

Smoking cessation medicines and e-cigarettes: a systematic review, network meta-analysis and cost-effectiveness analysis

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Plain English summary

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Cigarette smoking is one of the main causes of early death both in the UK and worldwide. Three medicines, varenicline, bupropion and nicotine replacement therapy, are licensed in the UK to help people stop smoking. E-cigarettes can also be used as a stop smoking aid. We combined information from previous studies, including clinical trials, to determine which product was the safest, most effective and best value for money for the NHS. We compared treatments that were given alone as well as treatments that were combined with others, such as combination nicotine replacement therapy, varenicline combined with nicotine replacement therapy, varenicline combined with bupropion and bupropion combined with nicotine replacement therapy. The last three combined treatments are not currently licensed in the UK for smoking cessation. We also compared different treatment doses (low, high and standard doses). We found that most treatments were more effective than placebo in helping people to quit smoking. One of the combination treatments (varenicline at standard dose combined with nicotine replacement therapy at standard dose) was the most effective at getting people to quit smoking, followed by e-cigarette at low dose, varenicline at standard dose combined with bupropion at standard dose, and e-cigarette at high dose. We also found that smokers with higher tobacco dependence and smokers treated with counselling alongside medicines achieved a higher proportion of continuous quitting. We also found evidence that the standard dose of bupropion was associated with an increased risk of serious side effects compared with placebo. There was inconclusive evidence that any of the treatments increased the risk of major cardiovascular side effects. There was some evidence that smokers who received a standard dose of varenicline had an increased risk of major neurological and psychiatric side effects compared with those receiving a standard dose of bupropion. E-cigarette at low dose, varenicline standard plus nicotine replacement therapy standard and varenicline standard plus bupropion standard were the best value for money interventions, but further clinical trials comparing treatments against each other are needed to increase confidence in these findings.

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