Review: lifestyle or pharmacological interventions prevent or delay type 2 diabetes in people with impaired glucose tolerance


Q In people with impaired glucose tolerance, do lifestyle or pharmacological interventions prevent or delay type 2 diabetes?

METHODS

MAIN RESULTS

Meta-analysis using a random effects model showed that both lifestyle interventions (diet, exercise, or both) and pharmacological interventions (oral diabetes drugs [acarbose, flumamine, glipizide, metformin, or phenformin] or an anti-obesity drug [orlistat]) reduced the incidence of type 2 diabetes (table). 2 trials assessing troglitazone were excluded from the meta-analysis because the drug had been removed from several markets worldwide because of liver toxicity. In 1 trial, jiangtang bushen (a Chinese herbal) did not reduce diabetes (table). Adverse events related to pharmacological interventions (gastrointestinal and hypoglycaemic symptoms) were more common in the treatment groups (no statistical tests reported).

CONCLUSION

In people with impaired glucose tolerance, lifestyle or pharmacological interventions prevent or delay type 2 diabetes.

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Lifestyle or pharmacological interventions vs placebo to prevent or delay type 2 diabetes in people with impaired glucose tolerance*

<table>
<thead>
<tr>
<th>Outcome at mean 0.4–4.6 y</th>
<th>Comparisons</th>
<th>Number of trials (n)</th>
<th>Hazard ratio (95% CI)</th>
<th>NNT (credible interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 diabetes</td>
<td>Lifestyle v placebo†</td>
<td>10 (4452)</td>
<td>0.51 (0.44 to 0.60)</td>
<td>7 (5 to 9)</td>
</tr>
<tr>
<td></td>
<td>Oral diabetes drug v placebo‡</td>
<td>8 (4580)</td>
<td>0.70 (0.62 to 0.79)</td>
<td>11 (9 to 15)</td>
</tr>
<tr>
<td></td>
<td>Orlistat v placebo</td>
<td>2 (814)</td>
<td>0.44 (0.28 to 0.69)</td>
<td>6 (5 to 8)</td>
</tr>
<tr>
<td></td>
<td>Jiangtang bushen v placebo</td>
<td>1 (51)</td>
<td>0.32 (0.03 to 3.07)</td>
<td>Not significant</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary.
†Lifestyle interventions included diet, exercise, or both.
‡Oral diabetes drugs were acarbose, flumamine, glipizide, metformin, or phenformin.

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