Review: bupropion and nortriptyline each increase smoking cessation rates


Clinical impact ratings GP/FP/Primary care ★★★★★★ IM/Ambulatory care ★★★★★★
Respirology ★★★★★☆

Do antidepressants increase long-term abstinence from smoking?

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 Bupropion plus NRT increased smoking cessation more than NRT alone in 1 RCT but not in another unpublished RCT (table). 1 RCT showed that bupropion increased smoking cessation more than NRT (table).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.

Sources of funding: National Institute on Drug Abuse and NHS Research and Development Programme.

Abstract and commentary also appear in ACP Journal Club.

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%†</td>
<td>83% (61 to 108)</td>
<td>12 (9 to 16)</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 v 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.