The Glycaemic Response to Dapagliflozin according to Intensity of Background Diabetes Treatment or Duration of Type 2 Diabetes: the Association of British Clinical Diabetologists (ABCD) 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 type 2 diabetes.
- We investigated whether the glycaemic response to dapagliflozin differed according to the intensity of background diabetes treatment or duration of diabetes diagnosis. We analyzed data from a nationwide audit in UK.

Methods

- 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 anonymized 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:

Inclusions-

- 718 patients were analyzed according to intensity of diabetes treatments
- 612 patients were analyzed according to duration of diabetes

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

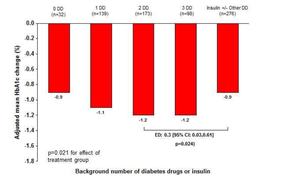
Results

Table 1: Baseline characteristics of 718 patients on dapagliflozin

Data Input	Oct 2014 – Dec 2015
Number of Patients	718
Sex[M:F]	405:313
Age(years)	57.7±10.0
Duration of Diabetes (years)(n=612)	9.9±7.4
HbA1c(%)	9.6±1.4
Weight(kg)	102.5 ± 22.4
BMI(Kg/m^2)	33.4±17.5
On GLP-1 receptor agonist (%)	22.0
On insulin (%)	38.4

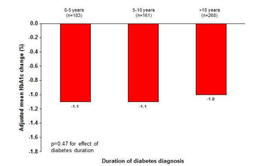
Reported as mean±SD

Figure 1: Change in HbA1c stratified by background diabetes therapy



Data are adjusted mean and estimated difference (ED) were analysed by ANCOVA with baseline HbA1c and eGFR as covariates. DD; diabetes drugs

Figure 2: Change in HbA1c stratified by duration of diabetes



Data are adjusted mean analysed by ANCOVA with baseline HbA1c and eGFR as covariates.

- No differences in glycaemic reduction were observed between patients on various number of diabetes drugs except comparing patients on two diabetes drugs with patients on insulin.
- No differences in glycaemic reduction were observed between patients with short or long diabetes duration

Conclusion

- 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.

Acknowledgement

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