

Anti-vegf therapy in diabetic macular oedema patients over four years

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Abstract

OBJECTIVES: To evaluate visual acuity (VA) outcomes of intravitreal anti-vascular endothelial growth factor (VEGF) in diabetic macular oedema (DMO).

METHODS: In this retrospective cohort study, electronic medical records for all patients undergoing intravitreal injections (IVI) in a tertiary referral centre between March 2013 and October 2018 were analysed. Treatment response in terms of visual acuity outcomes were reported for all eyes over a 4-year observation period.

RESULTS: Our cohort includes 2614 DMO eyes of 1964 patients over 48 months. Cox proportional hazards modelling identified injection number (hazard ratio [HR] = 1.18), male gender (HR = 1.13), and baseline VA (HR = 1.09) as independent predictors to reach a favourable visual outcome of more than 70 Early Treatment Diabetic Retinopathy Study (ETDRS) letters. Half of our cohort reached 70 letters 1.9 months after starting anti-VEGF therapy. Of those that reached 70 letters, 50% fell below 70 by 14.7 months.

CONCLUSION: To date, this is the largest single centre cohort study and over the longest

observation period reporting on real-life outcomes of anti-VEGF in DMO. We have made an anonymised version of our dataset available on an open-source data repository as a resource for clinical researchers globally.

Methods

Study setting and design: This study is a retrospective cohort study of diabetic patients treated for DMO by anti-VEGF at a tertiary referral center - Moorfields Eye Hospital NHS Foundation Trust, London, UK. We obtained approval by the Institutional Review Board of the hospital (ROAD17/031) - Audit registration was completed (MEH-233). In this study, we complied with the Declaration of Helsinki and STROBE guidelines for the reporting of cohort studies.

Data source: All clinical information at Moorfields Eye Hospital is recorded within an electronic medical record (EMR) application (OpenEyes Foundation, London, UK). A SQL database (SQL Server Reporting Service, Microsoft Corporation, Richmond, USA) containing all the information from the EMR is in place and regular updates are performed overnight to keep the data warehouse up-to-date. VA is reported in ETDRS letter score. The highest value (independent of measurement method) available at each visit was chosen.

Participants: A data-warehouse query for patients that received one IVI for DMO (between March 2013 and October 2018) resulted in 3226 unique eyes from 2368 patients. Exclusion criteria were those that: (i) suffered from macular oedema secondary to other conditions than diabetes; (ii) under 18 years old; (iii) received fewer than 3 IVI; (iv) received bevacizumab, dexamethasone intravitreal implant, or fluocinolone acetonide intravitreal implant; leaving 2614 eyes of 1964 patients taken forward for analysis.

Usage Notes

anon_id	Deidentified patient identification number String
eye	Laterality of eye. String, categorial (r = right, l =left)

follow_up_days	Days following baseline i.e. injection number 1 Number, integer 0, xx, xxx, ...
baseline_age	Age at baseline i.e. injection number 1 Number, categorical (20-30 = [20,30], 31-40 = [31,40], 41-45 = [41,50], 51-55 = [51,60], 61-65 = [61,70], 71-75 = [71,80], 81-100 = [81,100])
ethnicity	String, categorical (Asian or Asian British, White, Black or Black British, Mixed, Other ethnic group, Unknown)
gender	Gender String, categorical (m = male, f = female)
va	Visual acuity in ETDRS (early treatment diabetic retinopathy study) letters Number, integer

baseline_va	Visual acuity in ETDRS (early treatment diabetic retinopathy study) letters at baseline i.e. injection number 1 Number, integer
inj_num	Injection number Number, integer
inj_given	Injection given or not String, categorical (y = Yes, n = no)

References

This dataset is supplement to <https://doi.org/10.1038/s41433-020-1048-0>

Files

2 files for this dataset

200319_DMO_report...1_anonymised.csv	5.10 MB	text/csv
r_code_for_analysis.R	17.67 kB	application/octet-stream

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