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Title: Acute impact of a single e-cigarette smoking on symptoms, vital signs and airway inflammatory response

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Body: E-cigarette is a battery powered electronic nicotine delivery device. Many smokers use it, because it is marketed as a safer alternative to smoking. The aim of our study was to evaluate the acute effect of smoking a single e-cigarette for 10 minutes on symptoms, vital signs, exhaled CO, exhaled NO and airway temperature in never smokers and in smokers with and without chronic airway obstruction. We studied 37 consecutive subjects (17 male), aged: 42 ± 14 yr (mean \pm SD). Nine were never smokers, 15 were smokers with normal spirometry and 13 smokers with chronic airway obstruction (7 asthmatics, 6 with COPD). All subjects answered a questionnaire about symptoms (cough, sore throat, eye irritation, dizziness and feeling of satisfaction) immediately after smoking a single e-cigarette for 10 minutes. We also measured oxygen saturation (SpO₂), heart rate (HR), exhaled CO, exhaled NO and airways temperature pre and post smoking. After smoking a single e-cigarette for 10 minutes, our group reported cough (65%), sore throat (68%), irritation in eyes (24%), difference in taste (78%), dizziness (24%) and feeling of satisfaction (51%). In addition, there was a statistically significant: a) increase in HR (from 75 ± 10 to 92 ± 17 , $p < 0,001$), b) increase in eCO (from 13 ± 12 to 15 ± 9 , $p = 0,03$), and c) a decrease in SpO₂ (from $97,46 \pm 2$ to $96,76 \pm 1$, $p = 0,012$) after smoking. We conclude that after smoking a single e-cigarette for 10 minutes there was a change in symptoms, vital signs and indices of airway inflammation in a statistically significant manner. Further studies are needed to establish the immediate and long-term effects of e-cigarette smoking.