

Respiratory illness linked with the use of electronic cigarettes: An alarming situation

Farheen Malik¹, Jawad Ahmed², Suha Safi Qureshi³, Rohan Kumar Ochani⁴

Madam, Since the year 2010, the use of electronic cigarettes (e-cigarettes) has increased significantly. This could be attributed to the devices being marketed among the masses as a healthier alternative and facilitator for the cessation of conventional smoking. However, there is little scientific evidence to support these claims, and therefore their efficacy as a safer choice to tobacco smoking still remains disputed.¹

In Pakistan, the use of electronic cigarettes or "vaping" is highest among adolescents, mainly for recreational purposes. A study conducted in Pakistan revealed that a significant amount of population was oblivious to the detrimental effects with the use of e-cigarettes and a major proportion considered e-cigarettes safe for use in pregnancy.²

Considering the six deaths which occurred in the United States of America (USA) due to vaping, the safety and regulation of e-cigarettes are now being reconsidered. As of September 2019, Centers for Disease Control (CDC) reports 380 cases of lung illness associated with the use of e-cigarette products.³ While the Food and Drug Administration (FDA) along with the CDC is currently investigating the cause of this vaping illness, liquids which contained cannabinoid products namely tetrahydrocannabinol (THC) and vitamin E acetate are presently being considered as the main culprit.

A study conducted among adolescents in the state of Colorado found that the use of e-cigarettes is significantly associated with symptoms of wheezing, and bronchiolitis such as the daily productive cough.⁴ Advanced experimental studies suggest that vaping increases the susceptibility of the airway to infections such as pneumococcal.⁵ The results from two randomized controlled trials published in a single study showed that vaping caused injury to airway epithelium (seen by increased CC16 levels and small airway constriction).

.....
^{1,2,4}4th Year MBBS Student, Dow Medical College, Dow University of Health Sciences, Karachi, Pakistan; ³4th Year MBBS Student, Ziauddin University, Karachi, Pakistan

Correspondence: Rohan Kumar Ochani. e-mail: rohanochani@gmail.com

Moreover, vaping led to decreased transcutaneous oxygen tension (a measure of the level of oxygen of tissues underneath the skin) and impaired arterial oxygen tension.⁶ The toxicity of e-cigarettes should be gauged in relevant model systems such as bronchial or alveolar epithelium. Prospective cohort studies should be carried out that follow individuals using e-cigarettes for a significant duration of time. Preventive guidelines issued by CDC recommend that e-cigarettes should not be considered as an alternative for smoking cessation. Pregnant women and young people should refrain from using e-cigarettes. Additionally, vaping products should not be bought from unauthorized places. As the use of e-cigarettes is increasing in Pakistan, the need to address this issue is dire. Public awareness and educational messages should be broadcasted on television. Health-care professionals should be vigilant and, must advise their patients and community against the use of e-cigarettes.

Disclaimer: None to declare

Conflict of interest: None to declare

Funding disclosure: None to declare

References

1. Tomashefski A. The perceived effects of electronic cigarettes on health by adult users: a state of the science systematic literature review. *J Am Assoc Nurse Pract.* 2016;28:510-5.
2. Sarfraz M, Khan HAR, Urooba A, Manan Z, Irfan O, Nadeem R, et al. Awareness, use and perceptions about E-cigarettes among adult smokers in Karachi, Pakistan. *J Pak Med Assoc.* 2018;68:147.
3. Centers for Disease Control and Prevention. Smoking & Tobacco Use. [Online]. [Cited 2019 Sept 10]. Available from: <https://www.cdc.gov/tobacco/index.htm>.
4. McConnell R, Barrington-Trimis JL, Wang K, Urman R, Hong H, Unger J, et al. Electronic cigarette use and respiratory symptoms in adolescents. *Am J Respir Crit Care Med.* 2017;195:1043-9.
5. Miyashita L, Suri R, Dearing E, Mudway I, Dove RE, Neill DR, et al. E-cigarette vapour enhances pneumococcal adherence to airway epithelial cells. *Eur Respir J.* 2018;51:1701592.
6. Chaumont M, van de Borne P, Bernard A, Van Muylem A, Deprez G, Ullmo J, et al. Fourth generation e-cigarette vaping induces transient lung inflammation and gas exchange disturbances: results from two randomized clinical trials. *Am J Physiol Lung Cell Mol Physiol.* 2019;316:L705-L719.

<https://doi.org/10.5455/JPMA.65779>