

Does dapagliflozin affect the metabolic response in patients with elevated alanine aminotransferase (ALT) and Type 2 diabetes?: the Association of British Clinical Diabetologists (ABCD) nationwide dapagliflozin audit

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Dates of Audit 2014-15
Centres 44
Contributors 129
Total Patients 943

Aims

To evaluate the effect of: (1) dapagliflozin on metabolic response in patients with elevated alanine aminotransferase (ALT); (2) baseline ALT on metabolic response to dapagliflozin

Collected anonymised data of patients treated with dapagliflozin in the UK

- Patient demographics
- HbA1c, weight, ALT
- Diabetes medications
- Adverse events

Methods

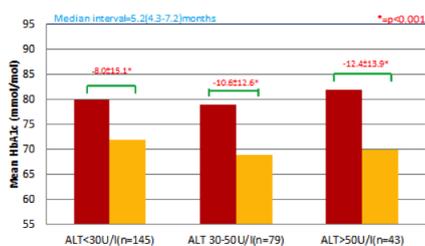
- Selection of patients with both baseline and follow up ALT values with a median of 26±8.2 weeks
- Categorised into three groups depending on baseline ALT- ALT<30U/l, ALT 30-50U/l and ALT>50U/l
- Descriptive analysis
- Changes in ALT, weight and HbA1c over time were calculated within and between ALT groups (Wilcoxon signed rank test)
- The relationship between baseline variables including ALT and the metabolic response was assessed (Spearman's correlation).

Results

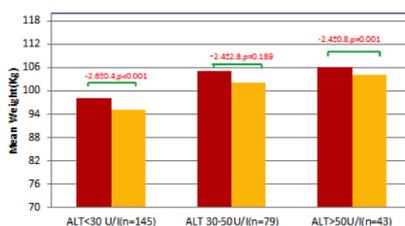
Baseline Characteristics

| n(%) | ALT<30U/l n=145 (49.8) | ALT 30-50U/l n=79(27.1) | ALT>50U/l n=43(14.7) | Vs Combined Clinical Trials - Dapagliflozin |
|-------------------------|---------------------------|----------------------------|-------------------------|---|
| Males(%) | 73.3 | 64.7 | 69.2 | |
| Age(years) | 56.1±8.5 | 56.5±8.3 | 54.4±8.0 | |
| Diabetes duration(yrs) | 11.0(6.2-16.0) | 11.2(5.5-16.3) | 10.5(5.2-14.5) | |
| HbA1c(mmol/mol) | 80.3±17.4 | 81.1±18.0 | 81.9±16.4 | 7.96 |
| HbA1c(%) | 9.5±1.6 | 9.5±1.7 | 9.6±1.5 | 32.16 |
| BMI(kg/m ²) | 35.1±9.6 | 34.8±11.2 | 36.0±4.9 | |
| Weight(Kg) | 98.0±21.1 | 105.0±19.8 | 106.5±17.8 | |
| ALT(U/l) | 21.0(16.2-24.1) | 38.3(33.4-41.0) | 63.0(56.5-72.1) | |

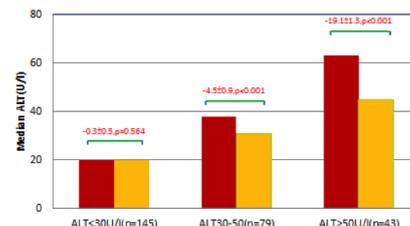
HbA1c Response to Dapagliflozin(n=291)



Weight Response to Dapagliflozin



ALT response to Dapagliflozin



Correlation

| Change in ALT- Correlation with: | Spearman's Rank Correlation coefficient@ | P-value |
|----------------------------------|--|---------|
| Change in HbA1c | - 0.05 | 0.39 |
| Change in weight | 0.20 | 0.001 |
| Baseline ALT | 0.70 | <0.001 |

Conclusions

-Apart from positive impact on glycaemic control and weight, dapagliflozin has a statistically and clinically significant response on ALT reduction in Type 2 diabetes patients with a high baseline ALT≥30U/l.

-This result may have implications regarding non-alcoholic fatty liver disease, which is associated with Type 2 diabetes.

Acknowledgment

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