CLINICAL PRACTICE

E-cigarettes: Guiding patients in a time of uncertainty
by Arlene Court

ABSTRACT

With the emerging popularity of electronic cigarettes, oncology nurses need to be well informed in order to guide patients in making choices that support a healthy lifestyle. Essential information is provided in this article through a review of conventional and electronic cigarette use and current recommendations. Concerns associated with electronic cigarettes are discussed including nicotine addiction, lack of regulation, and lack of evidence as a smoking cessation aid. The potential for harm reduction is also highlighted. Suggestions are provided for how patients with cancer can be guided regarding e-cigarette use.

Key words: electronic cigarettes, oncology, nursing, smoking cessation

It is essential for oncology nurses to have knowledge about new trends that may impact the health of patients diagnosed with cancer. Increased interest and use of electronic cigarettes (e-cigarettes), as an alternative to conventional cigarettes illustrates such a trend (Zhu et al., 2014). An understanding of the history, design, and operation of e-cigarettes, their current use in Canada, as well as the issues surrounding them will facilitate oncology nurses’ ability to provide informed guidance to patients.

E-CIGARETTES

The patent for e-cigarettes was issued in 2004 (Franck et al., 2014). E-cigarettes are one type of electronic nicotine delivery systems (ENDS) that heats a solution creating an aerosol, which is then inhaled by the user (WHO Framework Convention on Tobacco Control, 2014). The ingredients of the liquid can vary between manufacturers, but is mainly composed of propylene glycol and agents that add flavour (WHO Framework Convention on Tobacco Control, 2014). E-cigarettes may or may not contain nicotine. When present, the amount of nicotine absorbed is impacted by factors such as inhalation depth and how often the product is used (WHO Framework Convention on Tobacco Control, 2014). E-cigarettes are made to feel and look similar to conventional cigarettes.

SMOKING CESSATION AND THE ROLE OF THE ONCOLOGY NURSE

The Canadian smoking rate is at its lowest at 15%, with 11% identifying they are daily smokers and 4% are occasional smokers (Statistics Canada, 2012). The highest incidence of smoking is found within the age groups 18–19 and 20–24 with both at 18%. Despite smoking rates being at their lowest, the impact of smoking on health is still present. Oncology nurses are responsible for engaging with patients and families to ensure awareness of the significance of a healthy lifestyle and factors that may impact their health and treatment outcomes (Canadian Association of Nurses in Oncology, 2006). The International Society of Nurses in Cancer Care (ISNCC) (2014) specifically suggests the nurse is to assess tobacco use and ensure treatment for dependence. Additionally, smoking cessation should be endorsed given that smoking can increase the side effects of cancer treatment and the risk for development of a second malignancy (ISNCC, 2014). With an emphasis on replicating conventional cigarettes and the potential to contain nicotine, oncology nurses must be aware of current regulations and the use of e-cigarettes in Canada.

CURRENT E-CIGARETTE RECOMMENDATIONS

In 2009, Health Canada provided this recommendation, “Health Canada is advising Canadians not to purchase or use electronic smoking products, as these products may pose health risks and have not been fully evaluated for safety, quality and efficacy by Health Canada” (Healthy Canadians, 2009, p. 1). The recommendation identifies that electronic smoking devices are not authorized to be sold in Canada and other approved smoking cessation aids are available. More recently, the Government of Canada’s Minister of Health requested the House of Commons Standing Committee on Health to “study their potential risks and benefits, seek advice from a variety of health stakeholders, and provide a report” (Parliament of Canada, 2015, para. 1). The final report, released in March 2015 with 14 recommendations, has been tabled and is now before government for response.

E-CIGARETTE USE AMONGST CANADIANS

Though not authorized here in Canada, the Canadian Tobacco, Alcohol and Drug Survey (CTADS) (Government of Canada, 2013) reported that 9% of Canadians 15 years and older have tried an e-cigarette. This percentage increased to 20% amongst youth aged 15–19 and young adults aged 20–24. Of those who have tried an e-cigarette, 51% said it did not contain nicotine, 26% said it did, and 19% were unsure. Access to these products is made easy through internet purchases. The growth of e-cigarettes is reflected in the number of brands for sale on the internet, which increased from 288 in 2012 to 460 in 2014 (Zhu et al., 2014).

With a focus on smoking and smoking cessation, insight into e-cigarette

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use and the relationship to smoking status is necessary. Czoli, Hammond, and White (2014) explored the prevalence of e-cigarettes use among Canadian youth and young adults (ages 16–30). From a total of 16.1% e-cigarette users, 5.2% were non-smokers, 18.9% former smokers, and 34.5% were current smokers. In a four-country survey, which included Canada, the International Tobacco Control asked current ENDS users why they used e-cigarettes. The majority identified to reduce harm and to help quit traditional cigarettes (Adkison et al., 2013). The Canadian perspective is also provided by the CTADS as 51% of e-cigarettes “ever users” (current and former smokers) used it as a smoking cessation aid (Government of Canada, 2013). The prevalence of e-cigarette use in Canada compels oncology nurses to be aware of the concerns and controversies surrounding their use.

**CONCERNS ASSOCIATED WITH E-CIGARETTES**

There are specific concerns regarding e-cigarettes as seen through discussions within policy statements by health organizations and governmental recommendations. An overarching concern, as highlighted by the American Heart Association (AHA), is the possibility that e-cigarettes will “renormalize” smoking (Bhatnagar et al., 2014). Other aspects of e-cigarettes that are expressed as concerning include: presence of nicotine, lack of regulation, and lack of evidence for support as a smoking cessation aid.

**Availability of a nicotine product**

A significant issue is the potential nicotine presence within e-cigarettes. The AHA acknowledges the possibility of nicotine addiction through the advisement that e-cigarettes should be monitored, as they can initiate or maintain an addiction or be an opportunity for ex-smokers to start smoking again (Bhatnagar, 2014).

**Youth access to nicotine.** The Canadian Paediatric Society (CPS) (2015) position statement suggests that e-cigarettes may not produce the same type of smoke, but “they are essentially nicotine delivery devices” (p. 2). The CPS proposes that e-cigarettes may lead to nicotine addiction amongst youth due to easy access and therefore recommends that the same age restrictions apply to e-cigarettes as they do for tobacco products.

**Lack of regulation**

Another issue, as suggested by the American Association for Cancer Research (AACR) and the American Society of Clinical Oncology (ASCO), is the lack of regulation resulting in unknown contents and, therefore, a lack of true understanding about the health implication of e-cigarettes (Brandon et al., 2015). It is interesting to note the earlier statement from the CTAS survey where 19% of e-cigarettes users did not know if it contained nicotine.

**Proposed changes.** The necessity of regulation is made evident by the recommendations from the House of Commons Standing Committee of Health, which proposes: (1) regulation of e-cigarettes, (2) research regarding the health effects of e-cigarettes, and (3) a requirement for manufacturers to identify ingredients (Parliament of Canada, 2015).

**Insufficient evidence as a smoking cessation aid**

In regards to the use of e-cigarettes as a smoking cessation aid, health organizations assert insufficient evidence to support their use (Brandon et al. 2015; Bhatnagar et al., 2014). There have been significant product changes and it is proposed that previous studies cannot be used as evidence since e-cigarettes used within those studies are now outdated (Brandon et al. 2015). ACCR/ASCO position statement suggests there is insufficient evidence to recommend ENDS to patients diagnosed with cancer due to the lack of research regarding their safety for patients undergoing surgery, chemotherapy, or radiotherapy (Brandon et al., 2015).

**POTENTIAL FOR HARM REDUCTION**

There is acknowledgment of the potential harm reduction offered by e-cigarettes. The AHA suggests the popularity of e-cigarettes when compared to other nicotine replacement therapy products provides “an opportunity for harm reduction if smokers use them as substitutes for cigarettes” (Bhatnagar et al., 2014, p.1425). The ACCR/ASCO policy statement also highlights the need to prevent health consequences from e-cigarettes especially in youth, but also acknowledge the potential harm reduction they may provide (Brandon et al., 2015).

Even in the presence of potential harm reduction, the lack of evidence and regulation and risk for nicotine addiction clearly indicate a cautionary approach should be taken with e-cigarettes. This presents oncology nurses with a challenge when making recommendations to patients.

**TIPS FOR HOW TO GUIDE PATIENTS**

The International Association for the Study of Lung Cancer, as well as the AACR/ASCO policy statements provide guidance when addressing e-cigarettes with patients. Of essence is the initial advice to patients to stop smoking given the existing and clear knowledge about the impact of conventional cigarette smoking on treatment outcomes and overall health (Cummings et al., 2014). Weaver et al. (2014) provide an essential component for this initial step, which is to ask about all types of tobacco products, including e-cigarettes, as patients may not realize they are considered a tobacco product.

It is necessary for patients to be supported with their quit attempts (Cummings et al., 2014). Oncology nurses must ensure patients are aware of supports available and provide referrals to appropriate treatment programs. Patients should also be informed regarding the lack of evidence for e-cigarettes including the possible risks (Brandon et al., 2015). Finally, if a patient is using or considering using an e-cigarette to aid in their cessation efforts, they should continually be offered evidence-based smoking cessation aids and followed for effects of e-cigarette use (Cummings et al., 2014).
CONCLUSION
Oncology nurses have a role in promoting healthy living. In doing so, there is a need to address tobacco use. It is essential for oncology nurses to engage with patients—to understand their smoking status and the potential or actual use of e-cigarettes—to ensure appropriate guidance, education, and recommendations are provided. Due to the rapidly changing environment surrounding e-cigarettes, it is necessary to be aware of new information and regulations to enable an evidence-based approach to smoking and smoking cessation.

REFERENCES