The Glycaemic Response to Dapagliflozin among Type 2 Diabetes Patients according to Intensity of Background Diabetes Treatment or Duration of Diabetes: the Association of British Clinical Diabetologists Nationwide Dapagliflozin Audit

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Introduction

- Treatment with dapagliflozin, a sodium glucose transporter 2 (SGLT2) inhibitor, increases glucosuria and improves glycaemic control in patients with type 2 diabetes.
- This action is independent of beta cell function. Conceptually, dapagliflozin should be equally efficacious among patients with early or advanced diabetes.
- We investigated whether the glycaemic response to dapagliflozin treatment differed according to intensity of background treatment or duration of diabetes diagnosis. We analysed data from a nationwide audit in the UK.

Methods

The ABCD nationwide dapagliflozin audit

- The Association of British Clinical Diabetologists (ABCD) conducted a nationwide audit of the use of dapagliflozin based in real-life clinical practice. Diabetes centres across UK were invited to participate.
- Participating physicians provided anonymised information on demographic data (age, gender, ethnicity, height, weight), duration of diabetes, cardiometabolic parameters (glycaemia, blood pressure, lipids, alanine aminotransferase and creatinine) and treatments prescribed, before and after treatment with dapagliflozin. Information on adverse events were also collected.
- Between October 2014 and December 2015, 57 centres submitted data on 1720 patients started on dapagliflozin in routine practice.

Analysis of outcomes

- Patients were stratified for receipt of none, one, two or three background diabetes drugs (oral therapies or GLP-1 receptor agonists), or insulin (± oral therapies/GLP-1 receptor agonists).
- In a separate analysis, patients were stratified according to diabetes duration of 0-5, 6-10 and >10 years.
- Changes in HbA1c were compared across groups (ANCOVA) using baseline HbA1c and eGFR as covariates.
- The latest HbA1c at 26 weeks, with a minimum of 13 weeks after treatment were used.

Subjects

- Exclusions
  - Switch from canagliflozin = 3
  - Background 4 diabetes drugs = 23
  - HbA1c <7% = 40
  - No HbA1c data after 13 weeks = 882
  - Insufficient data to calculate eGFR = 54
- 718 patients were analysed according to intensity of diabetes treatments. 612 patients were analysed according to duration of diabetes.

Results

Table 1: Baseline characteristics of 718 patients on dapagliflozin

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (M:F)</td>
<td>405:313</td>
</tr>
<tr>
<td>Age (years)</td>
<td>57.7 ± 10.0</td>
</tr>
<tr>
<td>Duration of diabetes</td>
<td>9.9 ± 7.4</td>
</tr>
<tr>
<td>(years) (n=612)</td>
<td></td>
</tr>
<tr>
<td>HbA1c (%)</td>
<td>9.6 ± 1.4</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>102.5 ± 22.4</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>33.4 ± 17.5</td>
</tr>
<tr>
<td>On GLP-1 receptor</td>
<td>22.0</td>
</tr>
<tr>
<td>agonist (%)</td>
<td></td>
</tr>
<tr>
<td>On insulin (%)</td>
<td>38.4</td>
</tr>
</tbody>
</table>

Conclusions

- Patients on different number of background diabetes treatments, or with different duration of disease, all achieve significant glycaemic improvement with dapagliflozin treatment.
- Dapagliflozin should be considered comparably as effective in patients with more advanced type 2 diabetes.

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