

Case report finds 'popcorn lung' in patient using e-cigarettes

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Researchers from White River Junction VA Hospital, in Junction, Vermont, will present a case report of acute inhalation lung injury related to the use of e-cigarettes and a flavored e-cigarette liquid containing diacetyl.

The case study presented involves a 60-year-old cigar-smoking male who was admitted with weakness, chills, and cough. No significant radiologic abnormalities were found, but he was treated with ceftriaxone and azithromycin and discharged after three days feeling normal. One month later the patient presented with similar symptoms. Additionally, he had a fever and was hypoxemic. On examination, he had bilateral upper lung zone crackles and bilateral upper lobe predominant ground-glass opacities on chest CT. After further questioning, the patient reported using strongly flavored e-cigarettes prior to each admission. The patient was diagnosed with inhalation injury and suspected acute hypersensitivity pneumonitis related to electronic cigarette use. The patient did not use e-cigarettes again and had no further symptoms. A follow-up CT scan and pulmonary function test at three months were normal.

E-cigarette liquid contains nicotine, propylene glycol, vegetable glycerin, and flavorings. Recent reports estimate that 69 percent of sweet flavored liquids contain diacetyl. Diacetyl is used to produce a rich, buttery flavor and has been tied to a 2000 report in which eight former employees of the Gilster-Mary Lee popcorn plant developed bronchiolitis obliterans. The case garnered significant media attention and OSHA subsequently

recommended respiratory protection for all workers in microwave popcorn production. Since that time, bronchiolitis obliterans has been referred to as "popcorn lung" or "popcorn worker's lung."

"The use of e-cigarettes in the United States is increasing rapidly and the flavorings used, many of which contain diacetyl, may be harmful. This case adds to the growing body of research indicating e-cigarettes pose a health risk," said Dr. Graham Atkins, of White River Junction VA Hospital, lead researcher.

More information: Further results will be shared during CHEST 2015 on Tuesday, October 27, at 1:30 pm at Palais des congrès de Montréal, Exhibit Hall. The study abstract can be viewed on the *CHEST* website, [journal.publications.chestnet. . . px?articleID=2457240](http://journal.publications.chestnet.org/doi/10.1378/chest.1234567890)

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