Combined insulin and liraglutide is associated with metabolic improvement and reduction in insulin dose in commonly prescribed insulin regimens: an ABCD Nationwide Liraglutide Audit analysis

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BACKGROUND

Liraglutide added to insulin is not licensed except that insulin determir may be added to it. Combined liraglutide-insulin is not supported by the UK's national institute for clinical excellence (NICE).

ABCD Nationwide Liraglutide Audit

This initiative was launched in 2009 and is on-going collecting data obtained as part of standard care (including insulin co-prescription information) on UK patients treated with liraglutide. Baseline characteristics (n=5643): 55.5±11.0yrs, diabetes duration 9.0(IQR6.0-13.0) years, weight 110.5±22.8kg, HbA1c 9.4±1.7%, BMI 38.8kg/m^2 vs combined clinical trials HbA1c 8.5%, BMI 31kg/m^2.

AIM

To evaluate the efficacy and safety of the addition of liraglutide to common insulin regimes.

METHOD

- Data was obtained from ABCD nationwide audit of liraglutide in real clinical use (2009 – 2013; n=5643).
- Patients categorised according to their insulin regime at liraglutide initiation:
  - No insulin
  - Basal insulin
  - Basal-bolus insulin
  - Biphasic insulin
  - Other
- Descriptive statistics, before and after comparisons were performed of HbA1c, weight, BMI and insulin dose; patients were excluded if there was missing baseline or follow-up data or if the interval between relevant parameter was <6 weeks or >1 year.

RESULTS

Fig. 1. The pie chart shows the breakdown of patients by insulin regime at liraglutide initiation in terms of number of patients (%).

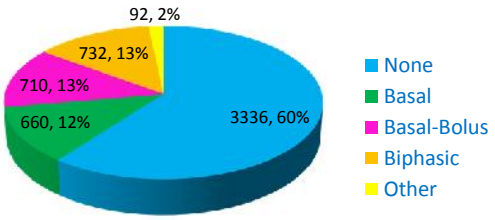
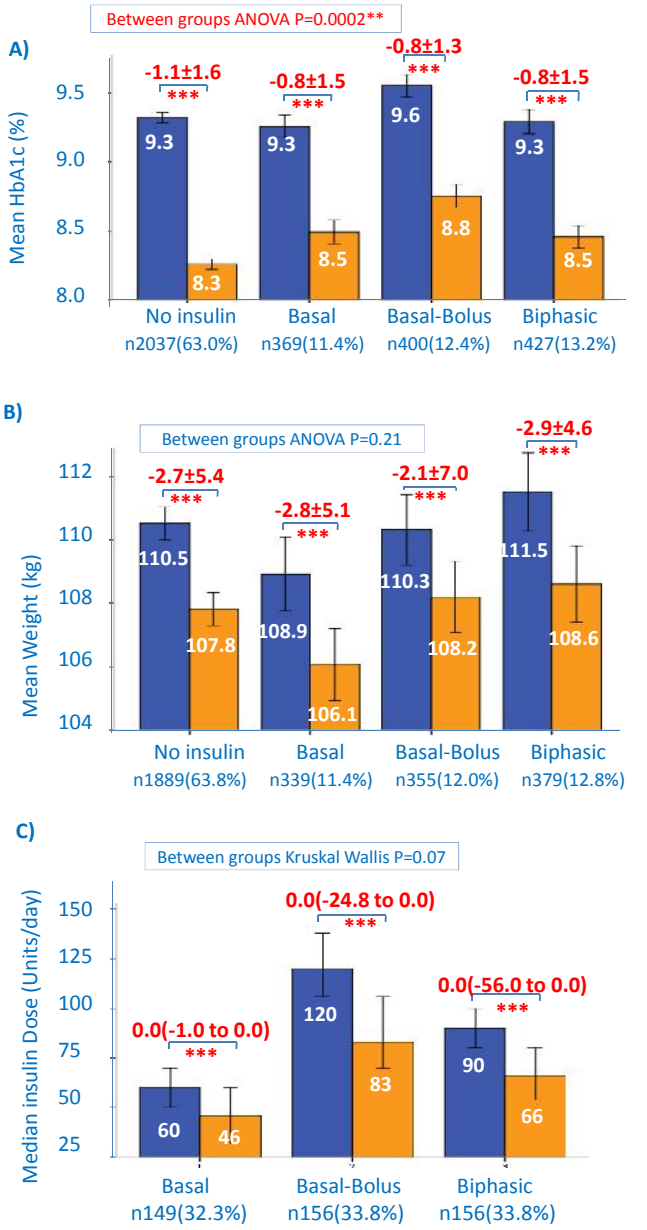


Table 1. Baseline characteristics of patients categorised by their insulin regime at liraglutide initiation. P values: *<0.01, **<0.001, ***<0.0001

N (%)	Basal insulin 660 (31.4%)	Basal-bolus insulin 710 (33.8%)	Biphasic insulin 732 (34.8%)	P-value
Male (%)	53.7	51.0	51.6	0.54
Caucasian (%)	87.4	85.0	85.9	0.51
Age (years)	55.2±12.0	54.6±11.8	57.3±10.6	<0.0001***
Diabetes duration (years)	10(7-13)	13(9-19)	10(7-15)	<0.0001***
HbA1c (%)	9.3±1.7	9.6±1.7	9.4±1.8	0.002*
BMI (Kg/m^2)	38.5±6.9	38.7±7.4	39.3±7.2	0.10
Weight (Kg)	109.5±21.9	110.7±22.0	111.2±23.6	0.39
Insulin dose (units)	60.0(30.0-116.0)	120.0(74.5-201.5)	90.0(56.0-136)	<0.0001***

Fig. 2. Clustered bar charts displaying baseline and follow-up A) mean HbA1c, B) mean weight, C) median insulin dose between the different insulin regimes. Error bars indicate 1SE for means, 95% confidence interval for median. Median follow-up interval for this analysis is 3.8(2.8-5.9) months. Before After ***P<0.0001



CONCLUSION

Patients for whom liraglutide is added to insulin in any of the common insulin regimes show:

i) Comparable improvement in metabolic parameters to each other
ii) Comparable reduction in weight to those not on insulin
iii) a trend to reduction in the total daily insulin dose

This analysis evaluating co-prescription of liraglutide and insulin may have implications regarding future treatment of patients with type 2 diabetes – there is no good rationale for limiting liraglutide use with basal insulin regimes only.

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