Health Economic Evaluation of Canagliflozin in the Treatment of Type 2 Diabetes Mellitus in the Czech Republic

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BACKGROUND

Type 2 diabetes mellitus (T2DM) generally occurs in people older than 40 years; the incidence increases with age.

In Phase 3 studies, 6-16 CAN A:

- The structure of the model is shown in Figure 1.
- Note that the cost-effectiveness results presented here versus DAP A 10 mg are conservative, as the model did not account for the additional cost of medication for CAN A and its associated non-diabetes glycaemic control.

OBJECTIVE

The objective was to evaluate the cost-effectiveness of CAN A 100 mg and DAP A 10 mg in the treatment of patients’ T2DM, using an established management strategy (MET plus sulfonylurea) and DAP A 10 mg as a comparator. The analyses included a rebound to MET plus sulfonylurea (SU) compared to DAP A 10 mg, and an additional scenario to compare with DAP A 10 mg.

RESULTS

- The cost-effectiveness analysis supported that in dual therapy as compared to CAN A and DAP A 10 mg, the cost-effectiveness is increased, with a lower and cost-effectiveness ratio (CER) of £30,000 per QALY gained, measured in the Incremental Cost-Effectiveness Ratio (ICER). Analyses suggested that CAN A 100 mg is cost-effective, with a cost-effectiveness ratio of £30,000 per QALY gained, and the ICER was below the threshold value. The cost-effectiveness analysis presented was local, as diabetes care was more than 50% in each comparison.

CONCLUSION

- The cost-effectiveness results support the use of CAN A as an add-on to MET plus SU compared to SITA, and as an add-on to insulin therapy compared to DAP A 10 mg.

Table 1: Key Clinical Outcomes in the Model

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Baseline</th>
<th>CAN A 100 mg</th>
<th>DAP A 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>79.4 kg</td>
<td>79.2 kg</td>
<td>79.5 kg</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>130/85 mmHg</td>
<td>129/85 mmHg</td>
<td>130/85 mmHg</td>
</tr>
<tr>
<td>HbA1c</td>
<td>7.0%</td>
<td>6.8%</td>
<td>7.1%</td>
</tr>
<tr>
<td>BMI</td>
<td>26.8 kg/m²</td>
<td>26.6 kg/m²</td>
<td>27.0 kg/m²</td>
</tr>
<tr>
<td>Severe hypoglycaemia</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Non-severe hypoglycaemia</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Figure 2: Cost-effectiveness plane for CAN A vs DAP A in dual therapy

Figure 3: Cost-effectiveness acceptability curve for CAN A

Table 2: Any Complications Costs Incurred in the Model

<table>
<thead>
<tr>
<th>Complications</th>
<th>Baseline</th>
<th>CAN A 100 mg</th>
<th>DAP A 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular mortality</td>
<td>£82,456</td>
<td>£82,456</td>
<td>£82,456</td>
</tr>
<tr>
<td>Neurological mortality</td>
<td>£72,700</td>
<td>£72,700</td>
<td>£72,700</td>
</tr>
<tr>
<td>Ophthalmological disorder</td>
<td>£63,945</td>
<td>£63,945</td>
<td>£63,945</td>
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<tr>
<td>Renal transplantation</td>
<td>£55,190</td>
<td>£55,190</td>
<td>£55,190</td>
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<tr>
<td>Peritoneal dialysis</td>
<td>£46,435</td>
<td>£46,435</td>
<td>£46,435</td>
</tr>
</tbody>
</table>

PUBLICATIONS


REFERENCES

- 2004;539-545.
- 2005;36(9):230-238.
- 2013;382(9896):941-950.
- 2014;30(2):163-175.
- 2013;56(12):2582-2592.

ACRENDONMENTS

- 49.8% of the cost-effective results presented were based on SITA 100 mg, the probability of CAN A being cost-effective was 90% compared to SITA 100 mg.