

Influence of Glycosylated Hemoglobin on Faricimab Outcomes in the Treatment of Diabetic Macular Oedema: A 12-Month Study from University Hospital Coventry and Warwickshire

Dr. Xiaoli Chen, Dr. Hnin Zar Chi Lin, Mr. Nonavinakere Manjunatha

NHS University Hospitals Coventry and Warwickshire NHS Trust

Introduction and Aims

Intensive glycemic control can delay the onset of retinal complications and reduces structural retinal abnormalities, including disorganization of the retinal inner layers (DRIL), intraretinal fluid, and cysts in the DCCT/EDIC studies. Faricimab, a novel anti-VEGF drug, has shown promise in effectively extending treatment intervals for diabetic maculopathy.

The purpose of this study is to evaluate the impact of baseline glycosylated hemoglobin (HbA1c) levels on the effectiveness of Faricimab in the treatment of diabetic macular oedema (DMO).

Methods

Retrospective study

Electronic medical records and OCT data from July 2022 to August 2024 were reviewed. The correlation between baseline HbA1c levels and treatment outcomes was assessed, including best-corrected visual acuity (BCVA), anatomical response (central subfield thickness [CST]), and the total number of intravitreal injections. Subgroup analysis compared patients with intensive glycaemic control (HbA1c < 7% / 53 mmol/mol) to those with HbA1c above 7%.

Inclusion criteria:

Patients who commenced Faricimab injections for diabetic macular oedema between July 2022 and August 2023 were included in the study. All participants met NICE criteria of vision impairment due to centrally involving macular oedema with CST exceeding 400 µm.

Exclusion criteria:

Patient who has previously received other anti-VEGF drugs (drug-switch) were excluded. Two of patients were switched to steroid implants during the study period, hence were excluded for analyse.

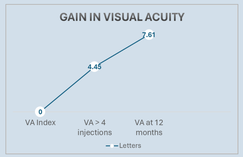
Results

(1) 64 treatment-Naïve patients met the criteria and included in the study. All patients demonstrated both visual and anatomical improvement following Faricimab injections.

Table 1 Demographic of study patients

Age (years)	61 ±14
Number of injections	6 ±2
Baseline BCVA (LogMar letters)	67±8
BCVA last injection (LogMar letters)	73±17
OCT/CST baseline	449±94 um
OCT/CST last injection	315±78 um
HbA1C (mmol/mol)	67±19 (8.3%)

Valuae are presented as mean ± standard evaiation or number.
BCVA- best corrected visual acuity, CST- central subfield thickness



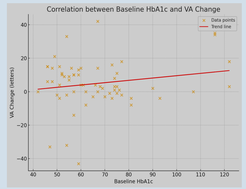


After 4 injections	At 1 year time
4.45 letters (-26 to 30 letters)	7.61 letters (-8 to 34 letters)

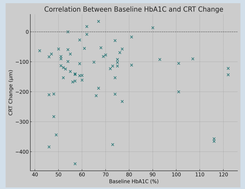
After 4 injections	At 1 year time
-127.7 um (154 to -362 um)	-132.84 um (35 to -362 um)

VA index using BCVA (Best Corrected Visual Acuity) gains by LogMar letter. CRT using central subfield thickness of central 1mm area on OCT.

(2) No statistically significant correlation was observed between baseline HbA1c levels and either best-corrected visual acuity (BCVA) or central macular thickness (CST) (P > 0.05)



The correlation between baseline HbA1C and VA gains post injection is not statistically significant. Pearson's correlation analysis, correlation coefficient r= 0.18, P= 0.15 (>0.05)

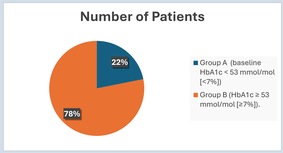


The correlation between baseline HbA1C and anatomical change (CRT) post injections is not statistically significant. Pearson's correlation analysis, r= -0.08, P=0.531 (>0.05).

Results

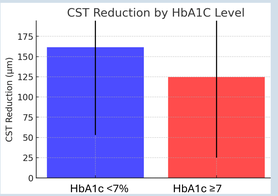
Effect of Baseline HbA1c on Faricimab Treatment Outcome.

- Patient numbers
  Group A (HbA1c < 53 mmol/mol [<7%]): 14
  Group B (HbA1c ≥ 53 mmol/mol [≥7%]): 50



- At the final visit, the mean improvement in BCVA was 5.8 ± 12.8 ETDRS letters in patients with intensive glycaemic control (Group A), compared to 4.7 ± 14.5 ETDRS letters in the other patients (Group B)
- The average number of Faricimab injections remained the same in both groups (n = 6.5).

- Group A demonstrated greater anatomical improvement compared to Group B, although the difference did not reach statistical significance (t test, P > 0.05)



The mean CST reduction was -161.6 ± 108.2 µm in Group A (HbA1c <53 mmol/mol [<7%]) and -124.6 ± 99.7 µm in Group B (HbA1c ≥ 53 mmol/mol [≥7%]).

Discussion

- Patients with a baseline HbA1c <53 mmol/mol (<7%), demonstrated a trend toward better anatomical reduction of macular oedema, although this difference was not statistically significant in our study.
- Improvements in visual acuity and the number of Faricimab injections required appeared to be independent of baseline HbA1c levels, consistent with post-hoc analyses from the RIDE/RISE trials.

Conclusion

- Intensive glycaemic control may enhance therapeutic outcomes.
- Further studies with larger sample sizes are needed to validate these findings.

Reference

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