Improving timeliness of angiography and anti-VEGF injection administration in patients with wet active AMD

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Introduction

Wet active AMD is characterised by choroidal neovascularization (CNV) where new blood vessels grow under or through the retinal pigment epithelium via breaks in Bruch's membrane.
Optical Coherence Tomography (OCT) is the first diagnostic step and fundus fluorescein angiography (FFA) is offered to people with suspected wet active AMD to **confirm the diagnosis**. FFA is also a useful tool that aids the accurate diagnosis of indeterminate cases. In some cases, OCT can be employed as the sole investigation to detect wet AMD.

Wet AMD can deteriorate rapidly. Any delays in starting treatment may lead to a worsening of outcomes over the long term. Minimising delays in starting treatment increases the chances of preserving vision and quality of life. The time from suspicion of wet AMD to treatment should be no longer than 2 weeks. Licensed anti-VEGF injections for wet AMD include aflibercept (Eylea), ranibizumab (Lucentis), brolucizumab (Beovu) and faricimab (Vabysmo).

PDSA Cycle 1

PLAN	DO
To assess any delays relating to angiography in the diagnosis and delivery of treatment for patients with wet active AMD	All patients that attended NEW wet AMD clinic from 6th June - 14th August 2022 were identified using Revenue Cycle Only patients with a diagnosis of wet AMD were included Time (in days) was recorded for each patient from date of clinic assessment to 1) FFA being carried out 2) FFA being read 3) Decision to book injections 4) Injections received
ACT	**STUDY**
Formal Protocol was implemented - All AMD clinical staff must book angiograms on the same day for wet AMD, if no capacity then to be done within 1-3 days, maximum of 5 days - AMD officer to book angiograms for those not done of the same day - Angiograms must be read and reported on the same day that it is carried out - AMD coordinator to check the spreadsheet of patient who have had angiograms on a daily basis to ensure that they have been read and acted upon within 24 hours of the angiogram being done	153 patients were seen in NEW AMD clinic 37 diagnosed with wet active AMD 16 BREACHED RECOMMENDATIONS 4 patient did not have their angiogram on the same day 6 patients experienced a delay in in the decision to book for injections due to angiograms not being read on the same day 16 patients received injections after the 2-week recommended limit Out of the 16 that had delays in receiving injections: 12 had a drop in VA at date of 1st injection

PDSA Cycle 2

Protocol implemented on 15th August

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140 patients seen in new AMD clinic between 15th August- 4th October 2022

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44 diagnosed with wet active AMD

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12 BREACHED PROTOCOL
5 patients did not have their angiogram on the same day
2 patients experienced a delay in in the decision to book for injections due to angiograms not being read on the same day
12 patients received injections after the 2-week recommended limit
Out of the 12 that had delays in receiving injections: 4 had a drop in VA at date of 1st injection

Conclusions

1) There were fewer breaches after the protocol was implemented
2) FFA results were being reviewed and acted upon faster after the protocol was implemented
3) The most common reason for delay of injections was lack of capacity before both before and after protocol implementation

Recommendations

- Address capacity issues by running extra injection clinics on the weekend
- Implement treat and extend protocols to help increase capacity for injections
- Increase use of OCT-A with associated teaching for workforce
- Ensure AMD practitioners are aware that intravenous angiography needs only be used in cases where there is doubt over the diagnosis

Sustainability

OCT angiography (OCT-A) is a newer technology that creates images of the retinal circulation. It may be useful on the earlier diagnosis of CNV, even before such lesions can be detected by conventional OCT or fluorescein angiography imaging.
OCT-A is being introduced in the Oxford Eye Hospital with an associated wet AMD protocol.
Re-audit will be required to assess for delays In treatment after the introduction of OCT-A.