Virtual Clinic in Managing Diabetic Maculopathy During Covid-19 Pandemic in Largest NHS Trust in England

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Introduction and Aims

Covid 19 pandemic has significant impact on ophthalmic service, including the treatment for clinically significant diabetic macular oedema (DMO). Here, we evaluated the effect of virtual clinic in managing DMO in the largest NHS Trust in England.
Setting: Birmingham University Hospital NHS Trust- HGS

Methods

Virtual Clinic has been set up in multiple sites since August 2020: (1) Injections combined with visual acuity (VA) & Optical coherence tomography (OCT) assessments; (2) VA and OCT were reviewed and management plans made virtually by clinicians; (3) Telephone consultation as necessary.
Inclusive criteria: Electronic records notes and OCT results between 01/08/20 and 28/02/21 were reviewed. Patients were included if they had attended DMO virtual clinic and received ≥ 2 intravitreal injections.
Exclusive criteria: Single injection during the audit period.
Measurement:. Best corrected visual acuity (BCVA, Logmar) and macular OCT (average thickness, central thickness and total volume) were used for analysis, and the difference between the first and last visits were calculated.

Results

874 Intravitreal injections were delivered to 312 eyes for the treatment of DMO in the 7 months. The drugs used to include Aflibercept (404 eyes), Ranibizumab (98 eyes), Bevacizumab (9 eyes), Dexamethasone implant (25 eyes) and Fluocinolone implant (1 eye). Among those, 225 eyes had ≥ 2 injections.

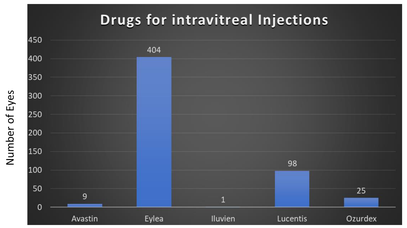
(1) Visual Acuity

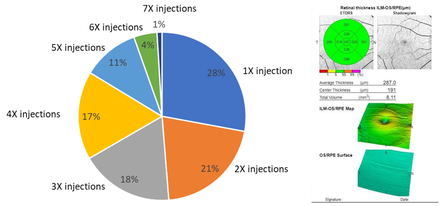
The participants gained an average of 3.65 ± 8.18 (SD) logMAR letters . BCVA stabilized or improved in 69% eyes (156/225).

Table 1 Demographic and history of study patients

Age (years)	60.8 ± 13.6
Number of Injections	2.80 ± 1.57
Side (Right: Left)	438 : 436
Baseline BCVA (letters)	45.00 ± 8.78 (logMAR 0.8 ± 0.15)
BCVA at injections (letters)	58.90 ± 18.38 (logMAR 0.5 ± 0.35)
Macular OCT	
Average thickness	286.65 ± 58.90um
Central thickness	255.09 ± 149.91um
Total volume	8.12 ± 1.65mm3

Values are presented as mean ± standard deviation or number; BCVA = best-corrected visual acuity; logMAR = logarithm of minimal angle of resolution;

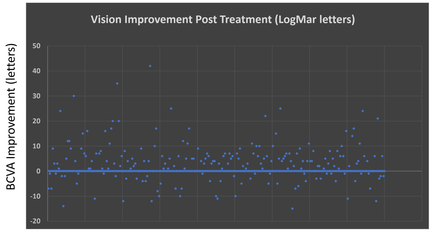




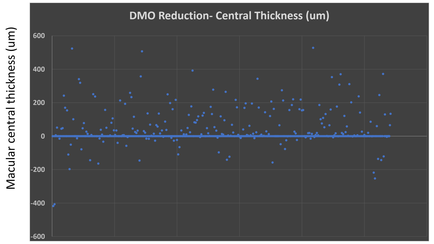
(2) Macular OCT

Central macular thickness reduced by 65.75 ± 133.54 (SD)um following treatment. Macular average thickness and total volume also decreased.

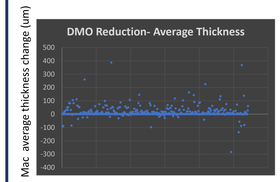
Results	Value (Mean ± SD)
BCVA	
Improvement (logMAR letter)	3.65 ± 8.18
VA stabilized or improved (%)	69.3% (156/225 eyes)
VA reduced (%)	30.7% (58/225 eyes)
Macular OCT	
Average thickness reduction (um)	29.56 ± 58.79
Central thickness reduction (um)	65.75 ± 133.54
Total volume reduction (mm^3)	0.46 ± 5.28



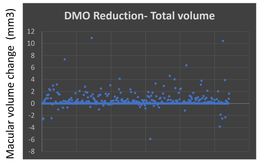
Scatter plot showing the logMAR BCVA improvement for each patient post intravitreal injections (Mean± sd, 3.65 ± 8.18)



Scatter plot showing central macular thickness reduction for each patient post intravitreal injections. (Mean± sd, 29.56 ±58.79 um)



Reduction on macular average thickness 65.75 ± 133.54 um



Reduction on macular total volume 0.46 ± 5.28 mm3

Discussion

- During pandemic, ophthalmic services had to reduce the number of face to face (F2F) appointments due to the pressure on healthcare system from rapid increase covid cases and the need for social distancing.
- Royal College of Ophthalmologist updated the guideline for the medical retinal management during pandemic in 2020, suggestive maintaining care for those patients who need it . Virtual review with OCT and wide field colour photography is the preferred option to review these patients.
- Virtual approach reduced the exposure to covid at the hospital; It is also highly efficient. Juaristi et al. reported that less than 50% of time are required for virtual appointment compared to F2F visit.
- We demonstrated that large number of DMO patients have been treated through virtual clinic during pandemic. It is a useful and safe platform to preserve patients' vision and reduce their macular oedema.
- Future studies
  Virtual clinic patient satisfaction survey
  Outcomes from long-term follow-up

Reference
Medical Retinal Management Plans during COVID; (updated)
Juaristi , Irigoyen and Irigoyen et all, Clinical Ophthalmology 2022