E-cigarettes are becoming an increasingly popular alternative to smoking. However, it is still not clear whether they are a safe and effective way of quitting

Are e-cigarettes a safer alternative to smoking?

In this article...
- Definition of e-cigarettes
- Research on the effectiveness of these devices
- Advice to give patients about their use

E-cigarettes: product variety
Tobacco is smoked to obtain nicotine, mainly to relieve nicotine withdrawal symptoms. Although nicotine has few serious adverse effects, smokers expose themselves to serious harm from tar and gases, including oxidant gases and carbon monoxide, from cigarettes (National Institute for Health and Care Excellence, 2012).

Replacing conventional cigarettes with e-cigarettes and similar devices could appear to be reducing harm from cigarettes, and a body of evidence is developing to support this (ASH, 2014). However, currently, the evidence for smoking cessation is stronger, and NICE recommends a programme of behavioural support and a licensed nicotine replacement product or medication (NICE, 2012).

E-cigarettes are not regulated medicines so the ingredients and amount of nicotine contained in each e-cigarette may vary. In response to this, the Medicines and Healthcare Products Regulatory Agency is planning to introduce regulation from 2016.

The difficulty when looking at the effectiveness of e-cigarettes in helping smokers quit is that the range of devices is vast and they work in different ways. There are many formulas and flavours; these are tested as food products for oral consumption – their effects on airways when inhaled have not been studied.

These issues were discussed at the E-Cigarette Summit held in November 2013 in London (http://e-cigarette-summit.com), which was attended by health professionals and policy makers. Discussions highlighted the range of flavours, that the long-term effect on airways is unknown and that the products have the potential to be an irritant.
Recent research on e-cigarettes

Last year, two studies were published looking at the effectiveness of e-cigarettes in cessation.

The first was a randomised control trial studying 697 adults who wanted to stop smoking (Bullen et al, 2013). The study investigated whether e-cigarettes were more effective than nicotine patches at helping smokers to quit. Participants were given electronic cigarettes with 16mg of nicotine, a daily 2mg nicotine patch or placebo electronic cigarettes. They were studied from the week before they intended to stop smoking until 12 weeks after their designated quit day.

The study found that e-cigarettes, with or without nicotine, were moderately effective at helping smokers to quit, with similar achievement of abstinence as with nicotine patches. However, the researchers said more studies were urgently needed to establish the benefits and harms of e-cigarettes as they were unable to follow up the results of 22% of participants.

The second 12-month randomised control trial looked at the efficiency and safety of e-cigarettes (Caponetto et al, 2013). Three hundred smokers, aged 18-60 years, who did not intend to quit were divided into three groups. One group was given up to four 7.2mg nicotine cartriges per day, the second 2mg nicotine cartriges for six weeks followed by up to four 5.4mg nicotine cartriges per day for six weeks, and the third group up to four placebo cartriges per day.

While all three groups smoked fewer cigarettes at the end than at the start of the study, after 52 weeks there were no significant differences between them in terms of the number of cigarettes smoked or quit rates. The study also found that, for smokers not intending to quit, the use of e-cigarettes, with or without nicotine, decreased cigarette consumption and resulted in their being able to stop smoking without significant side-effects.

Again, because of the high drop-out rate (39%), researchers recommended that more studies were needed to establish the safety and effectiveness of e-cigarettes.

Using e-cigarettes in practice

In clinical practice, the lack of robust evidence makes it difficult for health professionals to recommend e-cigarettes or related devices. However, patients are using e-cigarettes to help them quit and practitioners need to respond to this development.

People using e-cigarettes should still be offered smoking cessation referrals because quitting is thought to have better outcomes than harm reduction. Patients should be informed of the lack of robust evidence supporting the use of e-cigarettes to stop smoking, but it is important to be non-judgemental if they are using them. If patients are not ready to try quitting, this may be a harm reduction opportunity and, in time, may lead to cessation.

Advice on cessation services is outlined in Box 1 and use of e-cigarettes in Box 2.

E-cigarettes: the future

Once regulated, e-cigarettes and related devices may become useful in smoking cessation as part of a treatment plan that includes behavioural support.

However, more research is required to provide evidence on how effective this approach would be in helping people to quit, and this research needs to compare like with like. For example, it could compare: behavioural support; nicotine patch and e-cigarettes with behavioural support; nicotine patches and a short-acting nicotine replacement product.

Smokers have the best chance at quitting if they have medication combined with behavioural support for at least 12 weeks, and a combination approach to nicotine replacement therapy is more effective than a single therapy (NICE, 2008). This means future research needs to compare e-cigarettes or similar devices with a combination approach (NICE, 2012a; 2013b). More research is also needed to establish how e-cigarettes work and their effect on the body.

References


