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## Effectiveness of Semaglutide in Oral vs Subcutaneous Injectable Formulation: An analysis of UK Real-world Data in the Association of British Clinical Diabetologists (ABCD) national audit

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### Introduction

- GLP1a (Glucagon like peptide 1 agonists) is widely used in the management of people with type 2 diabetes
- Semaglutide is the only GLP-1a available in both injectable and oral formulations.
- Oral semaglutide has demonstrated similar efficacy in HbA1c reduction and weight reduction compared to injectable liraglutide [1]
- Real-world data on comparing the efficacy between oral vs injectable semaglutide is limited, only available in smaller population size [2,3,4].
- The aim of this study is to compare between the two preparations in real-world setting so as to provide more informed decision to patients and clinicians.

### Methods

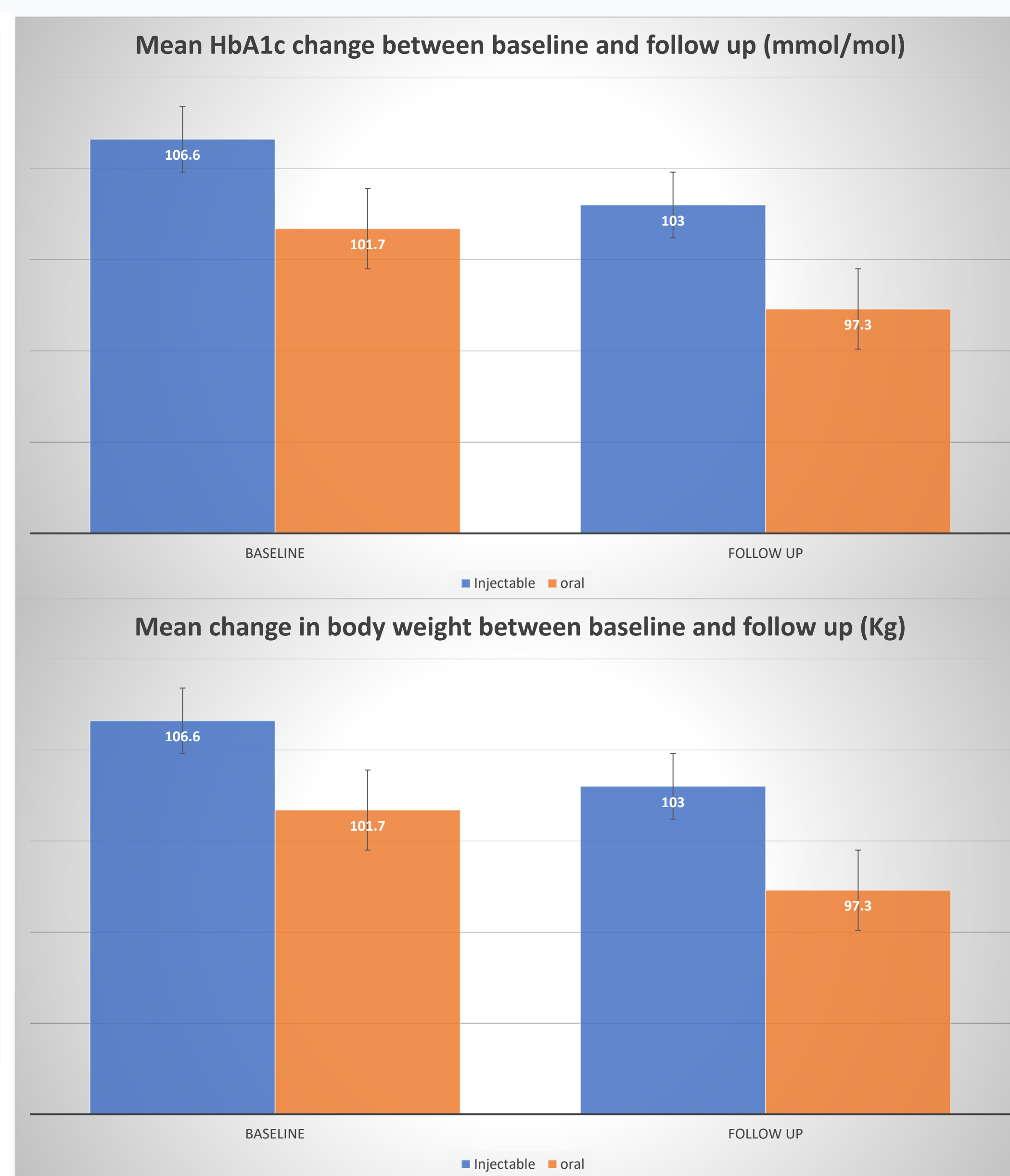
- Multi-center retrospective observational study from ABCD national audit registry
- Data collected from 10 centers across United Kingdom from 2019 till 2024
- Data was analyzed by STATA 18, using linear regression analysis with key variables including age and baseline HbA1c

### Results

- 1484 people were on injectable semaglutide group (49.2% female, mean age 58.9 +/- 10.9 years) and 445 people on oral semaglutide group (38% female with mean age 58.9 +/- 12.5 years)
- The mean follow-up time was 228.62 +/- 165.18 days in oral group and 180 days in injectable group.
- The injectable semaglutide showed statistically significant greater reduction in HbA1c and total cholesterol compared to oral group but the rest of the parameters are not statistically significant.
- The results are summarized in the table 1.0 as below.

|                            | Injectable Semaglutide group              |  |  | Oral Semaglutide Group                    |  |  | Mean difference of change in variables between two groups after intervention +/- Standard deviation (p-value) |
|----------------------------|---|--|--|---|--|--|---|
|                            | Mean Baseline +/- Standard deviation (SD) | Mean Follow-up +/- Standard deviation (SD) | Mean difference between baseline and follow-up +/- Standard deviation (SD) | Mean Baseline +/- Standard deviation (SD) | Mean Follow-up +/- Standard deviation (SD) | Mean difference between baseline and follow-up +/- Standard deviation (SD) |   |
| HbA1c (mmol/mol)           | 79.1 +/- 18.8                             | 65.5 +/- 16.4                              | 13.3 +/- 17.8  | 77.9 +/- 18.7                             | 68.5 +/- 18.2                              | 9.4 +/- 17.2   | -3.8 +/- 1.3 (0.002)  |
| Weight (Kg)                | 106.6 +/- 23.3                            | 103.0 +/- 23.5                             | 4.7 +/- 7.6  | 101.7 +/- 22.9                            | 97.3 +/- 21.6                              | 3.8 +/- 7.0  | -0.2 +/- 0.5 (0.776)  |
| BMI                        | 37.0 +/- 7.4                              | 36.1 +/- 7.1                               | 1.5 +/- 2.1  | 34.00 +/- 7.02                            | 33.34 +/- 6.8                              | 1.4 +/- 0.2  | -0.2 +/- 0.2 (0.897)  |
| ALT (IU/L)                 | 30.6 +/- 18.6                             | 28.0 +/- 16.3                              | 2.4 +/- 15.1   | 25.9 +/- 12.7                             | 25.26 +/- 13.8                             | 0.7 +/- 10.4   | -1.8 +/- 1.2 (0.124)  |
| Total Cholesterol (mmol/L) | 4.4 +/- 1.2                               | 4.0 +/- 1.0                                | 0.4 +/- 0.9  | 4.6 +/- 3.3                               | 4.2 +/- 1.2                                | 0.2 +/- 1.0  | -0.2 +/- 0.08 (0.033)   |
| Triglyceride (mmol/L)      | 2.9 +/- 2.4                               | 2.4 +/- 1.7                                | 0.5 +/- 2.0  | 3.1 +/- 4.4                               | 2.7 +/- 3.4                                | 0.6 +/- 0.3  | +0.2 +/- 0.3 (0.434)  |

Table 1. showing the mean baseline and follow-up data of injectable and oral semaglutide and mean differences of post-intervention variables between injectable and oral semaglutide groups (negative values mean injectable is superior to oral)



### Conclusion

- Both oral and injectable Semaglutide groups experienced a reduction in HbA1c in UK real-world setting.
- Injectable Semaglutide was associated with a greater HbA1c reduction.
- These findings support personalized treatment choices based on individual preferences and ability to comply to oral ingestion instructions to ensure optimal absorption of oral formulation

### References

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