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## Effectiveness and safety of electronic cigarettes among sole and dual user vapers in Kuantan and Pekan, Malaysia: a six-month observational study

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### Abstract

**Background:** Current studies on electronic cigarettes (ECs) have assessed the smoking cessation effectiveness and safety of EC among sole EC users. However, in Malaysia and elsewhere, most EC users also smoke conventional cigarettes (CCs). We aimed to investigate nicotine cessation for both ECs and CCs. Additionally, safety issues among sole EC and dual (EC and CC) users over a six-month period were reported.

**Methods:** We observed 218 sole Malaysian EC and dual users over 6 months from June 2015 to November 2015. Both groups underwent exhaled breath carbon monoxide and saliva cotinine analyses to verify their nicotine cessation from both EC and CC use. Adverse events and withdrawal symptoms were assessed based on self-reports.

**Results:** Only 3.3% of observed users quit both ECs and CCs, whereas 20.5% quit smoking CCs. Quitting ECs and CCs was significantly higher among sole EC users (5 vs 2, respectively; OR: 5.62; P = 0.036) than it was among dual users, a result that was similar for CCs smoking (29 vs. 15; OR: 6.33; P <= 0.001). No severe health issues were reported over the entire study period.

**Conclusion:** The rates of quitting CCs and ECs were higher in sole EC users than those in dual users. No serious health effects were reported over 6 months in either group. ECs may serve as a smoking cessation aid in Malaysia, but appropriate regulations are necessary to encourage sole EC use to ensure product quality. Large randomised clinical trials (RCTs) with a longer follow-up are required to better measure the effectiveness and safety of ECs use alone and in combination with CCs.

### Keywords

**Author Keywords:** [Electronic cigarette](#); [Safety](#); [Effectiveness](#); [Conventional cigarette](#); [Carbon monoxide](#)

**KeyWords Plus:** [CARBONYL-COMPOUNDS](#); [SMOKING-CESSATION](#); [NEUROBIOLOGY](#); [BENEFITS](#)

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