

Vaping-associated lung illness in BC

An outbreak of severe pulmonary illness associated with vaping (the act of inhaling an aerosol produced by an electronic cigarette or related product) was first reported in the United States in August 2019, and a retrospective review has identified cases as early as April 2019.¹ To determine if vaping was associated with lung illness in British Columbia, in September 2019, the Provincial Health Officer declared “severe pulmonary disease associated with vaping or dabbing,” generally referred to as vaping-associated lung injury, or VALI, a reportable illness. This order was part of a national surveillance system under which a confirmed VALI case has a history of vaping in the 90 days prior to symptom onset, pulmonary infiltrates, and no plausible alternative diagnosis. A probable case has a similar presentation but pulmonary infection cannot be excluded.² The BC Centre for Disease Control has coordinated surveillance of VALI in BC.

By February 2020, 2807 hospitalizations and 68 deaths due to VALI had been reported to the US Centers for Disease Control and Prevention (CDC).³ As for Canada, by April 2020, 20 cases and no deaths had been reported to the Public Health Agency of Canada.⁴

Five VALI cases were reported in BC: one confirmed and four probable. Cases were identified in both urban and rural areas. Age range of cases was 16 to 31 years; three were male and two female. Cases related using a variety of vaping products including tetrahydrocannabinol (THC) wax, shatter (a highly concentrated THC product), e-liquid, and flavored

nicotine. Vitamin E acetate was detected in both broncho-alveolar lavage⁵ (BAL) and vaping products⁶ used by some US cases. In Canada, vitamin E acetate has not been detected in products tested by Health Canada, and no BAL samples from VALI cases have been tested (written communication, T Procter, Public Health Agency of Canada, September 2020).

In response to the increased prevalence of vaping, especially among youth, BC has implemented several vaping control measures.

In the US, numbers of VALI cases peaked in December 2019,⁷ and by February 2021 the CDC discontinued nationwide case reporting.³ A reasonable interpretation of the surge in cases is that the temporary use of an adulterant, likely vitamin E acetate, caused pulmonary injury; cases declined as these adulterated products made their way through the supply chain. Still, a June 2020 CDC report described eight VALI cases hospitalized in California in April 2020.⁸ It has been suggested that VALI is not a distinct illness, but a spike of acute illness on a background of more heterogeneous harmful effects of vaping.⁹

VALI remains reportable in BC and Canada, and the most recent case in BC was notified in February 2020. Given the low number of cases and the absence of vitamin E acetate in case-related vaping products, cases here may represent background pulmonary illness. The COVID-19 pandemic may have contributed to more recent cases not being detected.

In response to the increased prevalence of vaping, especially among youth, BC has implemented several vaping control measures. Notably, the sales tax on vaping products was raised

from 7% to 20% on 1 January 2020. Other changes include regulations on nicotine content, packaging, advertising, and access to vaping products for persons under 19 years of age. Though these measures are meant to address nicotine dependency, nicotine destigmatization, and mental health effects of vaping, they may also reduce the incidence of VALI, whether due to adulterants or otherwise. ■

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