

Vaping-related lung illness-the latest updates

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The use of smoking substitutes has increased significantly in the last several years [1]. The development of electronic cigarettes (e-cigarettes, ecigs, vapes, and electronic nicotine delivery systems [ENDS]) post-2003, as an alternative to the regular cigarette, in order to curtail the deadly effects of smoking was a revolutionary step [1]. The availability and uncontrolled access to such substitutes have taken over the younger generation [1,2]. In the year 2014, WHO reported the existence of more than 450 brands of various types of e-cigarettes/vapes [3]. This clearly shows the broad market and heavy demand for this recreational habit [1].

Recently e-cigarettes have been in news due to a severe vaping related lung illness (VRLI) that was reported from the US [4]. These cases have been first reported in five states viz—Wisconsin, Illinois, California, Indiana, and Minnesota [2]. Besides, there have been unconfirmed reports from certain other states like in New York, Indiana, and Utah [2]. However, as per the latest release from the CDC, a total of 380 confirmed and probable cases of VRLI have been reported across 36 states and one union territory of the US [4]. There have been six vaping-related deaths reported from California, Illinois, Indiana, Kansas, Minnesota, and Oregon [4].

A majority of sufferers have been young adults [4]. And the thing that is common in all such cases is the habit of vaping using an electronic cigarette-like device that aerosolizes substance for inhalation [2]. Also, a number of these patients reported the use of tetrahydrocannabinol (THC) products, the psychoactive ingredient in marijuana that causes the 'high' sensation [2,4]. Some cases reported vaping nicotine, while some patients used both [4]. The CDC, however, stated that no specific product or ingredient has been linked with certainty to the VRLI [4].

The case definition of VRLI counts only breathing illnesses with an abnormal chest radiograph, patient with a recent history of vaping, and a patient who had lab work done to rule out infectious diseases or other possible causes [4]. The classical signs and symptoms of VRLI are associated with the respiratory system due to an inhalational injury [4]. Patients complain of symptoms such as cough, shortness of breath, and fatigue [4]. Few cases have also mentioned fever, chest pain, weight loss, nausea, vomiting, and diarrhea [4]. The chest radiographs of these patients have shown

abnormalities like bilateral opacities throughout the lungs and on CT imaging, diffuse ground-glass opacities, often with sub-pleural sparing have been seen [2,5]. Almost all patients had no such illness in the past and had no other signs of infection [4]. The condition of these patients dwindled over days or weeks, and they had to be admitted to a hospital for further management [2]. During the stay in the hospital improvements with mechanical ventilation and corticosteroids was noted [2]. There are reports of at least three distinct manifestations of vaping-associated pulmonary injury: lipoid pneumonia, cryptogenic organizing pneumonia, and alveolar hemorrhage syndrome however still further research is essential to prove these [6]. As per the CDC, the current management involves an 'aggressive supportive care' in all possible or suspected cases, under the guidance and opinion of pulmonary, infectious disease, and critical care specialists [2].

In the current scenario, precaution seems better than cure. The use of e-cigarettes is growing exponentially especially in the younger generation and thus they should be counseled about the potential harms of vaping [1]. The parents should talk to their children and explain the harmful effects [2]. Extensive efforts from the national and state governments, NGO's, volunteers, etc. are important for the spread of healthcare information to masses. The role of large scale population-based studies for studying the impact of the vaping on the health of the user are essential and the need of the hour. The regulatory bodies like the FDA should take necessary legal actions on the use and sale of illicit substances used in vaping.

Conflicts of interest

None declared

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