Smoking cessation

Are e-cigarettes more effective than nicotine replacement therapy to help smokers quit?

One year smoking cessation rates were significantly higher in those who used e-cigarettes compared with those using traditional nicotine replacement therapy (NRT) products, in a UK prospective study. However, many more of those on e-cigarettes who had quit ordinary cigarettes still used the substitute while most of those who quit using NRT were free from treatment.

A total of 2,045 individuals attending stop smoking services in London, Leicester and East Sussex were screened. Of these, 886 were randomised to the e-cigarette group (439) or NRT group (447). The median age of participants was 41 years. All participants received multisession behavioural support.

The NRT group were offered whichever product or combination of products (typically a short-acting NRT product with a long-acting one) they wanted and were free to change products during the study. In line with standard practice, they were given a three-month supply. The e-cigarette group were given a starter pack with an atomiser and 18 mg/ml nicotine liquid and were encouraged to buy further supplies.

Participants' levels of expired carbon monoxide (CO) were checked at baseline, four weeks, and 52 weeks. Adverse reactions and respiratory symptoms were recorded at all visits.

The primary outcome measure was sustained abstinence at one year according to the Russell Standard i.e. a self-report of smoking no more than five cigarettes from two weeks after the target quit date, validated biochemically by an expired CO < 8 ppm.

Overall, 78.8% of participants completed the 52-week follow-up. The rate of sustained one year abstinence was 18.0% in the e-cigarette group and 9.9% in the NRT group; relative risk (RR) 1.83 (95% CI: 1.30-2.58; P < 0.001).

Adherence was similar in both groups, but e-cigarettes were used more frequently and for longer than NRT. Among participants with one year abstinence, 80% (63 of 79) were using e-cigarettes at 52 weeks in the e-cigarette group and 9% (4 of 44) were using nicotine replacement in the NRT group.

E-cigarettes were felt to be more satisfying but throat or mouth irritation was reported more frequently in this group; 65.3 vs 51.2% in the NRT group. Nausea occurred more frequently in the NRT group 37.9 vs 31.3%.

The e-cigarette group reported greater reductions in the incidence of cough and phlegm production from baseline to 52 weeks than the NRT group; RR for cough 0.8 (95% CI: 0.6-0.9); RR for phlegm 0.7 (95% CI: 0.6-0.9).

The main concern with this study is that it was not blinded. Nevertheless, there does seem to be a clear indication that e-cigarettes produced better outcomes for quitting smoking than NRT. The difficulty, though, is that 12 months on, many more of those on e-cigarettes who had quit regular cigarettes still used the substitute while most of those who quit using NRT were free from treatment.

In accompanying editorials, the concern is raised that although e-cigarettes seem useful in quit strategies they may offer an undesirable model to youngsters, encouraging them to take up the alternative habit.[1] This is potentially made worse by offering nicotine liquids in a range of flavours.[2]

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Cardiovascular disease

Cuffless vs standard devices for ambulatory blood pressure monitoring

A novel cuffless device recorded significantly higher values for both systolic and diastolic blood pressure (BP) compared with standard equipment for 24-hour ambulatory BP monitoring, in a small study from Switzerland.

Data were analysed for 71 adults recruited at the University Hospital, Basel between May and December 2017. Patients with an indication for 24-hour ambulatory BP measurement were consecutively recruited as well as healthy volunteers. The mean age of participants was 49.3 years, and 51% were male.

Cuffless BP using the Somnotouch-NIBP, a device that uses pulse transit time (PTT) for beat to beat calculation, and standard 24-hour BP measurements were performed simultaneously on the left and right arm, respectively. The first standard BP measurement was used as the calibration measurement for the cuffless BP.

The cuffless device had only been previously validated over a very short time period - 25 minutes after initial calibration in a laboratory in the absence of dynamic conditions.

Mean 24-hour BP values for cuffless BP and standard BP were 140.8 versus 134.0 mmHg (P < 0.0001) for systolic and 85.8 versus 79.3 mmHg (P < 0.0001) for diastolic BP, respectively. Mean absolute systolic and diastolic disagreements between cuffless and standard BP were 10.2 and 8.2 mmHg, respectively.

The number of absolute differences between the mean 24-hour BP values