The review was formed around the population (Type 2 diabetes in adult) of the Preferred Reporting Items for Systematic Review and Meta-glycemic control and bodyweight reduction, with mechanism of glucose control and reduces bodyweight, without the risk of hypoglycemia are sought after by prescribers.

Database searching

Additional records identified (n = 595)

Inclusion criteria not met

Wrong intervention

Wrong study design

Text articles excluded, with duplicates removed (n = 85)

Included (n = 148)

Records identified through database searching (n = 948)

Additional records identified through other sources (n = 33)

Records after duplicates removed (n = 595)

Records screened (n = 1839)

Full-text articles assessed for eligibility (n = 85)

Studies included in qualitative synthesis (n = 8)

Records excluded (n = 148) included criteria listed: criteria not met

**Study Characteristics**

<table>
<thead>
<tr>
<th>Study</th>
<th>Year (n)</th>
<th>Settings</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Length</th>
<th>Cochrane Risk of Bias</th>
<th>Safety</th>
<th>Tolerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sori et al. SUSTAIN-1</td>
<td>2017 388</td>
<td>Multinational 78 sites in 8 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Placebo</td>
<td>30 Weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Ahren et al. SUSTAIN-2</td>
<td>2017 1231</td>
<td>Multinational 528 sites in 18 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Sitagliptin 100 mg</td>
<td>56 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Ahmann et al. SUSTAIN-3</td>
<td>2018 813</td>
<td>Multinational 143 sites in 12 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Liraglutide 0.9 mg or 1.8 mg SQ</td>
<td>56 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Aroda et al. SUSTAIN-4</td>
<td>2017 1089</td>
<td>Multinational 196 sites in 14 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Insulin Glargine 30 units + titration</td>
<td>26 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Rodbard et al. SUSTAIN-5</td>
<td>2018 397</td>
<td>Multinational 96 sites in 5 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Placebo</td>
<td>30 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Marso et al. SUSTAIN-6</td>
<td>2016 3297</td>
<td>Multinational 230 sites in 20 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Placebo</td>
<td>104 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Pratley et al. SUSTAIN-7</td>
<td>2018 1201</td>
<td>Multinational 194 sites in 16 countries</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Dulaglutide 0.75 mg or 1.5 mg SQ</td>
<td>40 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Seino et al.</td>
<td>2017 308</td>
<td>Single Country (Japan) Multi-center</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>Sitagliptin 100 mg</td>
<td>30 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
<tr>
<td>Kaku et al.</td>
<td>2018 601</td>
<td>Single Country (Japan) Multi-center</td>
<td>Weekly semaglutide of 0.5 mg or 1.0 mg SQ</td>
<td>One additional OAD</td>
<td>56 weeks</td>
<td>Low</td>
<td>No serious adverse events reported 10% in 0.5 mg and 7% in 1.0 mg semaglutide</td>
<td>CVD/MI</td>
</tr>
</tbody>
</table>

**Semaglutide once weekly achieved high degree of glycemic control with weight loss in patients with type 2 diabetes, without an increased risk of hypoglycemia.**

**Safety:**
- **CVD/MI:** 1% in 0.5 mg and 7% in 1.0 mg semaglutide
- **Serious AEs:** 0.5% in 1.0mg semaglutide
- **Most AEs:** mild to moderate gastrointestinal disorder and prandial/glucose control

**Tolerability:**
- **Premature discontinuation:** 3.5% for 0.5mg semaglutide
- **Most frequent adverse event:** 22.3% nausea for semaglutide

**Conclusion:**
- Semaglutide once weekly achieved high degree of glycemic control with weight loss in patients with type 2 diabetes, without an increased risk of hypoglycemia.
- Safety profile of semaglutide seems to be similar to available GLP-1 receptor agonists, consisting mainly of gastrointestinal events such as nausea, diarrhea, and vomiting.
- Additional large studies are needed to assess long term safety and efficacy of semaglutide in regards to cardiovascular, renal, and gastrointestinal systems.

**References**