ABCD Autumn Meeting

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Abstracts of Posters 2011a

4a **Factors associated with HbA1c and weight changes at 6 months in the Association of British Clinical Diabetologists (ABCD) nationwide exenatide and liraglutide audit.** CE Walton (1), REJ Ryder (2), ML Cull (2), AP Mills (2), KY Thong (2), on behalf of the ABCD nationwide exenatide and liraglutide audit contributors. (1) Diabetes, Hull Royal Infirmary; (2) Diabetes, City Hospital,Birmingham.

Background and aims: Treatment with GLP-1 agonists in type 2 diabetes has the advantage of weight loss but they are not effective in every patient. Factors that help predict response to treatment is needed. ABCD conducted two nationwide audits on exenatide and liraglutide based on real clinical practice.

Materials and methods: Patients from both audits were pooled together for analyses. Univariate followed by multivariate analyses were performed to assess for factors that were associated with HbA1c and weight change after GLP-1 agonist treatment. Latest HbA1c and weight changes by 6 months were used as continuous response variables and were assessed against other continuous variables of baseline HbA1c, weight, weight or HbA1c change, patient age, diabetes duration, total insulin dose (logarithm-transformed) and insulin dose reduction. Categorical variables assessed were gender, ethnicity (Caucasian/South Asian/Afro-Caribbean), oral hypoglycaemic agent change (stopped or reduced/unchanged/started or increased) and insulin use (yes/no). To avoid limiting the multivariate analyses to only insulin patients, two models were assessed each for HbA1c and weight change, the first with all significant univariate variables and with the variable insulin use, the second with total insulin dose and insulin dose reduction.

Results: 9020 patients with 5407 and 5245 follow-up HbA1c and weight results were analysed. Univariate analyses showed HbA1c reduction being correlated with higher baseline HbA1c and inversely with baseline weight, weight reduction, diabetes duration, TZD reduction, insulin use, higher insulin dose reduction (all $p<0.001$).

Table 1 shows the results of stepwise regressions analyses. The HbA1c change model had 3982 patients with values of baseline HbA1c and weight, weight change, diabetes duration, TZD reduction and insulin use. The weight change model had 3089 patients with values of HbA1c change, baseline weight and HbA1c, ethnicity, age, diabetes duration, TZD reduction and insulin use. The models accounted for 22.0% and 9.5% of the variance of HbA1c change and weight change respectively.

Conclusions: Besides intuitive factors that affect HbA1c and weight outcomes, insulin-treated patients were found to have less HbA1c reduction but more weight reduction after treatment with GLP-1agonists. Higher total daily insulin dose and longer diabetes duration were also associated with poorer HbA1c reduction.

Table 1: Stepwise regression analyses of factors influencing HbA1c and Weight changes among patients treated with exenatide and liraglutide

	HbA1c reduction, stepwise regression among 3982 patients		Weight reduction, stepwise regression in 3089 patients	
Factor	Adjusted T-value	Adjusted p-value	Adjusted T-value	Adjusted p-value
Baseline HbA1c	30.44	<0.001	-5.94	<0.001
Baseline Weight	-3.79	<0.001	13.29	<0.001
HbA1c change	-	-	-	NS
Weight change	-	NS	-	-
Age	-	-	2.06	0.040
Diabetes duration	-4.16	<0.001	3.25	0.001
Ethnicity	-	-	-	NS
TZD reduction	-7.96	<0.001	7.02	<0.001
Insulin use	-10.02	<0.001	7.06	<0.001
	Stepwise regression among 1134 patients		Stepwise regression among 1002 patients	
Total insulin dose (log)	-3.6	<0.001	-	NS
Insulin dose reduction	-3.5	<0.001	9.21	<0.001