Respirology

reuptake inhibitors (SSRIs) (see table at www.evidence-basedmedicine.com). Venlafaxine did not increase abstinence rates relative to placebo (table). In smokers who had quit, bupropion did not prevent relapse more than placebo (see table at www.evidence-basedmedicine.com). Bupropion plus NRT increased smoking cessation more than placebo (table). In smokers who had quit, bupropion did not prevent relapse more than placebo (see table at www.evidence-basedmedicine.com). Bupropion plus NRT increased smoking cessation more than NRT alone (see table at www.evidence-basedmedicine.com). Atypical antidepressants. Bupropion increased smoking cessation more than placebo (table). In smokers who had quit, bupropion did not prevent relapse more than placebo (see table at www.evidence-basedmedicine.com). Bupropion plus NRT increased smoking cessation more than NRT alone in 1 RCT but not in another unpublished RCT (table). Studies were pooled using fixed effects.

CONCLUSIONS

Bupropion and nortriptyline increase smoking cessation at ≥6 months. Selective serotonin reuptake inhibitors (SSRIs). 5 RCTs (3 of fluoxetine, 1 of paroxetine, and 1 of sertraline) showed that SSRIs did not increase abstinence at ≥6 months (see table at www.evidence-basedmedicine.com).

Do antidepressants increase long-term abstinence from smoking?

Antidepressants for increasing smoking cessation rates at ≥6 months*

<table>
<thead>
<tr>
<th>Comparisons</th>
<th>No of comparisons</th>
<th>Event rates</th>
<th>RBI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nortriptyline vs placebo</td>
<td>4</td>
<td>17% v 7.0%†</td>
<td>146% (58 to 281)</td>
<td>10 (7 to 17)</td>
</tr>
<tr>
<td>Bupropion vs placebo</td>
<td>19</td>
<td>19% v 10.5%</td>
<td>83% (61 to 108)</td>
<td>12 (9 to 17)</td>
</tr>
<tr>
<td>Bupropion + NRT vs placebo + NRT</td>
<td>1</td>
<td>22% v 9.8%</td>
<td>128% (46 to 256)</td>
<td>8 (6 to 17)</td>
</tr>
<tr>
<td>Bupropion vs NRT</td>
<td>1</td>
<td>18% v 9.8%</td>
<td>88% (18 to 198)</td>
<td>12 (7 to 50)</td>
</tr>
</tbody>
</table>

*NRT = nicotine replacement therapy. Other abbreviations defined in glossary; weighted event rates, NNT, and CI calculated from data in article using a fixed effects model.
†Event rates are weighted.

METHODS

Data sources: Drug names found in the Cochrane Tobacco Addiction Group’s specialized register, reference lists, recent reviews, and meeting abstracts were searched in PubMed and EMBASE/Excerpta Medica (March 2004). Investigators were contacted as needed.

Study selection and assessment: randomised controlled trials (RCTs) that compared any antidepressant with placebo or another treatment and assessed smoking abstinence at ≥6 months. Studies were pooled using fixed effects.

Outcomes: smoking abstinence at ≥6 months.

MAIN RESULTS

36 RCTs met the selection criteria. Tricyclic antidepressants. Nortriptyline increased smoking cessation; when added to nicotine replacement therapy (NRT), nortriptyline did not increase abstinence rates more than NRT alone (see table at www.evidence-basedmedicine.com). Monoamine oxidase inhibitors. Moclobemide did not show a statistically significant difference in abstinence at 12 months (see table at www.evidence-basedmedicine.com). Atypical antidepressants. Bupropion increased smoking cessation more than placebo (table). In smokers who had quit, bupropion did not prevent relapse more than placebo (see table at www.evidence-basedmedicine.com). Bupropion plus NRT increased smoking cessation more than NRT alone in 1 RCT but not in another unpublished RCT (table). 1 RCT showed that bupropion increased smoking cessation more than NRT (table). No statistically significant difference existed between bupropion and nortriptyline. Venlafaxine did not increase abstinence rates relative to placebo (see table at www.evidence-basedmedicine.com). Selective serotonin reuptake inhibitors (SSRIs). 5 RCTs (3 of fluoxetine, 1 of paroxetine, and 1 of sertraline) showed that SSRIs did not increase abstinence at ≥6 months (see table at www.evidence-basedmedicine.com).

CONCLUSIONS

Bupropion and nortriptyline increase smoking cessation at ≥6 months. Selective serotonin reuptake inhibitors do not increase abstinence. Any intervention that increases smoking cessation rates has favourable cost effectiveness because of the many years of life saved by quitting smoking. So one would anticipate that bupropion would be cost effective. Bupropion and nicotine patches had the most favourable profile in a recent analysis (cost per year of life saved of $2214 and $3901 for a man 50 and 54 y of age, respectively). An analysis based on a US RCT found an even lower cost per year of life saved for men 50–59 years of age ($879). Nortriptyline has not been analysed in detail, but it is available generically. This potential advantage may be counteracted by the need for closer medical monitoring and more frequent dispensing of smaller quantities to limit the risk for overdose. Overall, use of antidepressants for smoking cessation is a significant advance in helping patients because it gives more options for treatment, both initially and for retreatment. Bupropion is approved by the Food and Drug Administration for smoking cessation and has the most effectiveness data, so it remains first line treatment along with the various forms of NRT. Nortriptyline should be a second line agent because it has been studied less and has the potential for serious side effects. Success in smoking cessation often requires several attempts, and clinicians now have a relatively wide range of agents to choose from to maximise patients’ ability to quit.

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