Results of a treat-and-extend strategy treating neovascular age-related macular degeneration.

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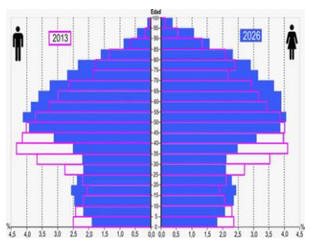
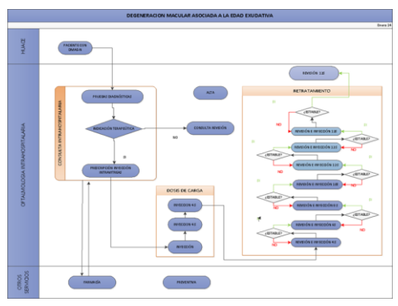
Introduction

Age-related macular degeneration is a leading cause of irreversible vision loss among elderly patients in developed nations and accounts for **7% of global blindness worldwide**. The prevalence is rising as the population ages. Late disease is characterized by significant loss of central vision gradually. Over the past decade, intravitreal antivascular endothelial grow factor therapy (Anti-VEGF) has become established as the standard of care for the treatment of neovascular age related macular degeneration (n-AMD). This was supported by evidence from randomized clinical trials as well as routine clinical practice, demonstrating efficacy in preventing loss and improving vision. As well, the incidence of blindness and visual impairment from AMD declines.However, n-AMD is a chronic lifelong condition requiring ongoing treatment with regular follow up and monitoring to control exudative disease activity. Therefore these treatments became the most frequent procedure at our Unit .There are **significant challenges** in diagnosis, treatment, and management that pose barriers to achieving optimal outcomes for patients with n-AMD:

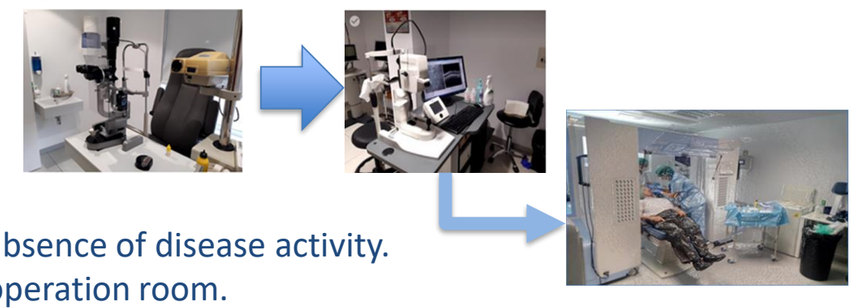


- The n-AMD prevalence increases with the age and the age of the population will increase next years
- Challenges leading to suboptimal long-term outcomes, such as delays in diagnosis and/or treatment approval and initiation, individual patient response to different anti-VEGF therapies, lapses in physician regimentation of anti-VEGF injection and monitoring, and inadequate patient adherence to treatment and monitoring.
- Number of anti-VEGF injections: better visual outcomes were identified among patients in the highest quartile for the number of anti-VEGF injections and this requires a high number of visits.

To reduce the burden of monthly injections, to maintain the effectivity minimizing exudative disease activity, and to improve or maintain visual acuity (VA) over long periods of time, we implemented in 2014 several changes in our department:



- ✓ **One stop** treatment delivery pattern was established, where both assessment and intravitreal treatment occurred on the same day.
- ✓ A **treat and extend dosing regimen** can help reduce treatment burden by extending injection intervals when possible and achieves visual outcomes superior to as needed treatment regimens. After a loading phase, the interval between injections is progressively shortened or lengthened depending on the presence or absence of disease activity.
- ✓ We dedicated **a clean room** to perform the intravitreal injections, instead the operation room.

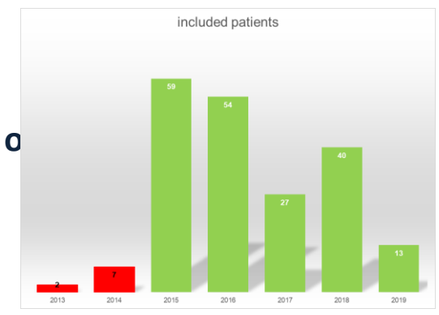


The purpose of this study is to evaluate the **real life outcomes** of the Treat and Extend strategy treating neovascular-AMD at our intravitreal treatment unit.

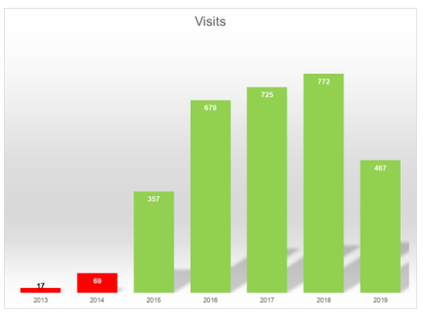
Methods

This was a retrospective chart review, for which an Institutional Review Board was obtained. A computer search was done for intravitreal injections of bevacizumab, ranibizumab or aflibercept performed between 2013 and December 2019 for the treatment of naïve wet AMD with a T&E strategy at our Department. The following data was recorded following the ICHOM´s macular degeneration standard set:age and sex, visit date, Snellen visual acuity, intraocular pressure, ocular conditions, previous treatments, angiographic lesion criteria, geographic atrophy, Subretinal fibrosis, Lesion activity, Intravitreal drugs and adverse events using frbresearch.org web.

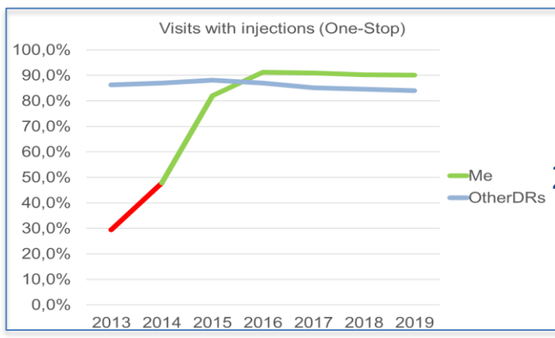
Results



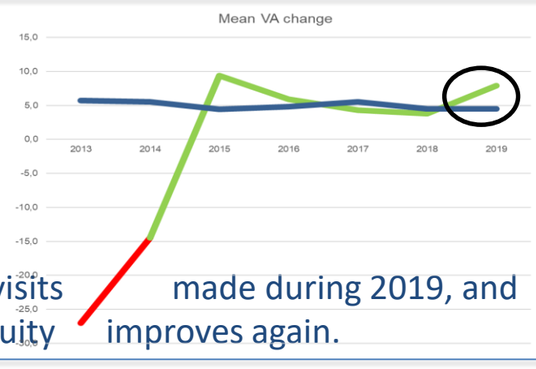
Number of **included patients per year** until dic 2019.



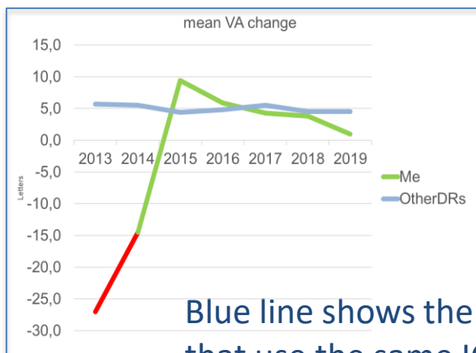
Number of **visits included per year.**



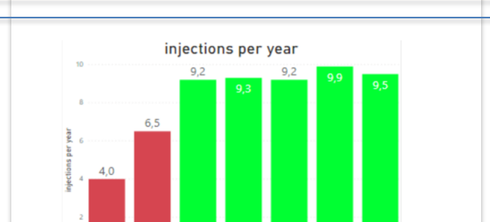
Number of visits with injection (**one stop service**) is a good parameter to know if the management change was performed. The improvement of the number of visits with injection began in 2014 until 2016. During next years this **result keep stable 90%.** We can compare our results with the results of other doctors that work with the same ICHOM based data collection program.



In 2020 we have included more visits made during 2019, and consequently the mean visual acuity improves again.



The **visual acuity mean change began with the implemented management change** and descends slightly during next years. last decrease of the improvement is related, to the decrease in the number of included patients.
Blue line shows the results of the other doctors that use the same ICHOM based data collection program.



The mean number of injections per patient and per year improves from **improves from 4 to 9** after the implemented management change.

Conclusions

Therefore, The ICHOM measures in neovascular-AMD at our unit reported that **the T&E strategy is a good method** to treat this disease, because reduces the burden of monthly injections (and this is of interest for patients, theirs carriers and for our unit), maintains the effectivity, minimizing exudative disease activity, and improves, or at least, maintains visual acuity over long periods of time (Being the visual acuity improvement related with the number of injections following previous reports).

The **disease´s management change implemented in our Unit improved the aforementioned three parameters**. The **ICHOM measures allowed a comparison** between our results and all the results from the doctors that participated in this study, allowing changes to improve our outcomes.

We need to **integrate in our electronic medical record and in our daily practice** the ICHOM´s data set and the patient reported outcome measurement. Previously , we need to translate and validate the Brief Impact of Visual Impairment Questionnaire. This will **reduce administration burden and will allow posterior analysis to measure our outcomes.**