ABCD audits update

Dr Bob Ryder

ABCD Autumn Meeting, London

November 9, 2018

Association of British Clinical Diabetologists

ABCD Spring Meeting Presentation

- 52 slides packed into 15 minutes attempting to cover all our audits since 2009, what we did and what we found, and where we are going now
- Please see that presentation for all that
- This presentation:
  - What has happened since May 2018
  - Where are we now and what is important now

ABCD
Association of British Clinical Diabetologists

Poster from the liraglutide audit presented at EASD

Sandwell and West Birmingham Hospitals NHS
NHS Trust

Early impact of liraglutide in routine clinical use (ABCD nationwide liraglutide audit) on cardiovascular risk (UKPDS risk engine)

C. Walton[1]; S. Kassim[2]; R. Harper[3]; P. McDonald[4]; U. Brennan[5]; J. Harding[6]; T. Htay[7]; R. Nayar[8]; A. Pernet[9]; S. Rowles[9]; K. Adamson[9]; K.Y. Thong[9]; R.E.J. Ryder[10]*
[1]Hull Royal Infirmary, Hull, UK; [2]Northern HSC, Antrim, UK; [3]The Ulster Hospital, Dundonald, UK; [4]Kingston Hospital, London, UK; [5]City Hospitals, Sunderland, UK; [6]Kings College Hospital, London, UK; [7]Pennine Acute Hospitals, Manchester, UK; [8]St John's Hospital, Livingston, UK; [9]School of Medicine and Pharmacology, Perth, Australia; [10]City Hospital, Birmingham, UK.
* – ABCD nationwide liraglutide audit contributors

Background and aims

Liraglutide has been shown to reduce cardiovascular outcomes in patients at high cardiovascular disease (CVD) risk (LEADER study). Uncertainty exists regarding the impact of liraglutide on CVD risk in routine clinical care. The United Kingdom Prospective Diabetes Study (UKPDS) CVD risk engine version 2.0 uses recognised risk factors to calculate future CVD risk. Our aim was to investigate the impact of liraglutide in routine use on 10 year CVD risk.

Materials and methods

We used data from the Association of British Clinical Diabetologists (ABCD) Nationwide liraglutide audit which assesses liraglutide in routine clinical practice (6959 patients, 163 centres, 2009–2017). For this analysis we included all patients with all the factors utilised by the risk engine (age, duration of diabetes, ethnicity, systolic blood pressure, HbA_{1c}, total cholesterol and HDL cholesterol) measured before and at the earliest return to clinic between 3 and 9 months after commencing liraglutide. As we did not have data on atrial fibrillation or smoking these were assumed to be absent for the purposes of the analysis.

Results

The table shows baseline characteristics of the 747 patients and the early impact of liraglutide treatment on CVD risk factors. There were highly significant falls in all parameters involved in CVD risk assessment other than HDL cholesterol which was unchanged. The UKPDS risk engine mean ± SD 10-year coronary heart disease (CHD) risk fell by 2.7±7.6% from 18.7±13.0% to 16.1±11.6% (p<0.001). 10-year fatal CHD risk fell by 2.3±6.5% from 13.7±11.1% to 11.4±9.8% (p<0.001). 10-year stroke risk fell by 0.3±2.8% from 7.9±8.7% to 7.6±8.3% (p=0.003). 10-year fatal stroke risk fell by 0.1±0.7% from 1.2±1.4% to 1.1±1.3% (p=0.001). Weight, which is not a factor utilised in the UKPDS risk engine was assessed in the 3535 patients in the audit with weight and BMI data during the same time interval. Weight fell by 2.8±6.1 kg from 110.0±22.3 to 107.9±22.1 kg (p<0.001), and BMI by 0.98±2.2 kg/m^2 from 38.7±7.0 to 37.8±6.9 kg/m^2 (p<0.001).

Table: Baseline characteristics of the 747 patients who returned to clinic between 3 and 9 months after starting liraglutide and the change in cardiovascular risk parameters at the return visit as mean±SD or median (interquartile range [IQR]). Weight and BMI measurements in 3535 patients during the same time interval. *p*-values reflect change from baseline.

Parameter	Baseline	At 3–9 months	Difference	*p*-value
Age (years)	56.6±10.2			
Sex (% male)	56.2			
Ethnicity % White % Afro-Caribbean % Asian-Indian	83.2 2.9 7.9			
Diabetes duration (Median (IQR) years)	9.0 (5.0–12.0)			
HbA_{1c} (mmol/mol)	77.2±18.0	67.4±18.6	−9.8±17.9	<0.001
HbA_{1c} (%)	9.2±1.6	8.3±1.7	−0.9±1.6	<0.001
Systolic blood pressure (mm Hg)	126.8±16.6	122.3±17.3	−3.5±17.7	<0.001
Serum total cholesterol (mmol/L)	4.22±1.57	3.97±1.01	0.25±1.45	<0.001
Serum HDL cholesterol (mmol/L)	1.10±0.32	1.12±0.79	−0.02±0.78	0.39
Weight (kg) ($n_{=3535}$)	110.0±22.3	107.9±22.1	−2.8±6.1	<0.001
BMI (kg/m^2) ($n_{=3535}$)	38.7±7.0	37.8±6.9	−0.98±2.2	<0.001

Conclusion

Starting liraglutide reduced 10-year CVD risk. These data suggest that liraglutide used in routine clinical care in 100 patients could prevent three events of CHD or stroke and save two or more lives over the next 10 years. As this represented the earliest assessment after commencement of liraglutide it is possible that the impact would be greater with longer follow up. The results are likely to be an underestimate as the UKPDS risk engine does not take into account BMI which is also reduced by liraglutide. A limitation of the study is that since the UKPDS risk engine was created there have been changes in such things as diets, smoking, exercise, use of statins, use and types of anti-hypertensives, treatments for diabetes, pollution levels, and alcohol consumption which might affect the validity of the tool when applied to recently collected data.

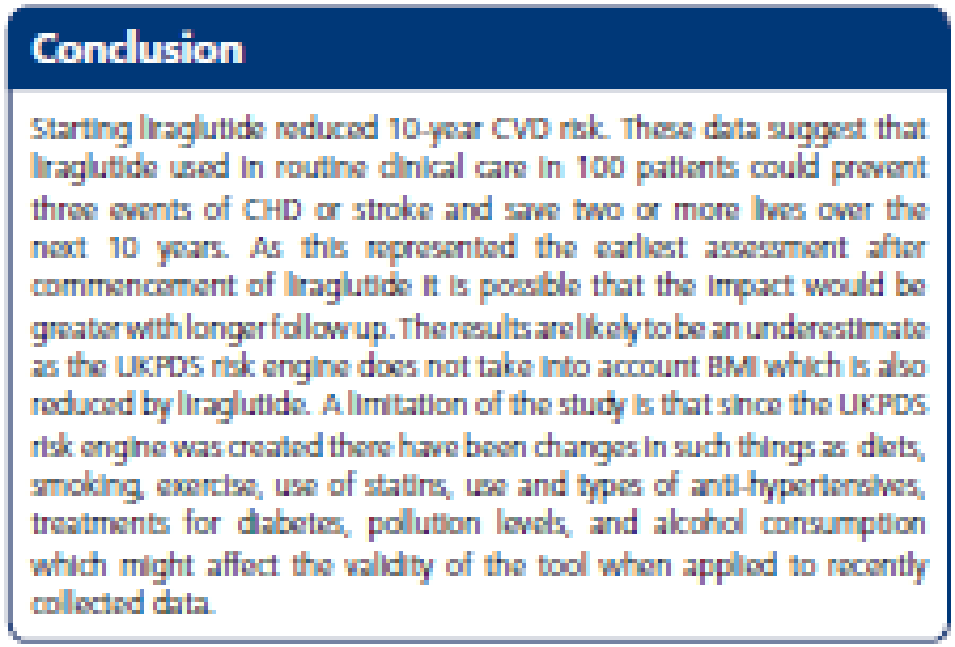
Reference: The UKPDS Risk Engine v2.0. Available at https://www.dtu.ox.ac.uk/riskengine/

Acknowledgement
The ABCD Nationwide liraglutide audit programme has received grants from Novo Nordisk. The audit was independently initiated and performed by ABCD, and the authors remained independent in the analysis and writing of this report. They also take full responsibility for the content of the poster. This poster was supported by a grant from Novo Nordisk in respect of publication and printing costs. Novo Nordisk has not influenced the content of the publication, or been involved in the design, collection, analysis or reporting of the data presented.
Presented at the European Association for the Study of Diabetes, 54th Annual Meeting.
1–5 October 2018, Berlin, Germany.

Where EVERYONE Matters

Walton C. et al; Diabetologia (suppl); 2018

Poster from the liraglutide audit presented at EASD



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Walton C. et al; Diabetologia (suppl); 2018

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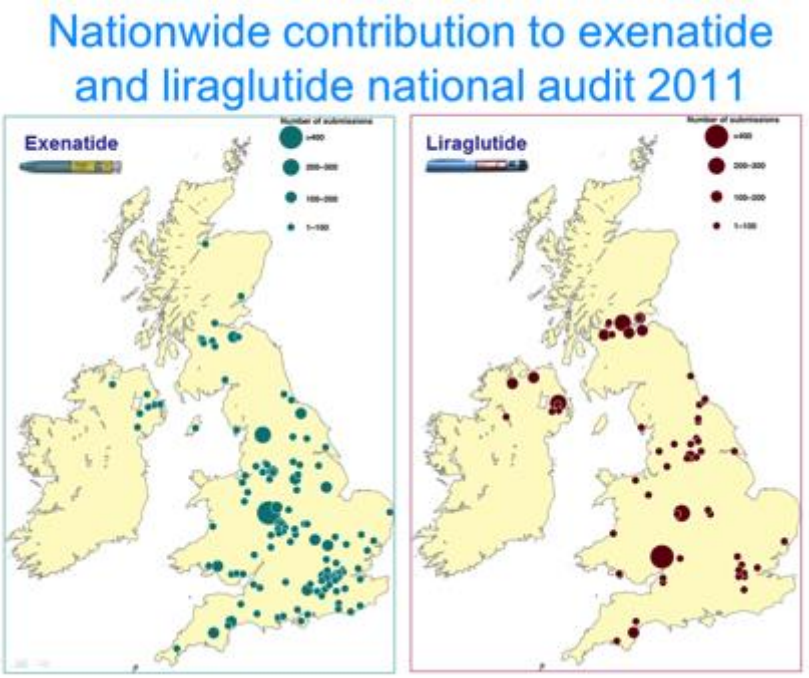
ABCD nationwide exenatide and liraglutide audits



- Real-life data
  - >13000 patients from
  - >150 centres
  - >500 contributors
- There had been (by 2018)
  - 12 published papers
  - 24 abstracts
  - 13 oral presentations

http://www.diabetologists-abcd.org.uk/GLP1_Audits/PresentationsPostersAbstractsExenatide.htm
http://www.diabetologists-abcd.org.uk/GLP1_Audits/PresentationsPostersAbstractsLiraglutide.htm

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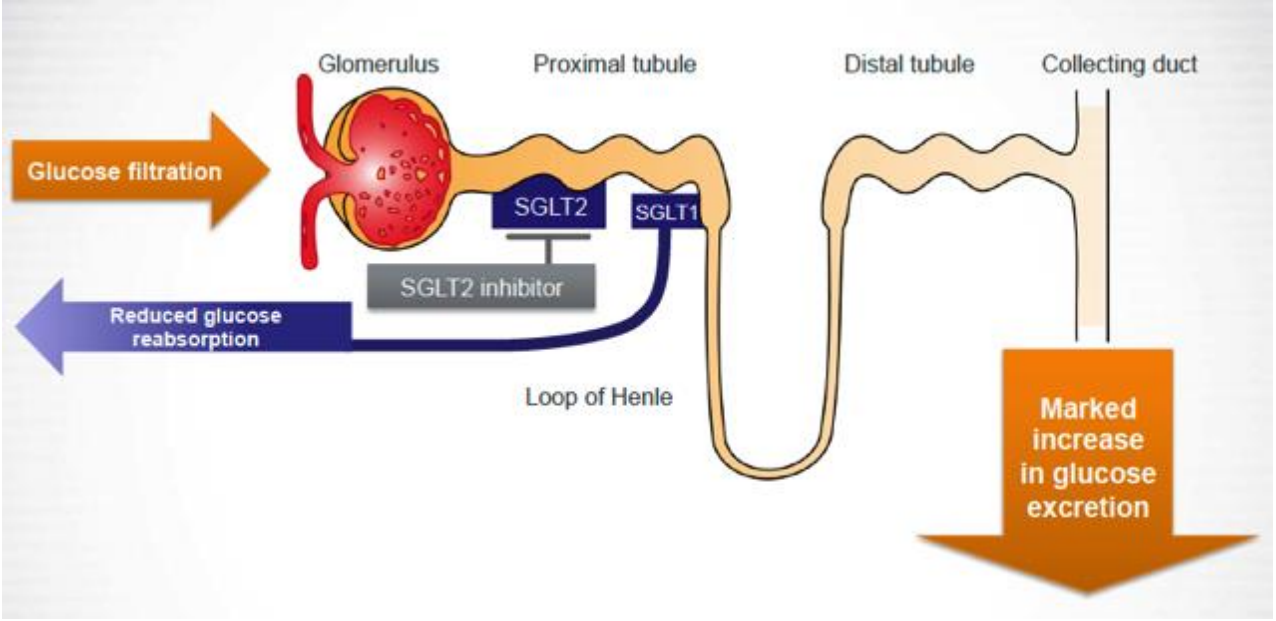
SGLT2 inhibitors – audit update



- Canagliflozin
- Dapagliflozin
- Empagliflozin

Bailey CJ (2011) *Trends Pharmacol Sci* **32**: 63–71

Association of British Clinical Diabetologists

Poster from the canagliflozin audit presented at EASD

Two year metabolic outcomes in the Association of British Clinical Diabetologist (ABCD) Nationwide Canagliflozin Audit

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[1] Sandwell and West Birmingham NHS Trust, Birmingham, UK, [2] Royal Berkshire Hospitals NHS Trust, Berkshire, UK, [3] Yeovil District Hospital NHS Trust, Yeovil, UK, [4] Cheltenham General Hospital, Cheltenham, UK, Princess Alexandra Hospital, Harlow, UK, [6] ABCD nationwide canagliflozin audit contributors, UK

Background

The ABCD audits new pharmacotherapies for diabetes across the UK to collect real-world data on their usage, accelerate the understanding of new agents in patients in the UK and ascertain whether experience from clinical usage matches phase 3 trial data. The ABCD nationwide canagliflozin audit was launched in January 2016 to evaluate the efficacy of canagliflozin in a real world setting of clinical use in the United Kingdom (UK).

Aims

To evaluate the metabolic outcomes and assess clinical safety of canagliflozin-treated type 2 diabetes patients in UK.

Methods

The ABCD nationwide audit of canagliflozin in real clinical use in the UK, was launched in January 2016. Anonymised data of patients treated with canagliflozin in the UK was collected by an online password protected questionnaire:

- Patient demographics
- HbA1c, weight, BMI, Systolic BP
- Diabetes medications
- Adverse events

Two year follow up data from 21 centres across the UK on 690 patients treated with canagliflozin. Male 60.2%, mean age (±SD) 58.9 ± 10.9 years, weight 101.3 ±22.2 kg, BMI 34.0 ±6.9, HbA1c 76.3 ±16.3 mmol/mol. Patients with baseline, first return and second return follow up data were included in the analysis.

ABCD members, clinicians in both primary care and secondary care, were emailed to invite them to submit clinical data on their patients treated with canagliflozin.

Those with baseline and follow-up HbA1c within a median (range) of 14.8(10.2-21.0) weeks, after commencing canagliflozin were included. Data at baseline and first follow-up were compared using student's paired t-test.

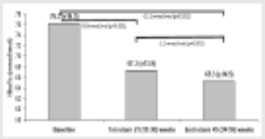
Baseline Characteristics

Data Input	Jan 2016 – March 2017
Centres	21
Contributors	40
Number of patients	690

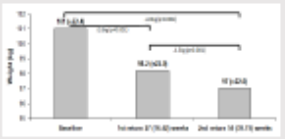
	Mean±SD
Age(years)	58.9± 10.9
Duration of Diabetes(years)* *Median(range)	7.0 (2.7-12.0)
Sex[Males(%)]	60.2
Baseline HbA1c(mmol)	76.3± 16.3
BMI(Kg/m²)	34.0± 6.9
Weight(Kg)	101.3±22.2

Results

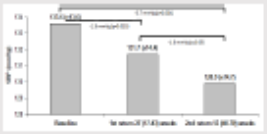
HbA1c (mmol/mol)



Weight (Kg)



SBP (mmHg)



ALT (U/L)

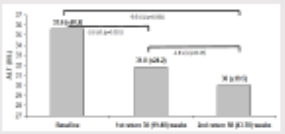


Figure: Mean (±SD) HbA1c (n=297), weight (n=242), ALT (n=177) and systolic blood pressure (n=265), baseline vs first and second return (after median (interquartile range) weeks) to clinic following commencement of canagliflozin.

•Mean HbA1c fell by 9.0±13.4 mmol/mol at first return and 11.1±14.7 mmol/mol at second return (n=297, p<0.001) with 2.1mmol/mol fall between first and second return (p=0.001).Mean weight fell by 2.8±4kg at first return and 4.0±5.4kg at second return (n=242, p<0.001) with 1.1kg fall between first and second return (p<0.001).Mean alanine aminotransferase (ALT) fell by 3.8±23.2 U/L at first return (p<0.001) and 5.6±18U/L at second return (n=177, p<0.001) with 1.8U/L fall between first and second return (p=0.25). Mean systolic blood pressure (SBP) fell by 1.9±15.4mmHg at first return (p<0.035) and 3.7±16.2mmHg at second return (n=265, p<0.001) with 1.8mmHg fall between first and second return (p<0.05). Mean diastolic blood pressure (DBP) fell by 1.0±10.1mmHg at first return (p=0.086) and 2.6±11.1mmHg at second return (n=264, p<0.001) with 1.5mmHg fall between first and second return (p=0.006).

•Median range of weeks for follow up for first and second returns (IQR) were 21 (15-30) and 44.9 (34.3-58.9) for HbA1c, 26.8 (15.5-41.6) and 54.6 (38.6-75) for weight, 30 (19-48.3) and 57.6 (42.7-77.5) for ALT, 27.3 (17.6-42.7) and 53.1 (40.6-70.1) for SBP, 27.2 (17.3-42.8) and 50 (40.3-71) for DBP.

Discussion

Canagliflozin showed statistically significant and sustained reduction in HbA1c, weight, ALT and systolic blood pressure across a wide range of real-world UK patients with type 2 diabetes. Further benefit was seen between first and second returns with statistically significant reductions in HbA1c, weight, systolic blood pressure and ALT.

Acknowledgement

We thank all the nationwide contributors for submitting data of patients on canagliflozin. The ABCD nationwide canagliflozin audit is supported by an unrestricted grant from Janssen. The audit was independently initiated and performed by ABCD and the authors remained independent in the analysis and the writing of this report.

Puttanna A. et al; Diabetologia (suppl); 2018

Canagliflozin audit – further improvement between first and second return

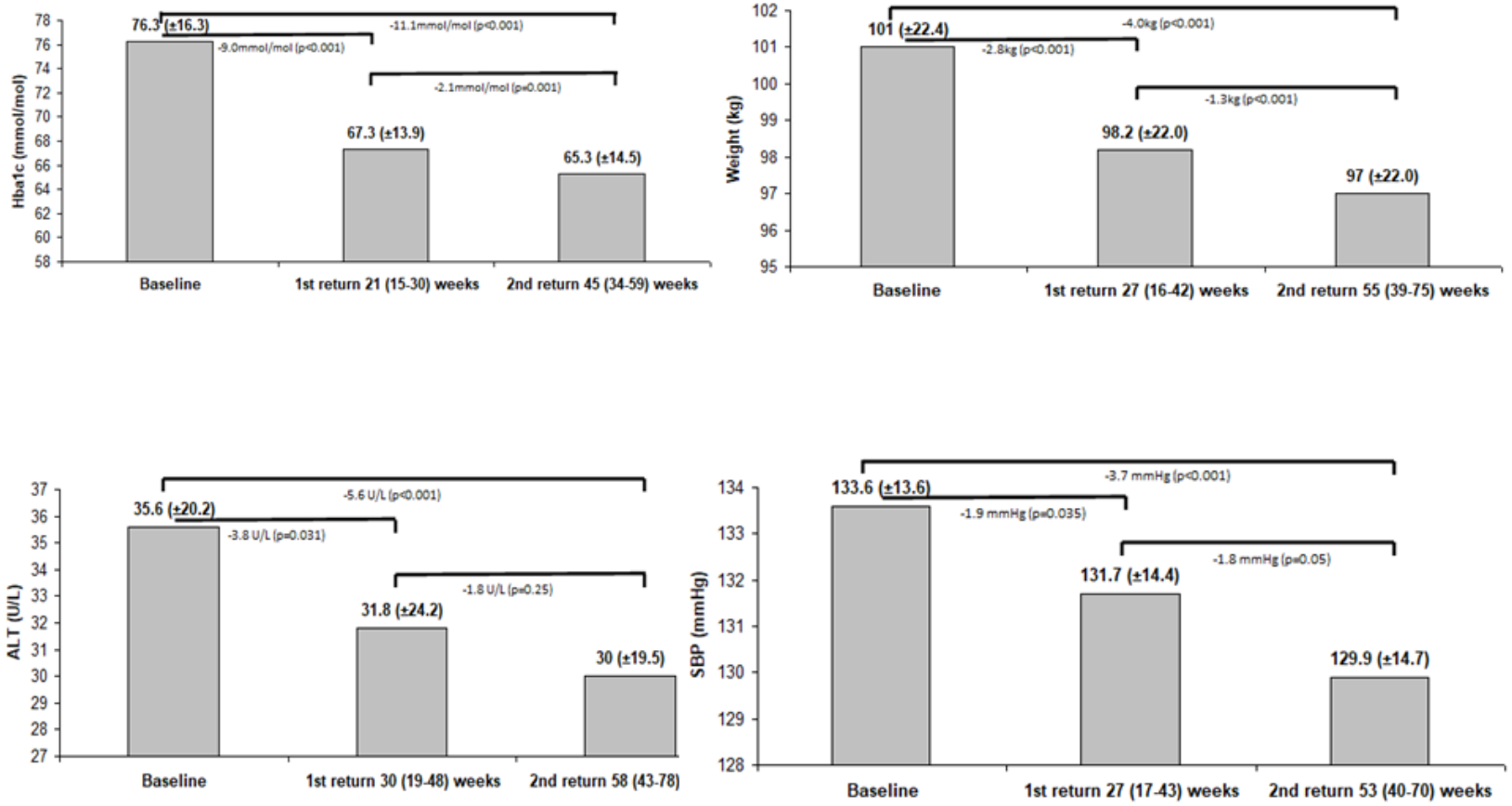
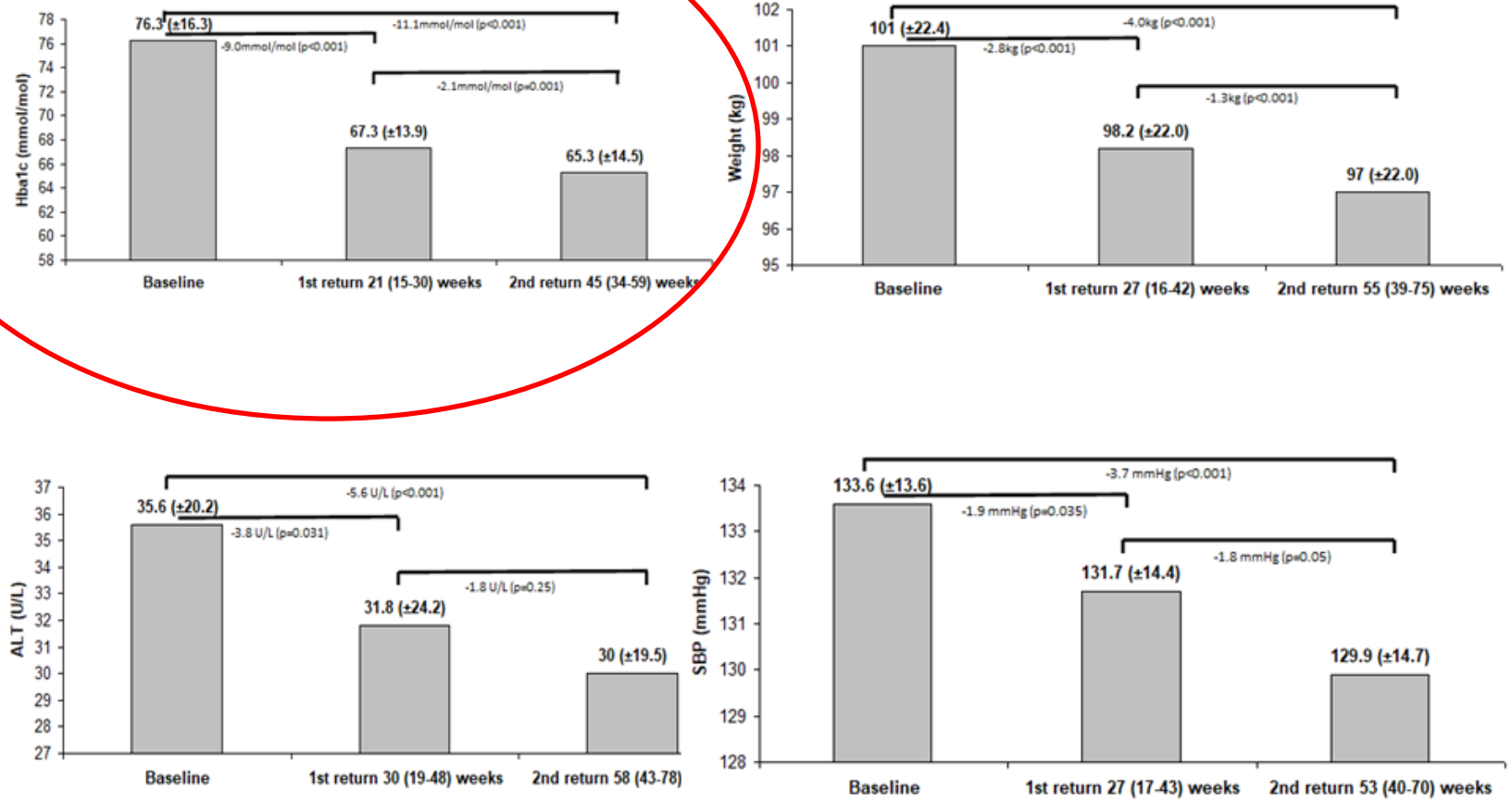


Figure: Mean (±SD) HbA1c (n=297) , weight (n=242), ALT (n=177) and systolic blood pressure (n=285), baseline vs first and second return (after median (interquartile range) weeks) to clinic following commencement of canagliflozin.

Puttanna A. et al; Diabetologia (suppl); 2018

Canagliflozin audit – further improvement between first and second return



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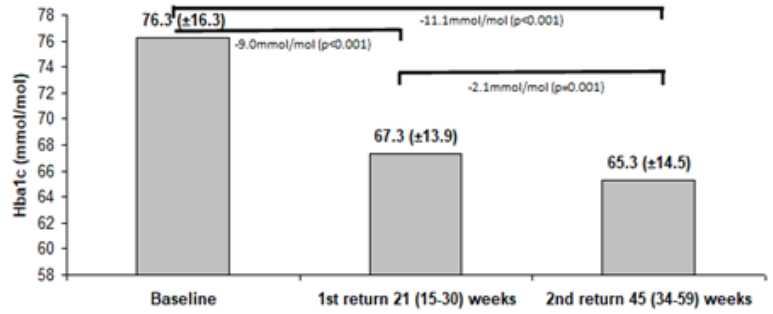
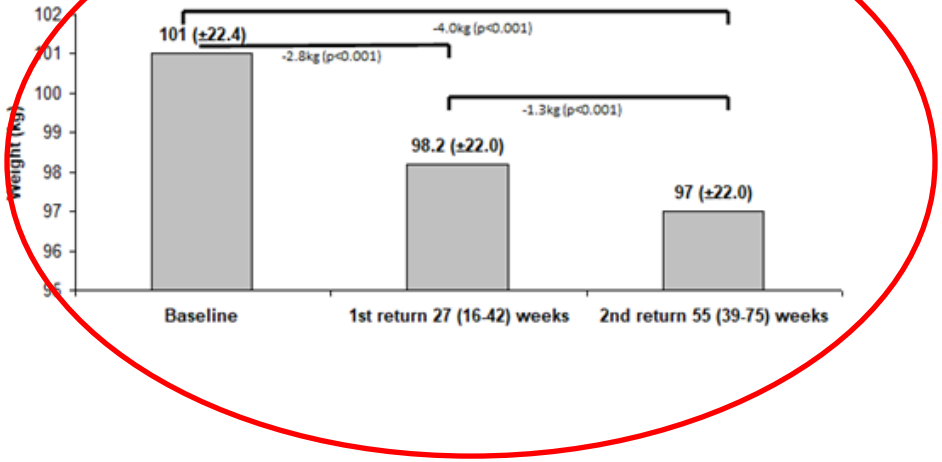
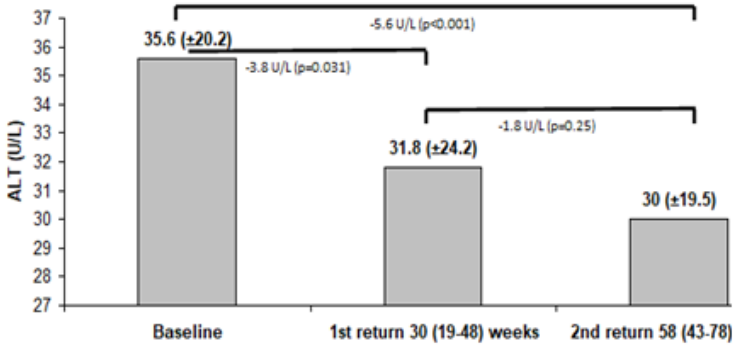
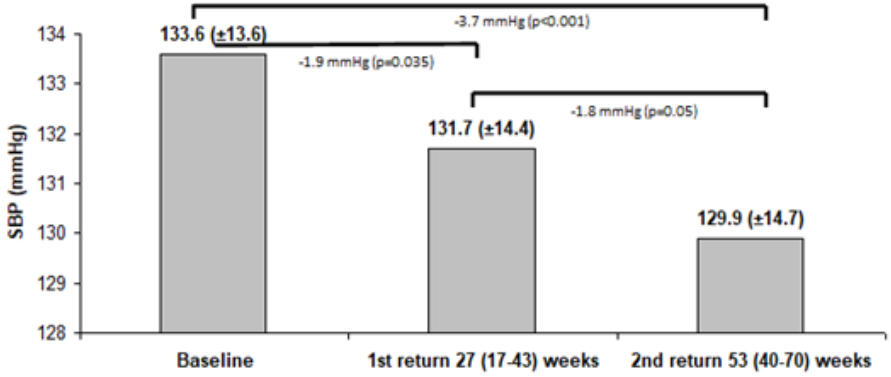
Canagliflozin audit – further improvement between first and second return









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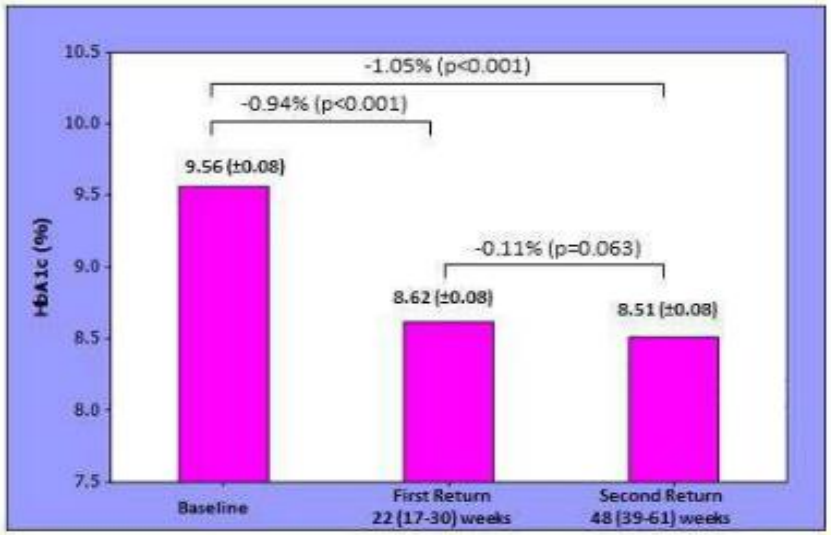
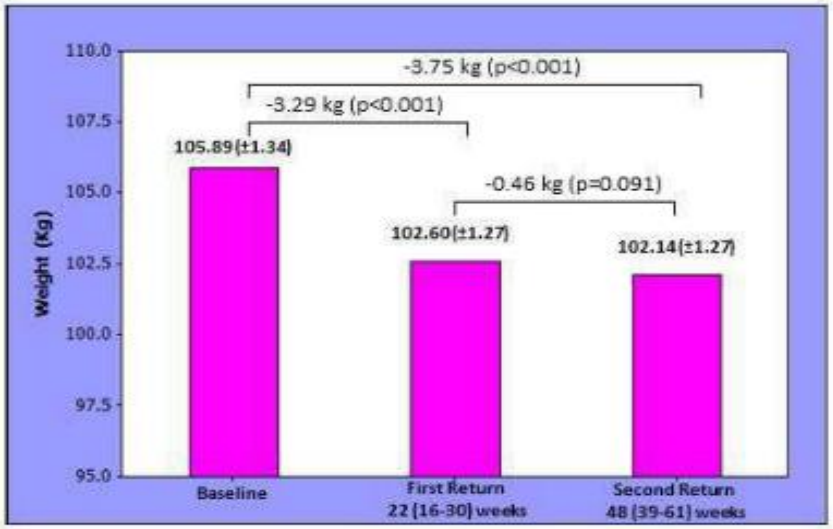
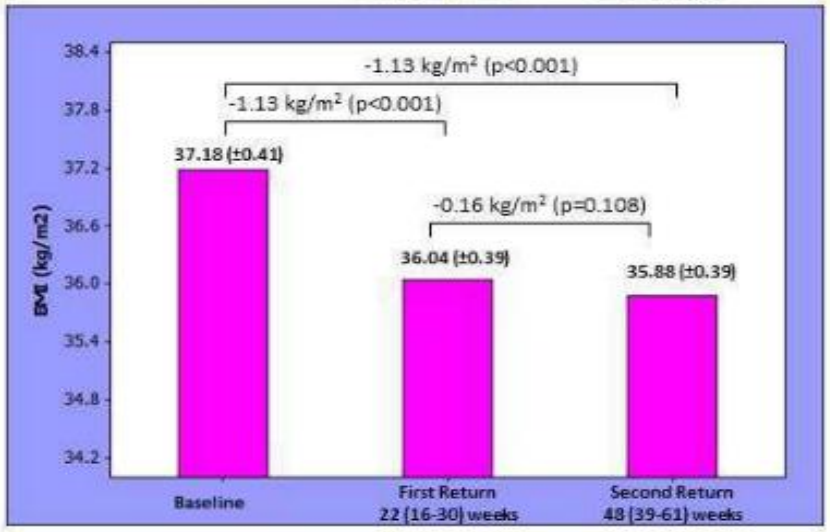
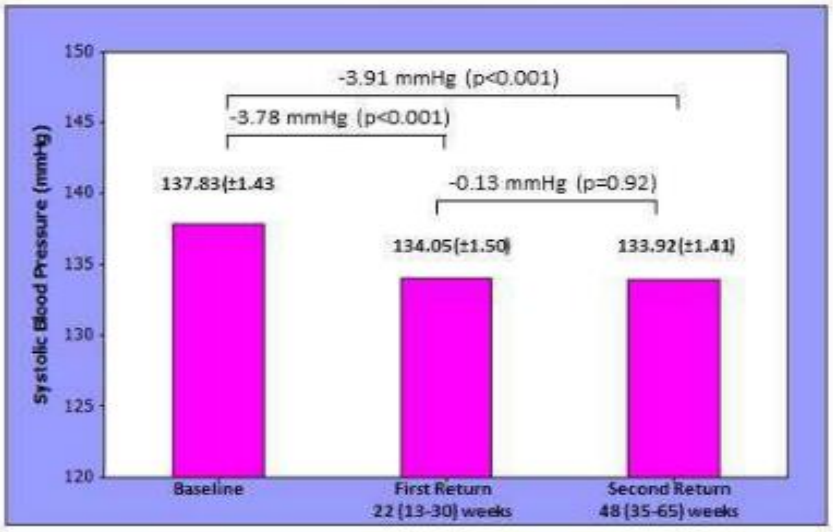
Puttanna A. et al; Diabetologia (suppl); 2018

Dapagliflozin – improvements sustained





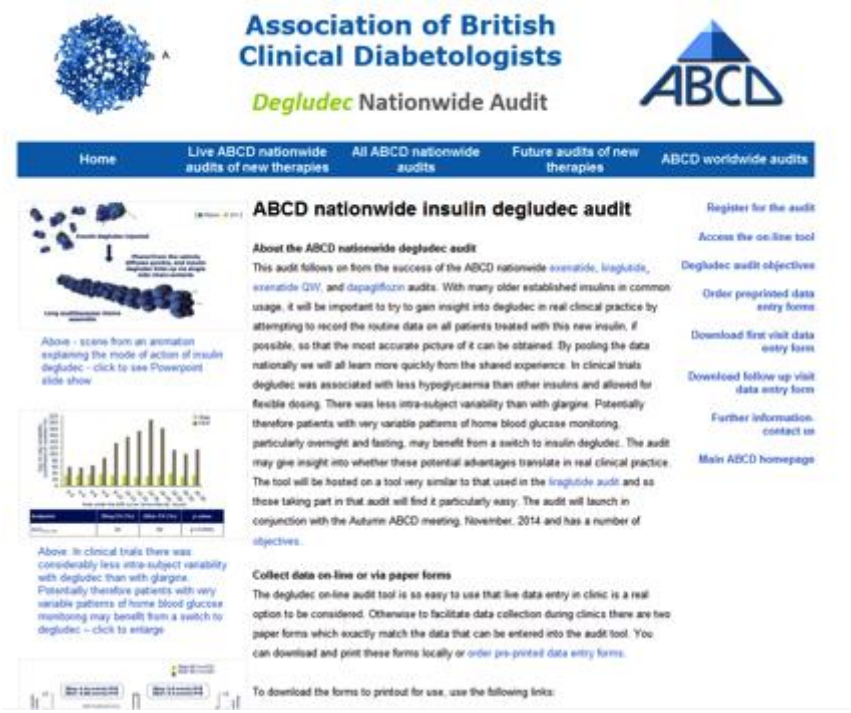




Data presented at ADA meeting, New Orleans, June 2016

Association of British Clinical Diabetologists

ABCD nationwide degludec audit

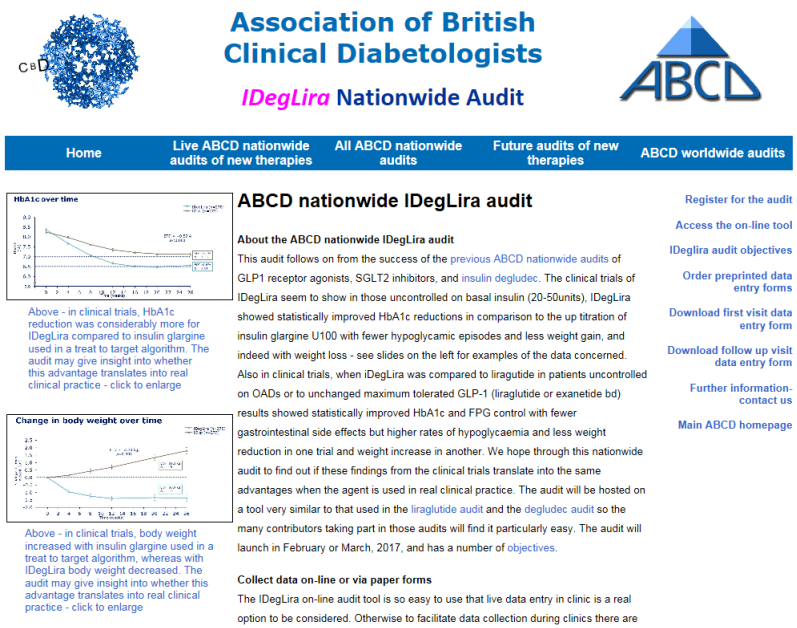


- Definitive paper now being written
- All contributors will be acknowledged

Association of British Clinical Diabetologists

http://www.diabetologists-abcd.org.uk/Degludec/Degludec_Audit.htm

ABCD nationwide IDegLira audit



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IDegLira Nationwide Audit

Home | Live ABCD nationwide audits of new therapies | All ABCD nationwide audits | Future audits of new therapies | ABCD worldwide audits

HbA1c over time

Above - in clinical trials, HbA1c reduction was considerably more for IDegLira compared to insulin glargine used in a treat to target algorithm. The audit may give insight into whether this advantage translates into real clinical practice - click to enlarge

Change in body weight over time

Above - in clinical trials, body weight increased with insulin glargine used in a treat to target algorithm, whereas with IDegLira body weight decreased. The audit may give insight into whether this advantage translates into real clinical practice - click to enlarge

ABCD nationwide IDegLira audit

About the ABCD nationwide IDegLira audit

This audit follows on from the success of the previous ABCD nationwide audits of GLP1 receptor agonists, SGLT2 inhibitors, and insulin degludec. The clinical trials of IDegLira seem to show in those uncontrolled on basal insulin (20-50units), IDegLira showed statistically improved HbA1c reductions in comparison to the up titration of insulin glargine U100 with fewer hypoglycamic episodes and less weight gain, and indeed with weight loss - see slides on the left for examples of the data concerned. Also in clinical trials, when iDegLira was compared to liragutide in patients uncontrolled on OADs or to unchanged maximum tolerated GLP-1 (liraglutide or exanetide bd) results showed statistically improved HbA1c and FPG control with fewer gastrointestinal side effects but higher rates of hypoglycaemia and less weight reduction in one trial and weight increase in another. We hope through this nationwide audit to find out if these findings from the clinical trials translate into the same advantages when the agent is used in real clinical practice. The audit will be hosted on a tool very similar to that used in the liraglutide audit and the degludec audit so the many contributors taking part in those audits will find it particularly easy. The audit will launch in February or March, 2017, and has a number of objectives.

Collect data on-line or via paper forms

The IDegLira on-line audit tool is so easy to use that live data entry in clinic is a real option to be considered. Otherwise to facilitate data collection during clinics there are

Register for the audit
Access the on-line tool
IDeglira audit objectives
Order preprinted data entry forms
Download first visit data entry form
Download follow up visit data entry form
Further information- contact us
Main ABCD homepage

- First abstract planned for ADA 2019 – please submit your data

http://www.diabetologists-abcd.org.uk/IDegLira/IDegLira_Audit.htm

Association of British Clinical Diabetologists

Future audits – watch this space …

- ABCD nationwide testosterone in diabetes audit coming in 2019 …..

Association of British Clinical Diabetologists

Two big audits of the moment

Association of British Clinical Diabetologists

ABCD Nationwide FreeStyle Libre Audit

Now fully live and collecting data

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ABCD Nationwide FreeStyle Libre Audit

- Abstract submitted to DUK – very small numbers but FSL associated with a significant fall in HbA1c
- Now looking for big numbers and first proper analysis for ADA 2019
  - abstract deadline 7 January 2019

Association of British Clinical Diabetologists

ABCD Nationwide FreeStyle Libre Audit

- Audit overview 7 November 2018
  - Total Centres: 85
  - Total Sites: 104
  - Total Users: 146
  - Total Patients: 706
- 706 patients are from 28 centres – only 15 of these 10 or more patients
- 57 centres still to enter any data

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ABCD Nationwide FreeStyle Libre Audit

- Countdown to deadline of 15 December 2018 for you to be part of the ADA submission
- Please submit ALL your FSL data before that date
- Countdown emails will be sent weekly as a nudge …..

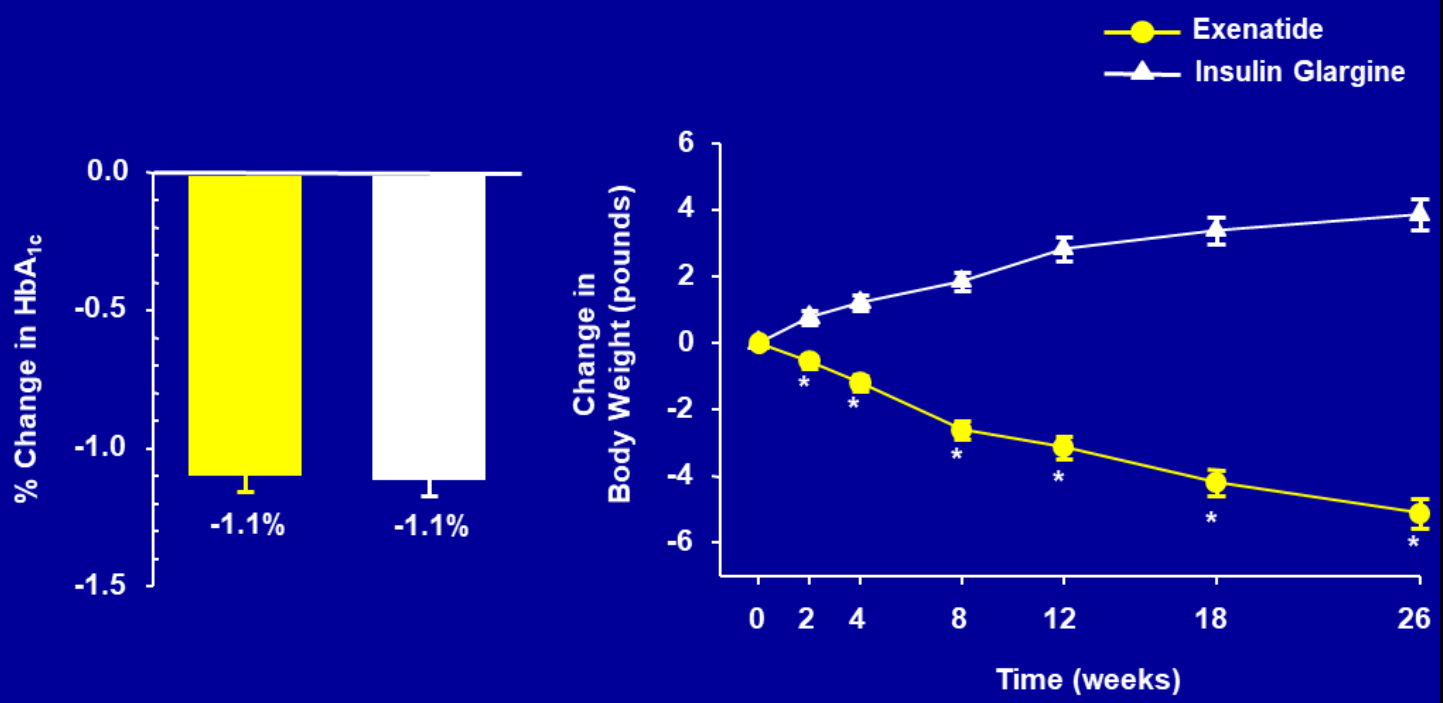
Association of British Clinical Diabetologists

ABCD Nationwide Semaglutide Audit

- Tool being created ready to be ready for use as semaglutide becomes available to prescribe in January 2019
- Why is this a big deal?

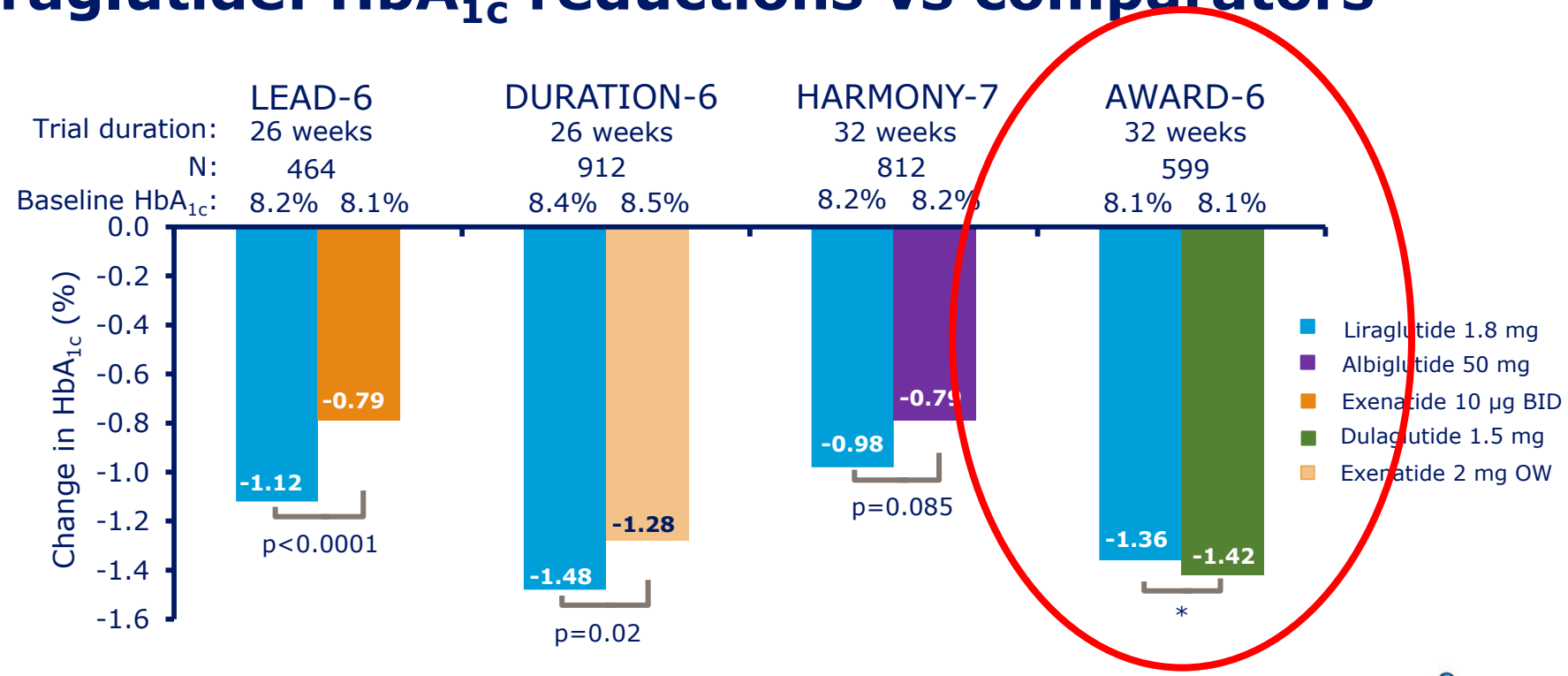
Association of British Clinical Diabetologists

Using insulin in type 2 diabetes (HbA1c down but weight up)



Heine RJ, et al. *Ann Intern Med.* 2005;143:559-569.

Liraglutide: HbA_{1c} reductions vs comparators



*Treatment difference (nominal 95% CI)=-0.06 (-0.19, 0.07), p<0.0001 for non inferiority vs. liraglutide.

Direct comparisons between trials cannot be made due to different trial designs.

BID, twice a day; CI, confidence interval; GLP-1 RA, glucagon-like peptide-1 receptor agonist; HbA_{1c}, glycosylated haemoglobin; OW, once weekly.

Buse et al. *Lancet* 2009;374:39–47 (LEAD-6); Buse et al. *Lancet* 2013;381:117–124 (DURATION-6); Pratley et al. *Lancet Diabetes Endocrinol* 2014; 2:289–297 (Harmony-7); Dungan et al. *Lancet* 2014;384(9951):1349–1357 (AWARD-6).

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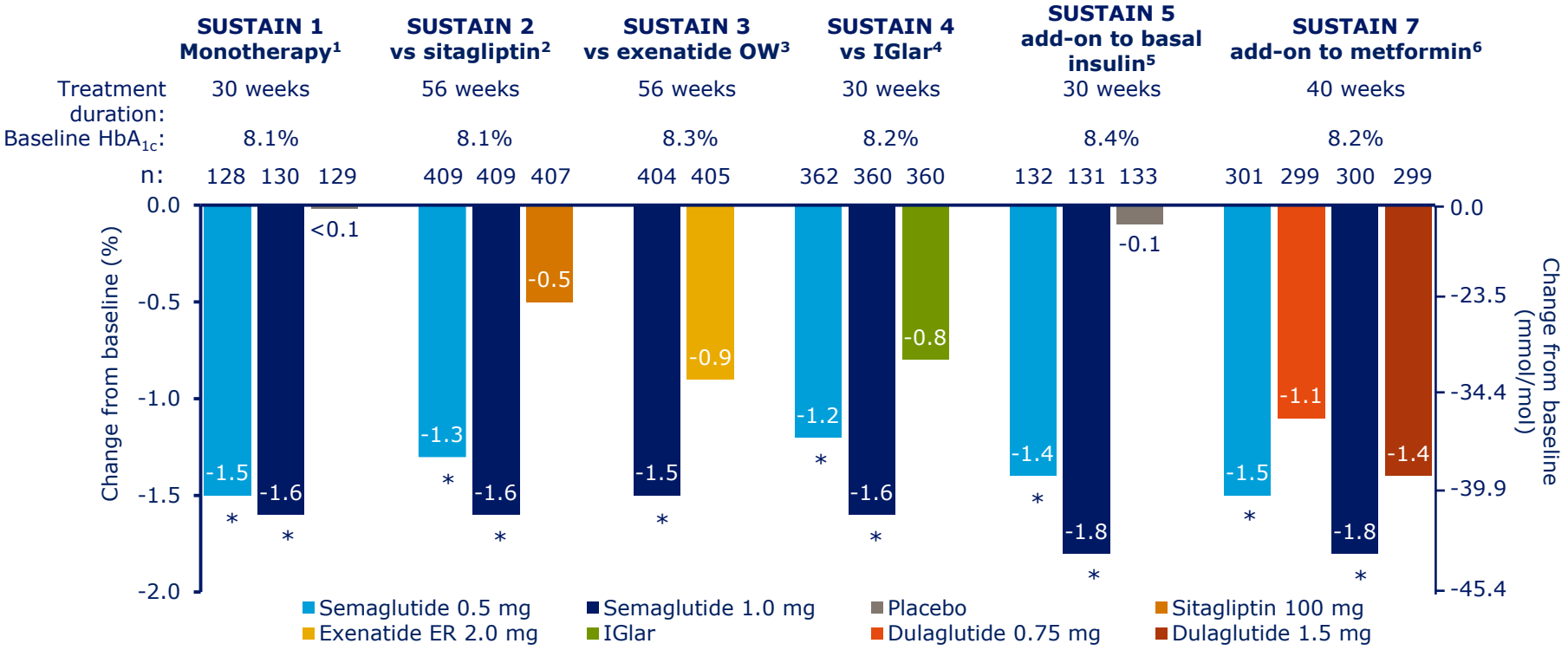
This slide discusses studies with different designs and comparators; no direct comparisons of data can be made between studies

Consistent efficacy results across SUSTAIN trials

ESTIMATED CHANGE IN HbA_{1c}



*p<0.0001 vs comparator.
Exenatide OW, exenatide once weekly; IGlar, insulin glargine.

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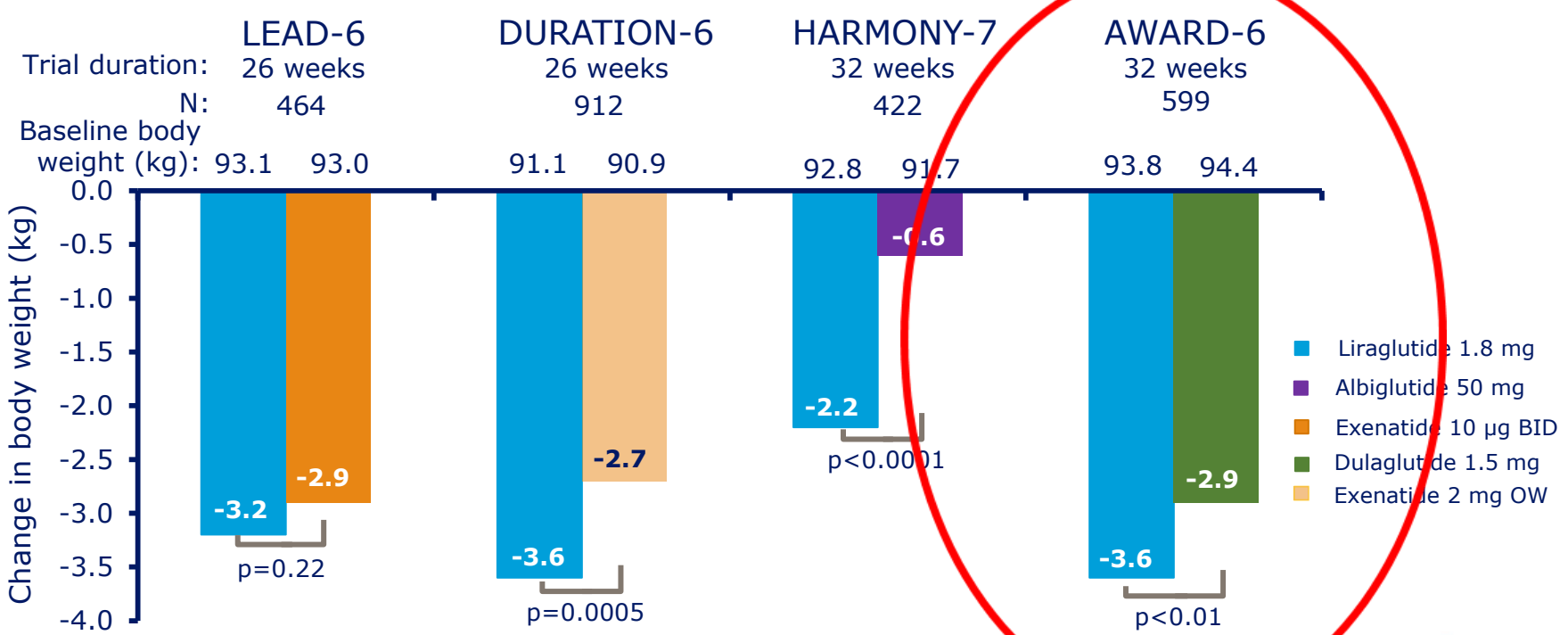
Liraglutide: weight loss vs comparators



These medicines are not indicated for weight management. Direct comparisons between trials cannot be made due to different trial designs.

BID, twice a day; GLP-1 RA, glucagon-like peptide-1 receptor agonist; OW, once weekly.

Buse et al. *Lancet* 2009;374:39–47 (LEAD-6); Buse et al. *Lancet* 2013;381:117–124 (DURATION-6); Pratley et al. *Lancet Diabetes Endocrinol* 2014; 2:289–297 (HARMONY-7); Dungan et al. *Lancet* 2014;384(9951):1349–1357 (AWARD-6).

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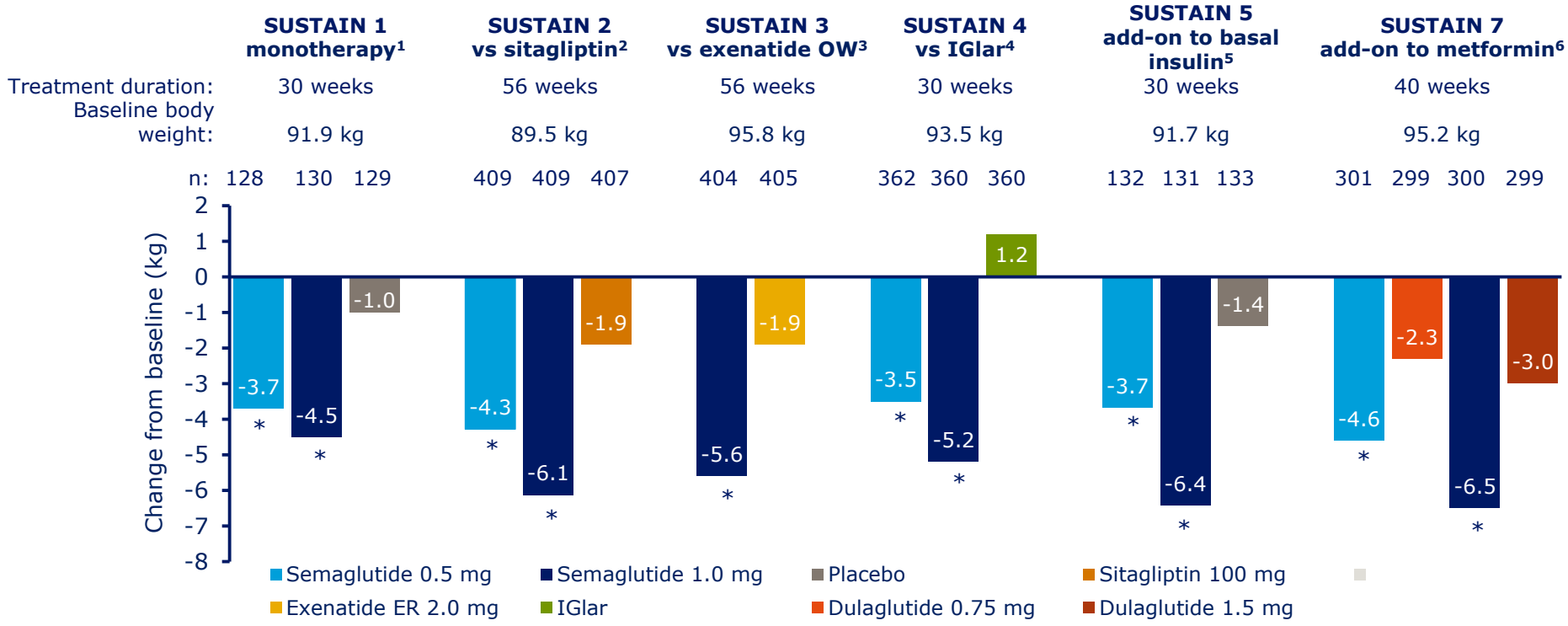
This slide discusses studies with different designs and comparators; no direct comparisons of data can be made between studies

Consistent efficacy results across SUSTAIN trials

ESTIMATED MEAN CHANGE IN BODY WEIGHT



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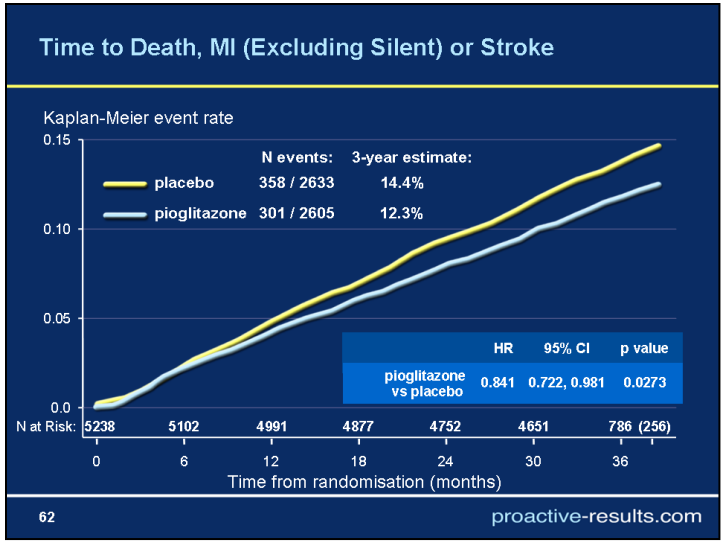
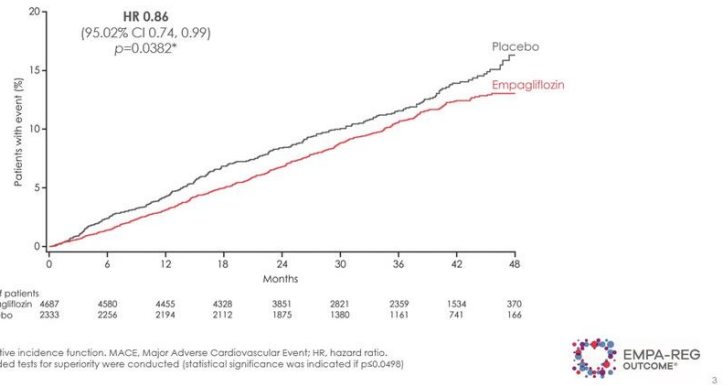
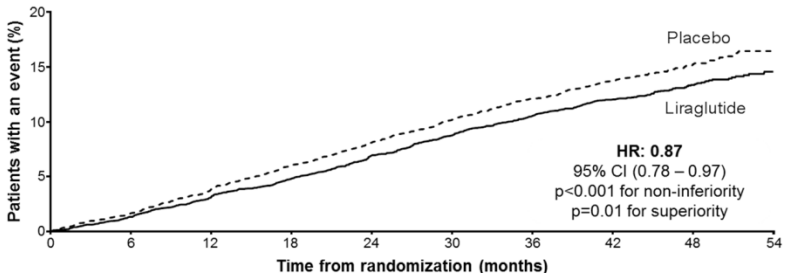
3-point MACE outcome in 4 studies of patients at high CV risk



Primary outcome:
3-point MACE



CV death, non-fatal myocardial infarction, or non-fatal stroke



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Liraglutide Effect and Action in Diabetes: Evaluation of cardiovascular outcome Results

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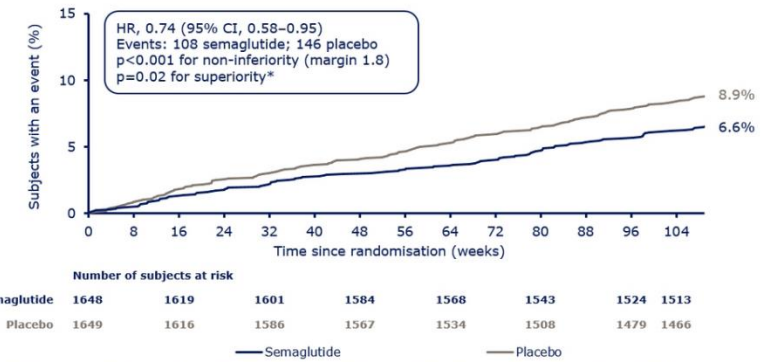
FIRST OCCURRENCE OF CV DEATH, NON-FATAL MI OR NON-FATAL STROKE

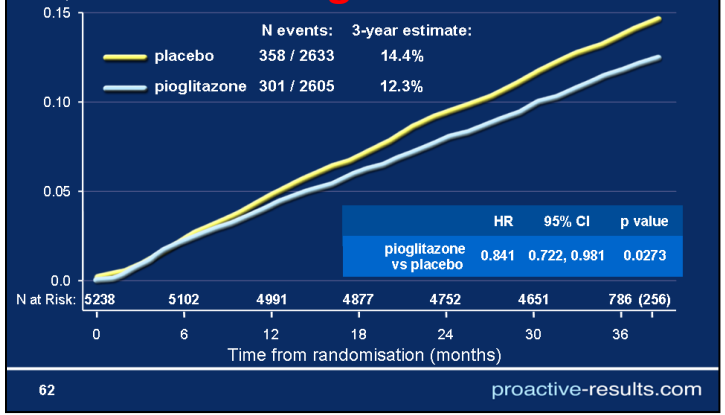


Kaplan Meier plot for first event adjudication committee-confirmed CV death, non-fatal MI and non-fatal stroke using 'in-trial' data from subjects in the full analysis set.
*Not prespecified.
CV, cardiovascular; HR, hazard ratio; MI, myocardial infarction.

3-point MACE outcome in 4 studies of patients at high CV risk

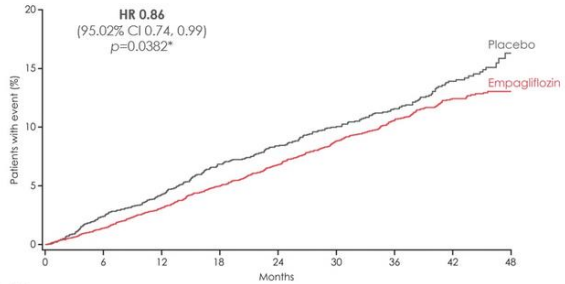
Time to Death, MI (Excluding Silent) or Stroke

Pioglitazone HR 0.84



62 proactive-results.com

Primary outcome: 3-point MACE

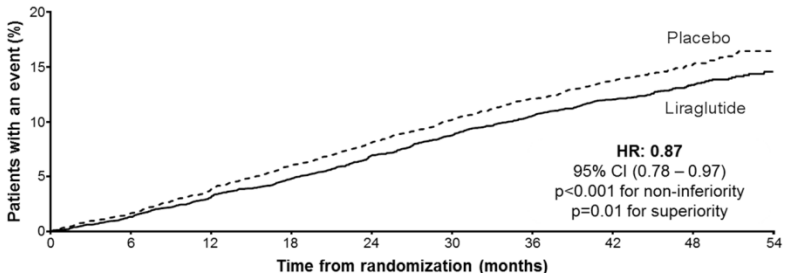


Cumulative incidence function. MACE, Major Adverse Cardiovascular Event; HR, hazard ratio.
* Two-sided tests for superiority were conducted (statistical significance was indicated if p≤0.0498)

EMPA-REG OUTCOME*

3

CV death, non-fatal myocardial infarction, or non-fatal stroke



Patients at risk

Liraglutide	4668	4593	4496	4400	4280	4172	4072	3982	1562	424
Placebo	4672	4588	4473	4352	4237	4123	4010	3914	1543	407

LEADER® Liraglutide Effect and Action in Diabetes: Evaluation of cardiovascular outcome Results

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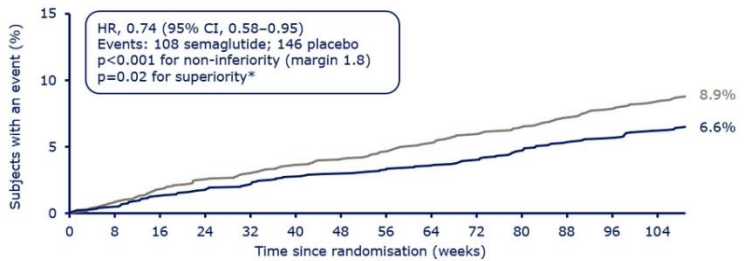

Number of subjects at risk

Semaglutide	1648	1619	1601	1584	1568	1543	1524	1513
Placebo	1649	1616	1586	1567	1534	1508	1479	1466

Semaglutide Placebo

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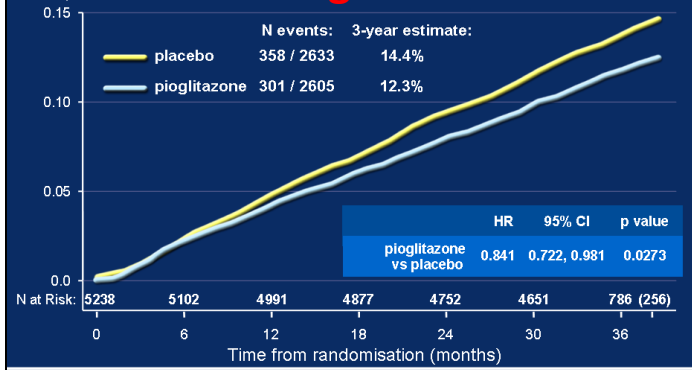

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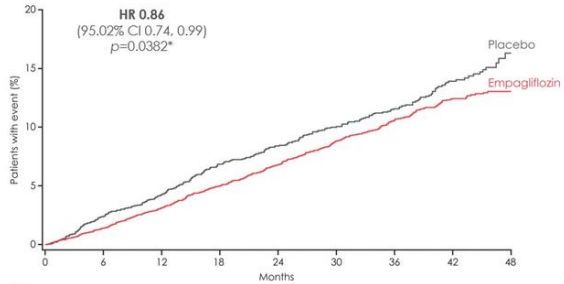
Primary outcome: 3-point MACE

Empagliflozin HR 0.86

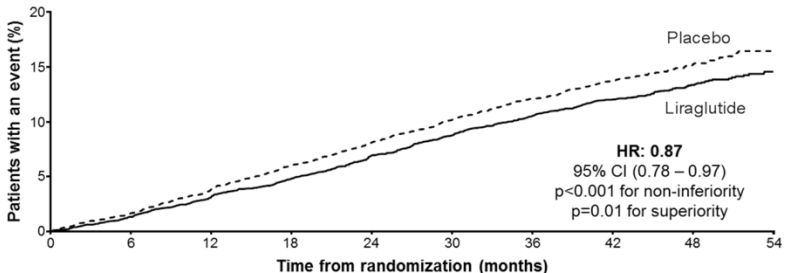


Cumulative incidence function. MACE, Major Adverse Cardiovascular Event; HR, hazard ratio.
* Two-sided tests for superiority were conducted (statistical significance was indicated if p≤0.0498)

EMPA-REG OUTCOME*

3

CV death, non-fatal myocardial infarction, or non-fatal stroke



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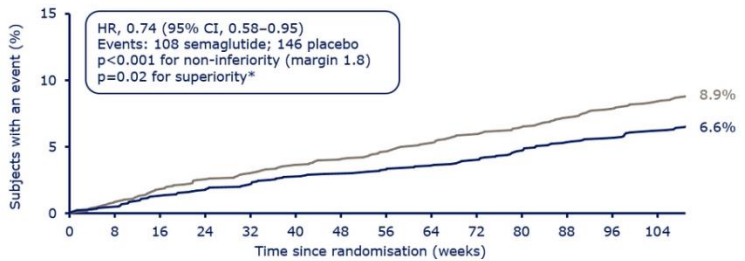

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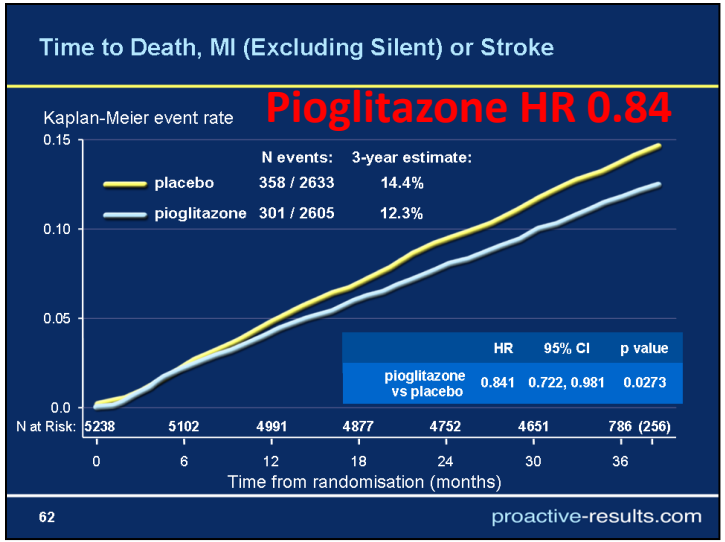
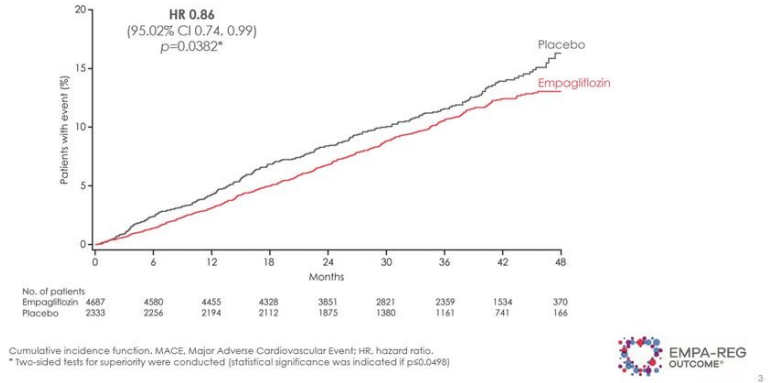
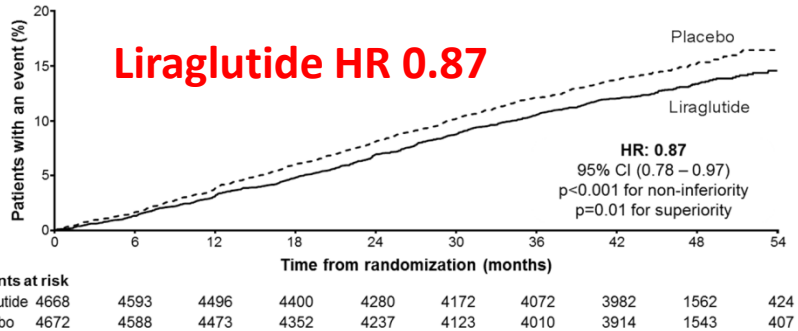


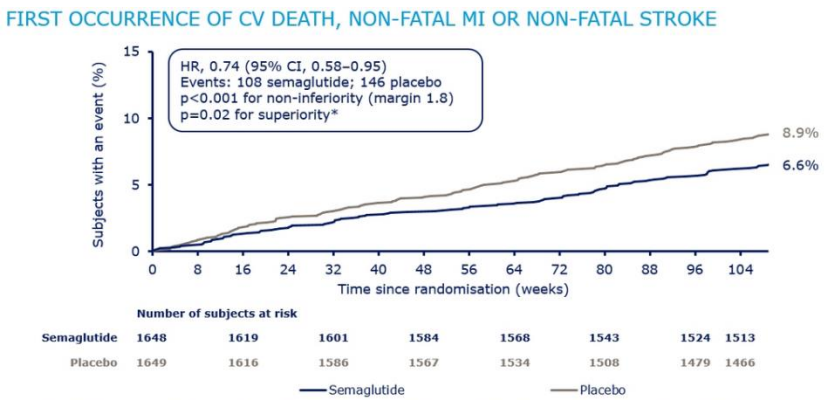
Empagliflozin HR 0.86



CV death, non-fatal myocardial infarction, or non-fatal stroke

Liraglutide HR 0.87





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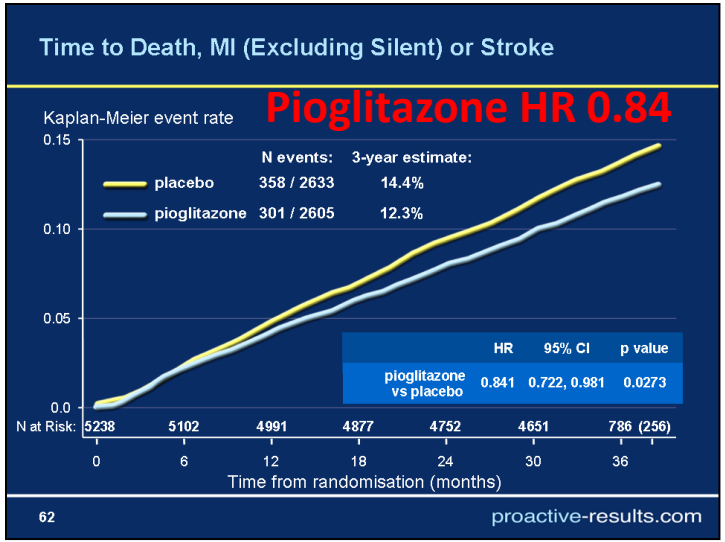

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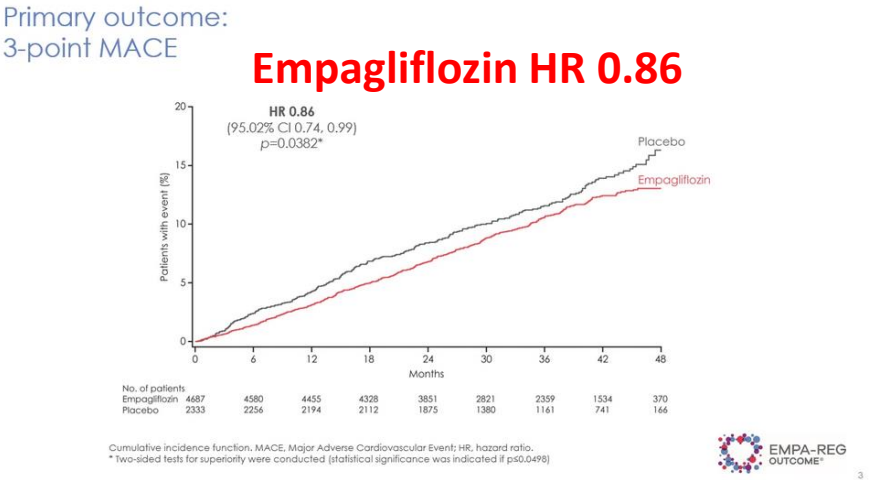

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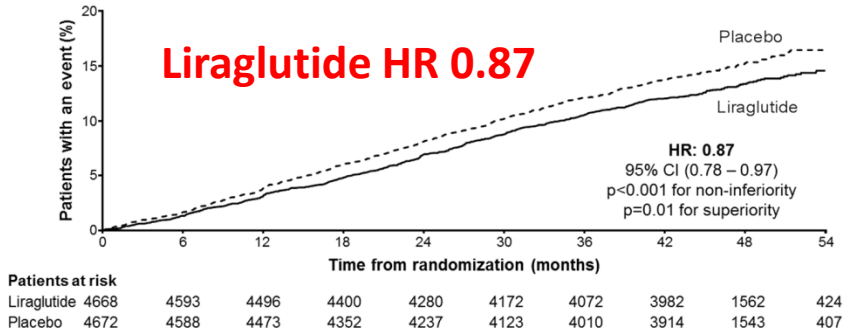

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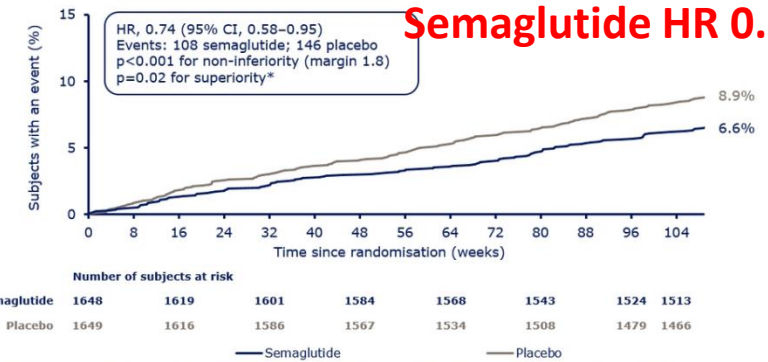
FIRST OCCURRENCE OF CV DEATH, NON-FATAL MI OR NON-FATAL STROKE

Semaglutide HR 0.74



Kaplan Meier plot for first event adjudication committee-confirmed CV death, non-fatal MI and non-fatal stroke using 'in-trial' data from subjects in the full analysis set.
*Not prespecified.
CV, cardiovascular; HR, hazard ratio; MI, myocardial infarction.

ABCD Nationwide Semaglutide Audit

- Many interesting things to learn from the audit as semaglutide moves into real clinical use
- You can do your own local analyses whilst contributing to the national effort

Association of British Clinical Diabetologists

Previous ABCD GLP1 RA Nationwide Audits

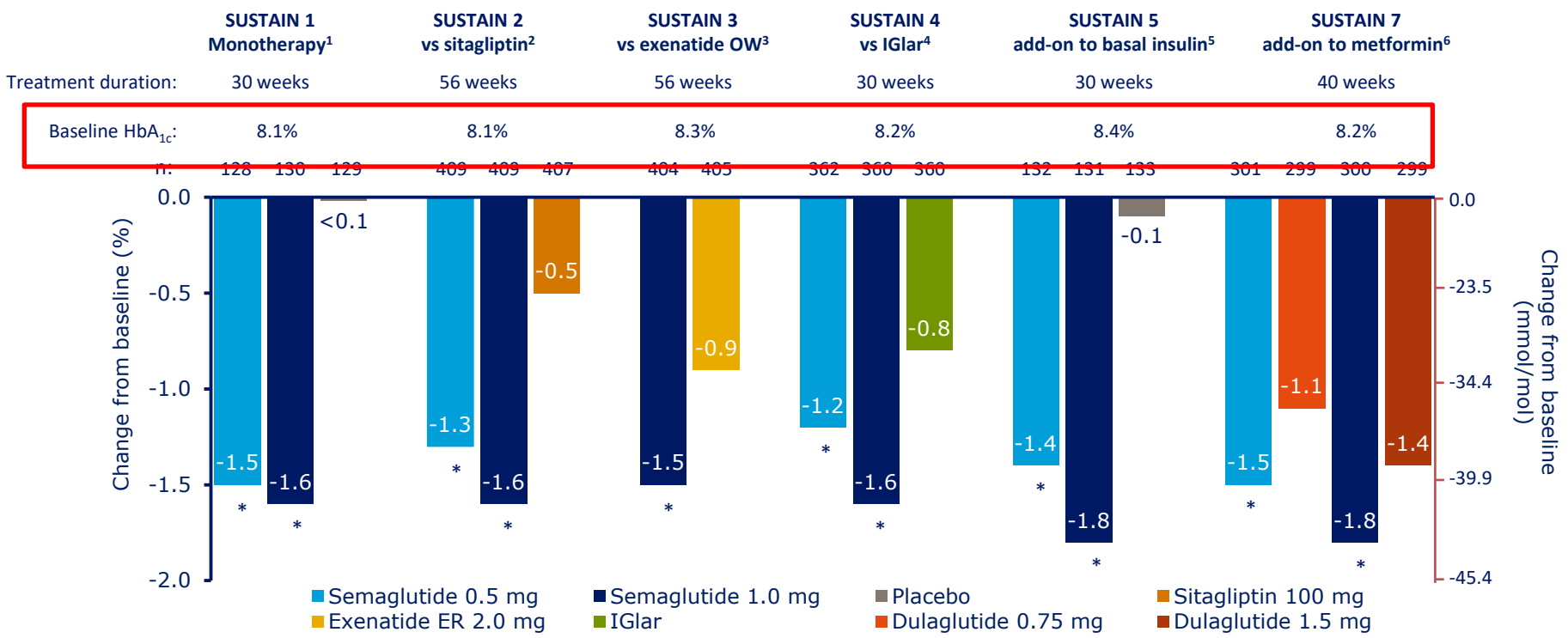
- Combined trials v real world

	Clinical trials combined	Real clinical use in UK (ABCD audit)
	Baseline HbA_{1c} (%)	
Exenatide	8.37	9.47
Liraglutide	8.5	9.40
	Baseline BMI (kg/m^2)	
Exenatide	32.72	39.8
Liraglutide	31	39.0

This slide discusses studies with different designs and comparators; no direct comparisons of data can be made between studies

Consistent efficacy results across SUSTAIN trials

ESTIMATED CHANGE IN HbA_{1c}



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ABCD liraglutide audit – the higher the baseline HbA1c the bigger the fall

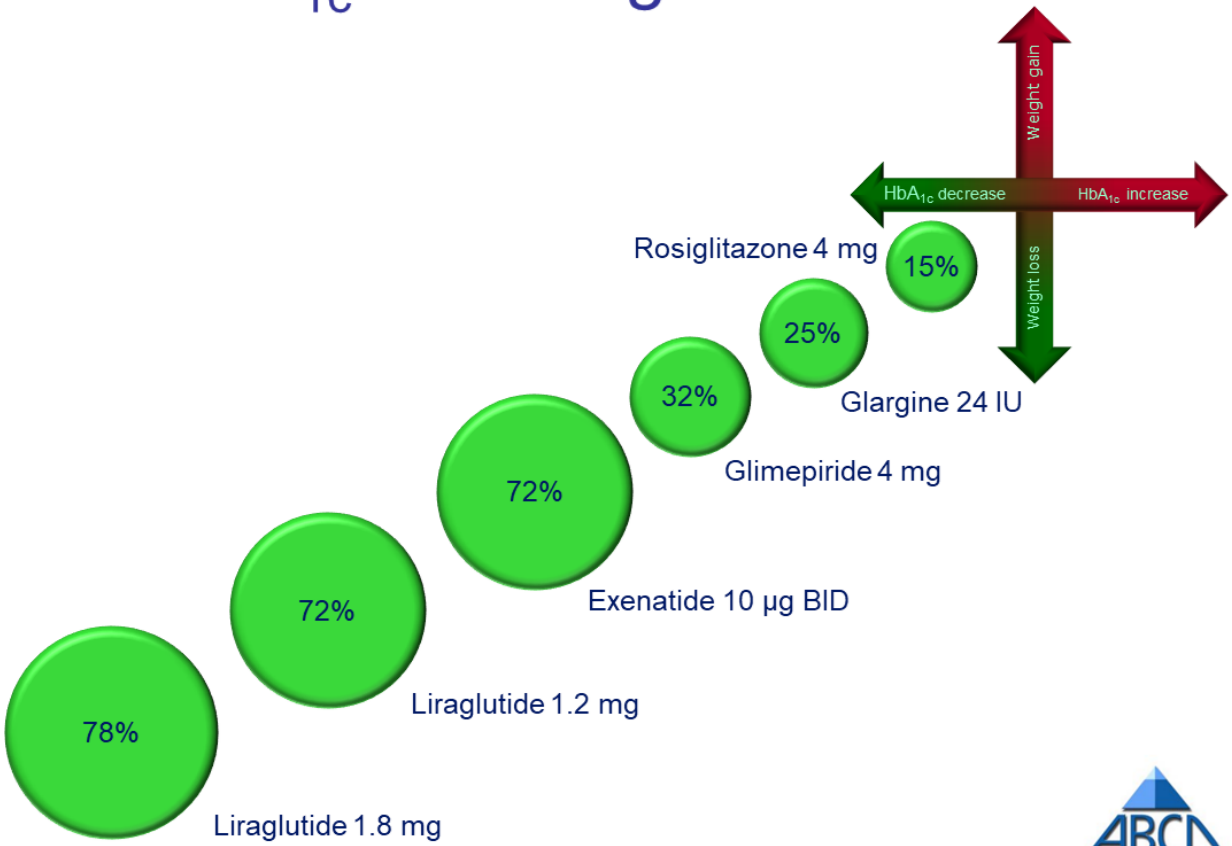
Table 3 Median HbA_{1c} change, proportion of patients achieving HbA_{1c} reduction of ≥1% and proportion of patients achieving target HbA_{1c} of 7% among patients treated with liraglutide in the ABCD audit; results stratified by baseline HbA_{1c} and use of insulin.

	Baseline HbA_{1c} (%)							
	7.0-7.9	8.0-8.9	9.0-9.9	10.0-10.9	11.0-11.9	12.0-12.9	13.0-13.9	P value
Non-insulin-treated								
n	91	158	161	106	60	35	11	
Median HbA_{1c} change, (%)	-0.7 [-1.1,-0.1]	-1.1 [-1.7,-0.5]	-1.4 [-2.2,-0.4]	-1.9 [-3.2,-0.9]	-2.6 [-3.9,-1.6]	-3.1 [-1.3,-4.5]	-2.0 [-0.3,-4.9]	< 0.001
Proportion achieving ≥1% reduction, n(%)	30 (33.0)	95 (60.1)	103 (64.0)	77 (72.6)	51 (85.0)	28 (80.0)	8 (72.7)	< 0.001
Proportion achieving HbA_{1c} of 7%, n(%)	50 (55.0)	58 (36.7)	35 (21.7)	25 (23.6)	11 (18.3)	4 (11.4)	1 (9.1)	< 0.001
Insulin-treated								
n	73	124	156	98	61	35	10	
Median HbA_{1c} change, (%)	-0.2 [-0.7,0.4]	-0.5 [-1.2,0.3]	-1.1 [-2.0,-0.2]	-1.3 [-2.6,-0.5]	-1.3 [-2.5,-0.5]	-1.8 [-3.4,-0.6]	-3.6 [-4.7,-1.6]	< 0.001
Proportion achieving ≥1% reduction, n(%)	11 (15.1)	41 (33.1)	82 (52.6)	61 (62.2)	36 (59.0)	24 (68.6)	9 (90.0)	< 0.001
Proportion achieving HbA_{1c} of 7%, n(%)	28 (38.4)	18 (14.5)	21 (13.5)	8 (8.2)	3 (4.9)	1 (2.9)	2 (20.0)	< 0.001

Median HbA_{1c} change results are shown as median [interquartile range]

Results show patients are more likely to achieve ≥1% HbA_{1c} reduction when baseline HbA_{1c} is higher and conversely more likely to achieve target HbA_{1c} of 7% if baseline HbA_{1c} is lower.

Percentage of subjects achieving fall in HbA_{1c} and weight loss

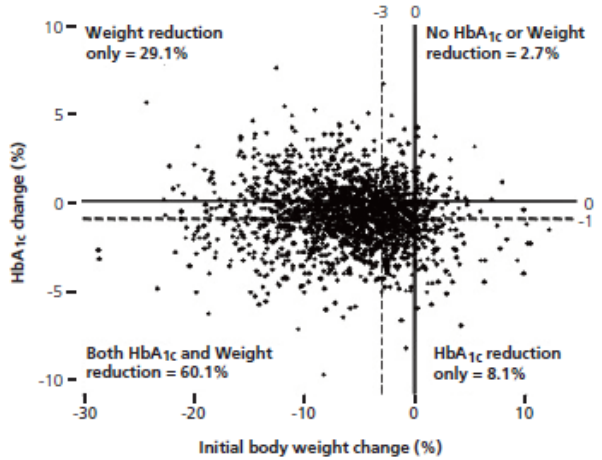


Data on file, Novo Nordisk

Association of British Clinical Diabetologists

Patients improving weight AND HbA1c in previous audits

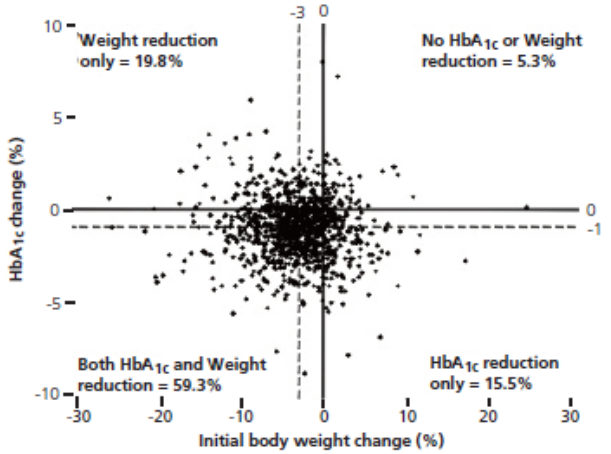
Figure 5. Scatterplot of HbA_{1c} change and initial body weight change at 20-32 weeks of 1882 patients treated with exenatide



Dotted line indicates criteria of ≥1% HbA1c reduction and ≥3% IBW reduction require by NICE for continuation of therapy – while 60.1% of patients achieved both HbA1c and weight reduction, only 28.6% achieved this to the criteria level set by NICE.

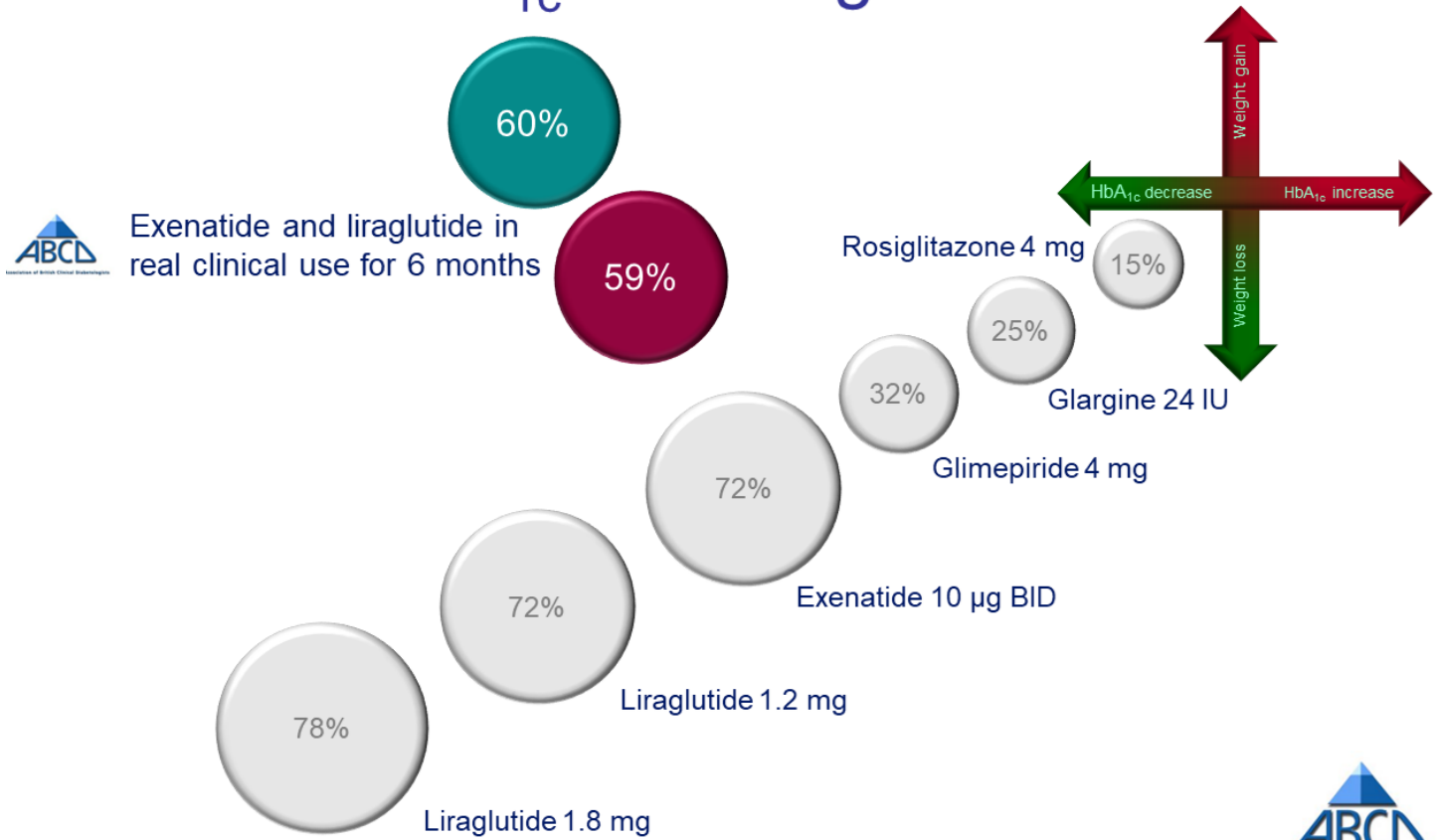
KY Thong et al. Br J Diabetes 2014; 14: 52-59

Figure 6. Scatterplot of HbA_{1c} change and initial body weight change at 20-32 weeks of 1023 patients treated with liraglutide



Dotted line indicates criteria of ≥1% HbA_{1c} reduction and ≥3% IBW reduction require by NICE for continuation of therapy – while 59.3% of patients achieved both HbA_{1c} and weight reduction, only 25.0% achieved this to the criteria level set by NICE.

Percentage of subjects achieving fall in HbA_{1c} and weight loss



Data on file, Novo Nordisk

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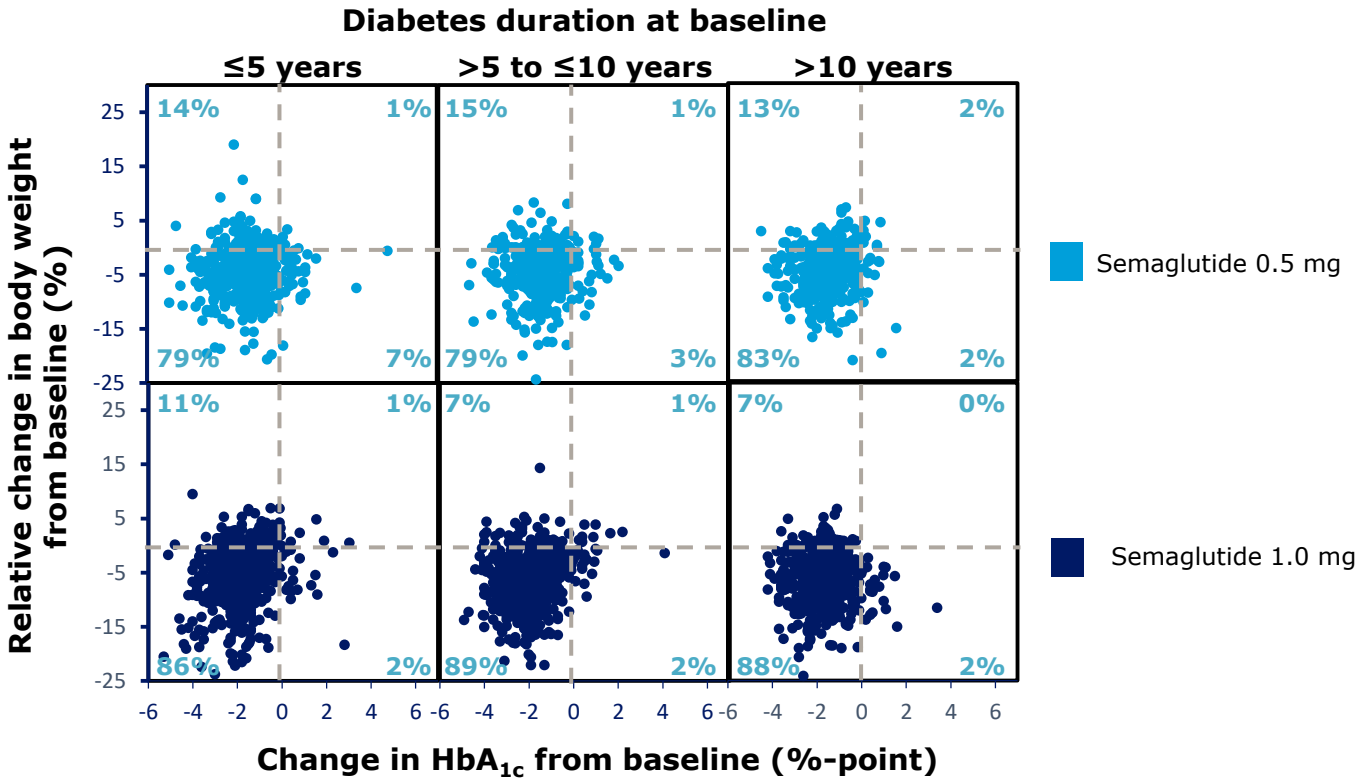
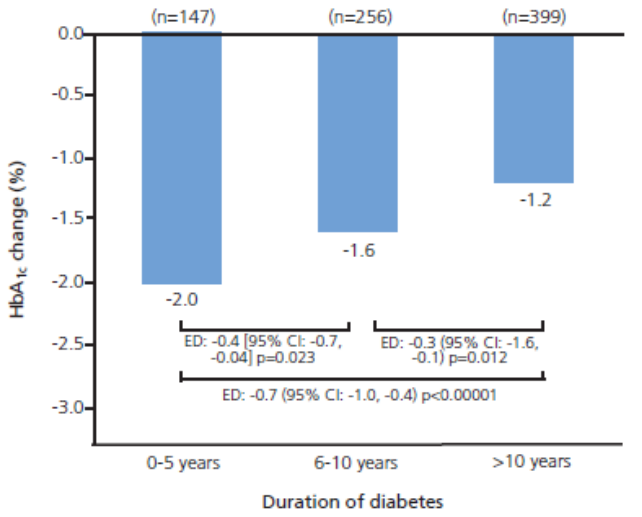
Changes in HbA_{1c} vs body weight by baseline diabetes duration



Data presented are based on observed on-treatment without rescue medication data, with MMRM predictions for missing HbA_{1c} and body weight values, from the six trials.
MMRM, Mixed Model Repeat Measurements.
Rosenstock J et al. Presented at the 78th Scientific Sessions of the American Diabetes Association, 22–26 June, 2018, Orlando, Florida, USA: Poster Presentation 1081-P.

ABCD liraglutide audit HbA1c changes according to duration of diabetes

Figure 2. Mean HbA_{1c} changes after 26 weeks of liraglutide treatment, stratified according to duration of diabetes

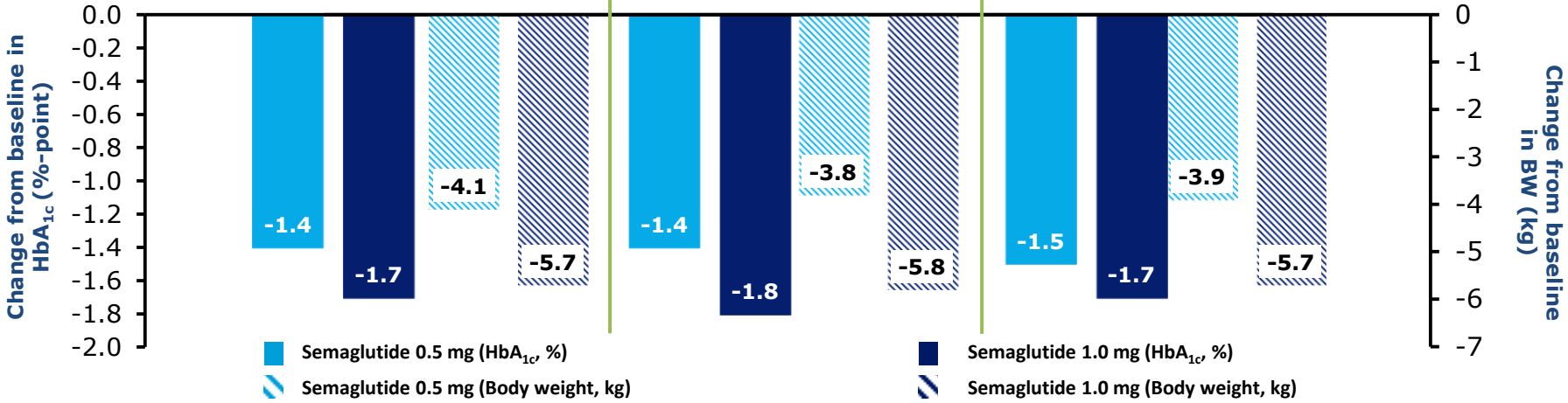


Columns show adjusted mean changes analysed by ANCOVA with baseline HbA_{1c} as a covariate. ED: estimated difference; CI: confidence interval

Thong KY et al. Br J Diabetes Vasc Dis 2015; 15(4): 169–172

Estimated change in HbA_{1c} and body weight by baseline diabetes duration

Diabetes duration	≤5 years				>5 to ≤10 years				>10 years			
Change from baseline:	HbA_{1c} (%)		Body weight (kg)		HbA_{1c} (%)		Body weight (kg)		HbA_{1c} (%)		Body weight (kg)	
N	533	641	533	641	423	565	423	565	376	528	376	528
Baseline	8.1	8.1	95.9	95.9	8.2	8.2	93.5	93.5	8.3	8.3	89.8	89.8
End of treatment	6.6	6.4	91.8	90.1	6.8	6.4	89.6	87.7	6.8	6.5	85.8	84.1



Data presented are estimated change from baseline to week 30 or week 40 based on a meta-analysis of data from the six trials. BW, body weight; N, number of subjects in the full analysis set.
Rosenstock J et al. Presented at the 78th Scientific Sessions of the American Diabetes Association, 22–26 June, 2018, Orlando, Florida, USA: Poster Presentation 1081-P.

ABCD Nationwide Semaglutide Audit

- As you start to use semaglutide please enter ALL your patients into the nationwide audit