The ABCD nationwide semaglutide audit: Initial insights from real-world data

TSJ Crabtree; Dev Sennik; Anurita Rohilla; Alex Bickerton; Dennis Barnes; Siva Sivappriyan; Hazel Reid; Karen Adamson; Suzanne Phillips; Alison Evans; Ian Gallen, REJ Ryder on behalf of the ABCD nationwide semaglutide audit contributors

Sandwell and West Birmingham Hospitals NHS Trust; University Hospitals of Derby and Burton NHS Trust; University of Nottingham; NHS Lothian; Cheltenham General Hospital NHS Trust; Yeovil District Hospital NHS Trust; Princess Alexandra Hospital; Maidstone Hospital; The Tunbridge Wells Hospital NHS Trust; Royal Berkshire NHS Foundation Trust; Association of British Clinical Diabetologists semaglutide audit programme

Introduction

Semaglutide is a once weekly injectable glucagon-like peptide 1 receptor agonist (GLP1-RA), initially released in 2018. The results from the Phase 3a SUSTAIN 1 randomised control trial showed significant improvements in weight and HbA1c following commencement[1]. The remainder of the SUSTAIN programme, assessing its safety and use in combination therapies, showed similar positive findings[2].

There is a clear role for further evidence from real-world studies in order to provide reassurance on their safety and effectiveness in the real-world[3], where cohorts are often different and include patients with more extreme characteristics than might be acceptable in a randomised controlled trial. We noted that in the initial clinical trials with semaglutide, the mean weight of the patients was about 93kg and mean HbA1c was about 66mmol/mol(8.2%)[2].

Methods

Data were extracted from the ABCD semaglutide nationwide audit programme tool and combined with data submitted by ABCD members who collaborated with their clinical commissioning groups to obtain anonymised data extracted from Eclipse. Data were reviewed and checked for errors.

Patients with a minimum dataset of a baseline and follow-up visit were included in this initial analysis.

Outcomes of interest included weight and HbA1c. Further sub analysis looking at any additional change in weight and HbA1c in those switching from an alternative GLP1RA to semaglutide was also performed. As well as a comparison with the GLP1RA naïve group.

Data were assessed for skew and analysed using paired t-tests. Analysis was performed in Stata SE 16.

Fig 1. *Table showing the baseline characteristics of the entire population included in this analysis of the UK ABCD semaglutide audit*

Characteristic		n=1104
Age, years ± SD		58.4 ± 11.0
Male, %		52.8
Median diabetes duration, year (IQR)		10.9 (6-15)
Mean Hba1C,	% ± SD	9.35 ± 1.76
	mmol/mol ± SD	75.2 ± 18.4
Mean BMI, kg/m2 ± SD		37.2 ± 7.3
Mean weight, kg ± SD		107.5 ± 23.5
Median ALT, U/L (IQR)		26 (19-37)
Mean eGFR, ml/min		77.1 ± 15.9
Mean Systolic BP, mmHg ± SD		134.0 ± 14.8
Mean Diastolic BP, mmHg ± SD		78.6 ± 20.2
Mean Total Cholesterol, mmol/L		4.4 ± 1.2
Mean Triglycerides, mmol/L		2.8 ± 2.4

ALT, alanine aminotransferase; BMI, body mass index; BP, blood pressure

eGFR, estimated glomerular filtration rate

IQR, interquartile range; SD, standard deviation

Declaration of interests/Funding

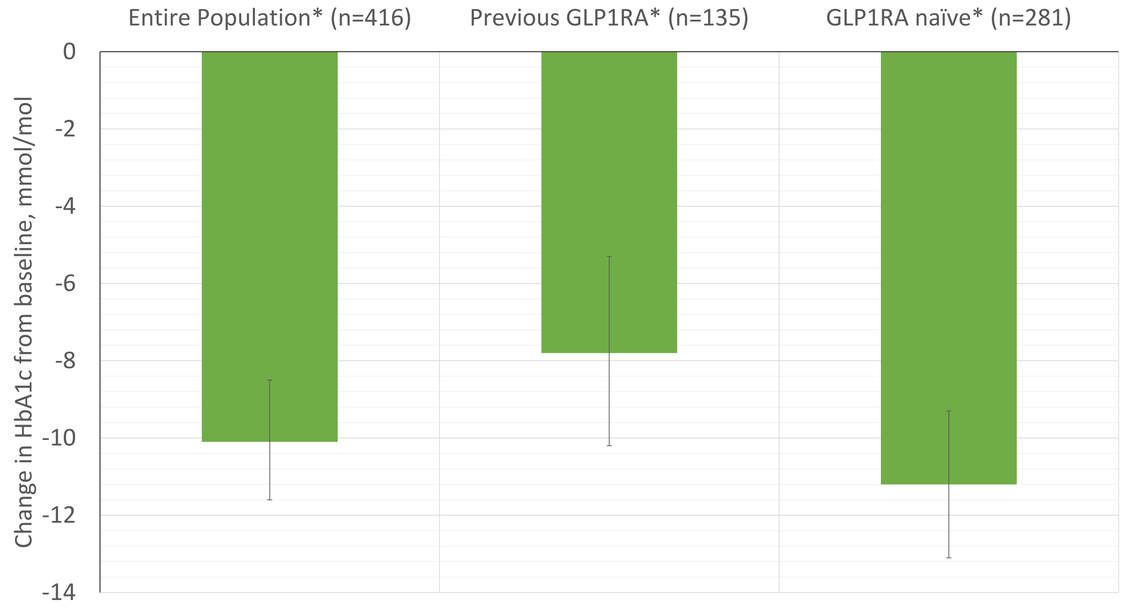
This ABCD semaglutide audit programme is funded by an unrestricted grant from NovoNordisk

TSJC has received speaker fees and educational grants from NovoNordisk and Sanofi

References

1. Sorli C, Harashima SI, Tsoukas GM, Unger J, Karsbøl JD, Hansen T, Bain SC. Efficacy and safety of once-weekly semaglutide monotherapy versus placebo in patients with type 2 diabetes (SUSTAIN 1): a double-blind, randomised, placebo-controlled, parallel-group, multinational, multicentre phase 3a trial. Lancet Diabetes Endocrinol. 2017 Apr;5(4):251-260. doi: 10.1016/S2213-8587(17)30013-X. Epub 2017 Jan 17. PMID: 28110911.
2. Gomez-Peralta, Fernando, and Cristina Abreu. "Profile of semaglutide in the management of type 2 diabetes: design, development, and place in therapy." *Drug design, development and therapy* vol. 13 731-738. 20 Feb. 2019, doi:10.2147/DDDT.S165372
3. Chatterjee, S, Davies, MJ, Khunti, K. What have we learnt from "real world" data, observational studies and meta-analyses. *Diabetes Obes Metab*. 2018; 20: 47– 58. https://doi.org/10.1111/dom.13178

Fig 2. *Bar chart showing reductions in HbA1c in mmol/mol following commencement of infectable once-weekly semaglutide across the population as a whole and then subdivided dependent on previous GLP1RA exposure, error bars representing 95% confidence intervals. P-values from paired t-tests. *P<0.001*

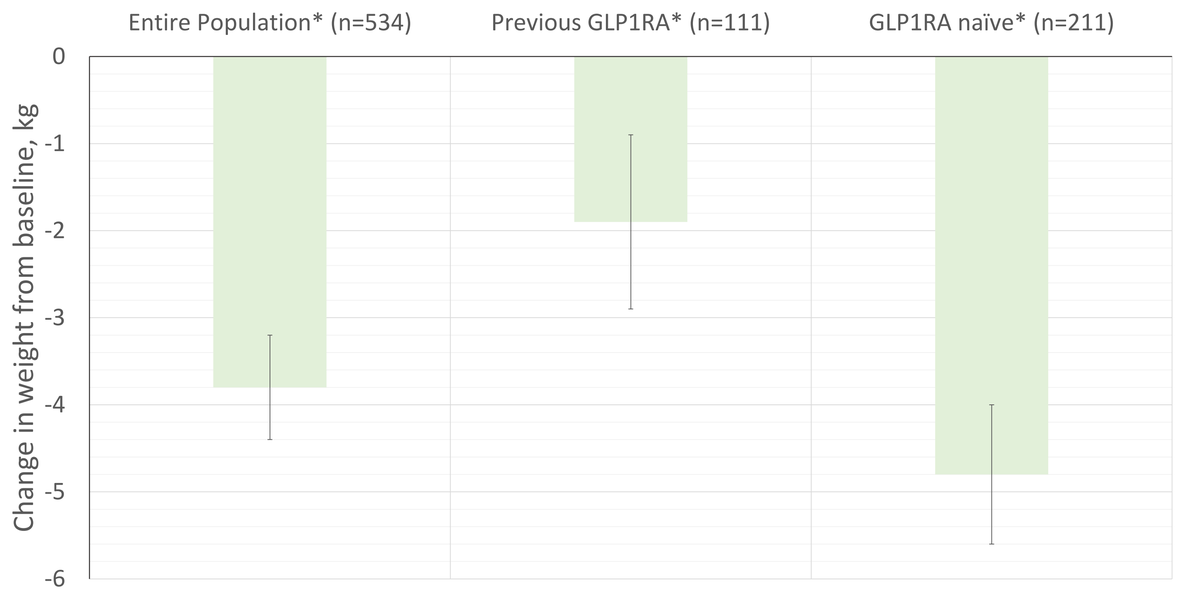


Results

1104 were extracted for analysis. The population baseline characteristics were as displayed in **Fig 1.** Median follow-up time was 0.36 years (IQR 0.23-0.57). 23.8% (262/1104) had previously been taking an alternative GLP1RA.

Significant HbA1c reductions (P<0.0001) and weight (P<0.0001) from baseline were observed across the entire population. Furthermore, additional reductions in Hba1c and weight were still noted in those switching from a different GLP1RA to semaglutide (P<0.0001 for both), albeit by a smaller magnitude. The results for HbA1c change are displayed in **Fig 2.** and for weight change are displayed in **Fig 3.**

Fig 3. *Bar chart showing reductions in weight in kg following commencement of infectable once-weekly semaglutide across the population as a whole and then subdivided dependent on previous GLP1RA exposure, error bars representing 95% confidence intervals. P-values from paired t-tests. *P<0.001*



Conclusion

Our real-world data show that HbA1c reductions and weight loss are still significant in a real-world cohort in the UK. Additionally, in this early analysis from the ABCD nationwide semaglutide audit our results suggest that the patients receiving semaglutide in real clinical practice are heavier and more poorly controlled than in the clinical trials.

Additionally, switching from an alternative GLP1RA to semaglutide is associated with statistically significant further reductions in HbA1c and weight, although perhaps of a smaller magnitude than in the GLP1RA naïve cohort.

Further work planned will assess the impact of semaglutide therapy in different subgroups and on different important outcomes including renal function and liver function.