# Impact of COVID-19 on injections and visual acuity with adherence or not to the RCOphth Diabetic Macular Oedema guidance for patients treated with aflibercept

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## Aim:

Assessing Adherence and impact of the Royal College of Ophthalmologists' COVID-19 guidance published on 30/03/2020 for DMO patients. This advised deferring anti-VEGF injections and reviewing in clinic after 4 months with "exceptions" for PDR or severe NPDR eyes.

## Methods:

Anonymised data from 19 centres for patients starting treatment with Aflibercept before 01/04/2020 were extracted from Medisoft.

Adherence to the RCOphth guidelines was defined as eyes with ≤1 clinic visit within a 4 month period (excluding "exception" eyes). All patients who had proliferative diabetic retinopathy (PDR) were defined as adhering to the RCOphth guidelines.

The four time periods throughout the results are:

- Period 1 (01/04/2020 to 31/07/2020) – N = 3,664
- Period 2 (01/08/2020 to 30/11/2020) – N = 3,521
- Period 3 (01/12/2020 to 31/03/2021) – N = 3,293
- Period 4 (01/04/2021 to 31/07/2021) – N = 2,839

## Results:

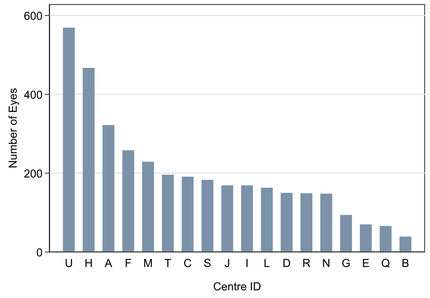
Within the study period there were 3,644 eligible eyes from 2,936 patient.

For eligible patients, there were 1,197 (44.8%) males and 1,739 (59.2%) females.

The median age of eligible patients was 63.6 years (IQR: 56.0 to 72.9 years).

For the 19 eligible centres, the median number of eyes per centre was 169 (range: 32 to 569 eyes), Figure 1.

**Figure 1:** The number of eyes per centre




## Adherence

In period 1, 316 (8.6%) eyes had a PDR diagnosis and by period 4, 376 (13.2%) eyes had a PDR diagnosis, Table 1.

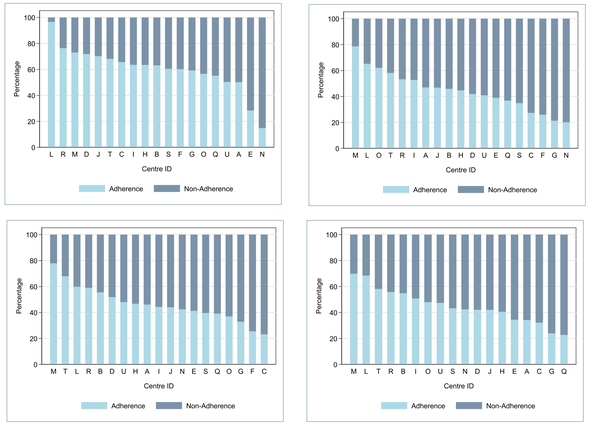
**Table 1:** Proportion of eyes with PDR and those adhering to RCOphth Guidelines

| N (column %) | Time Period | | | |
|---|---|---|---|---|
| | Period 1 | Period 2 | Period 3 | Period 4 |
| **N Eligible** | 3,664 | 3,521 | 3,293 | 2,839 |
| **Lost By Time Period** | 0 (0.0) | 143 (3.9) | 371 (10.1) | 825 (22.5) |
| **PDR** | | | | |
| **Yes** | 316 (8.6) | 338 (9.6) | 363 (11.0) | 376 (13.2) |
| **No** | 3,348 (91.4) | 3,183 (90.4) | 2,930 (89.0) | 2,463 (86.8) |
| **Adherence** | | | | |
| **Yes** | 2,348 (64.1) | 1,754 (49.8) | 1,751 (53.2) | 1,500 (52.8) |
| **No** | 1,316 (35.9) | 1,767 (50.2) | 1,542 (46.8) | 1,339 (47.2) |

The proportion of eyes adhering to the guidance across centres, Figure 2:

- In period 1 was 64.1% (range: 15.6% to 95.7%)
- In period 2 was 49.8% (range: 22.6% to 78.1%)
- In period 3 was 53.2% (range: 25.1% to 78.6%)
- In period 4 was 52.8% (range: 24.0% to 69.3%)

**Figure 2:** Proportion of eyes adhering to RCOphth COVID-19 Guidelines for each centre period 1 to 4 (left to right)




## Injections

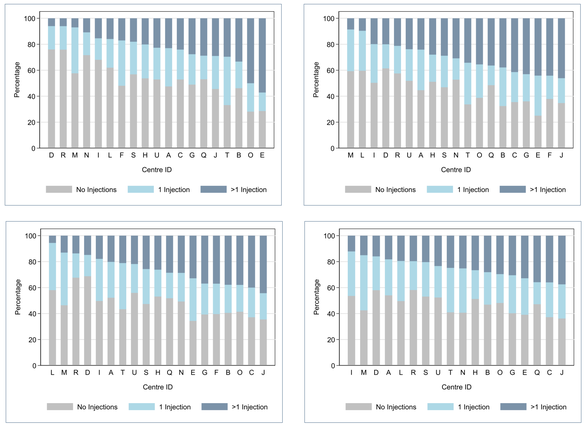
For periods 1, 2, 3 and 4 respectively, the proportion of eyes receiving, Figure 3:

- zero injections was 54.8 %, 47.6%, 50.0% and 48.6%
- receiving one injection was 25.5%, 24.5%, 25.6% and 27.5%
- receiving >1 injection was 19.7%, 27.9%, 24.4% and 23.9%

From those receiving >1 injection, the proportion of eyes with an exception

- In period 1 was 8.6%
- In period 2 was 9.6%
- In period 3 was 11.0%
- In period 4 was 13.2%

**Figure 3:** The number of injections eyes received in each centre during period 1 to 4 following RCOphth Guidelines (left to right)




## Visual Acuity

For adherence, the mean change in VA between:

- Pre-guidelines to period 1 was 2.2 ETDRS letter loss (N=903)
- Period 1 to 2 a zero ETDRS letter change (N=679)
- Period 2 to 3 a 0.6 ETDRS letter loss (N=1,006)
- Period 3 to 4 a 0.2 ETDRS letter loss (N=1,031)

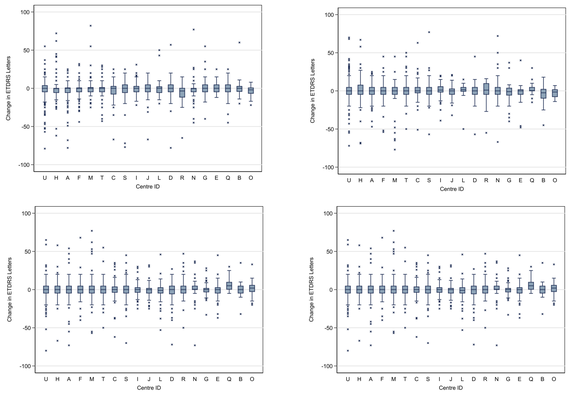
For non-adherence, the mean change in VA between:

- Pre-guidelines to period 1 was a 1.6 letter loss (N=1,020)
- Period 1 to 2 was a 0.8 letter gain (N=1,174)
- Period 2 to 3 was a zero letter change (N=1,389)
- Period 3 to 4 was a 0.4 letter loss (N=1,212)

Although, there was some variation in the mean change in VA, across centres, the variation was reasonably small in all cases, with the largest change in VA for centre Q between period 2 and 3, Figure 4.

The majority of centres had a median change of VA at zero letters.

**Figure 4:** The change in ETDRS letters for each centre during period 1 to 4 (left to right)




## Conclusions:

Adherence to the RCOphth COVID-19 guidelines for DMO varied between centres. In each period ≈50% of eyes received no injection.

Overall, there was little change in VA across time periods.

The number of eyes with a diagnosis of PDR, and exempt from RCOphth guidelines, increased across time periods.

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