians should routinely ask young patients about e-cigarette use. Tools like CRAFT 2.0, specially designed for 12-21 year olds, can aid in screening and diagnosis.[10] Routine screening, public awareness, and strong regulation are key to protecting youth from vaping-related harm.

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