Real world outcome of 16–weekly interval intravitreal anti-VEGF injections for neovascular age-related macular degeneration

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INTRODUCTION

Within medical retina, there is an increased trend towards using treat and extend regimes for treating neovascular AMD, with injection intervals being extended up to 16 weeks.

However, there is little real-world data on long-term visual outcomes of following a 16 weekly pathway, which may help guide decision making and informed consent processes.

METHODS

All patients commenced on a 16 weekly injection pathway with ranibizumab or aflibercept for neovascular AMD between August 2017 and August 2020 were identified from 'Medisoft' records.

LogMAR visual acuity and central retinal thickness (CRT) were noted at baseline, week 16, 32 and 48.

Statistical analysis was undertaken using SPSS software, with correlational analysis performed to identify factors that had significant correlation to disease relapse, then Analysis of variance (ANOVA) test was performed to quantify any significant correlations. A p value of 0.05 or less was considered significant.

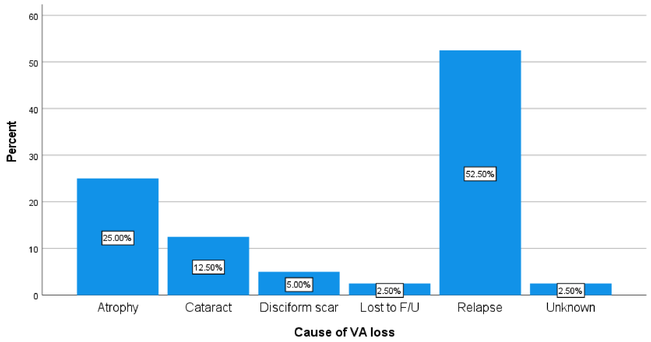
BASELINE CHARACTERISTICS

98 patients started a 16 week injection pathway in this period, of which, 87 completed over 12 months of follow up.

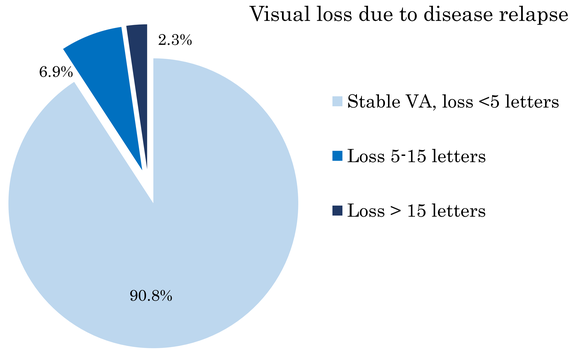
The mean (SD) visual acuity was 62.8 (14.9) letters at baseline (when starting q16) and 58.9 (18.4) letters at 48 weeks. The mean number of injections prior to starting q16 was 19 (range 8-49), and the mean number of months before starting was 44 (range 10-136). Average patient age was 84.1 years (SD 7.9) and 67.8% were female.

RESULTS

At 12 months, 73.5% of patients successfully remained on the q16 pathway. Overall, visual outcomes showed 10.3% of patients lost over 15 letters, 39.1% lost 5-15 letters and 50.6% had stable vision. The reasons for vision loss were multi-factorial:



Specifically, the proportion of patients who experienced disease relapse was 24.1% (defined as the appearance of new retinal haemorrhages, new subretinal fluid or worsening of existing intra-retinal fluid). The pie chart below shows the overall loss of vision in our cohort due to disease relapse:



Correlational analysis showed relapse at 12 months was significantly related to a higher number of injections received prior to starting the q16 pathway ($p = 0.01$); And ANOVA test showed that the mean number of injections prior to switching to the 16-weekly pathway was 23.57 injections in those who relapsed compared to 17.67 injections in those who did not relapse ($p = 0.01$), suggesting that patients with more active disease in the period prior to starting the 16-weekly pathway may be more likely to relapse with extended intervals. Relapse was not significantly related to sex ($p = 0.89$), drug used ($p = 0.55$), baseline vision ($p = 0.50$), baseline CRT ($p = 0.68$) or duration of treatment before starting q16 ($p = 0.06$).

CONCLUSIONS

This real-world data shows that a significant proportion of patients with neovascular AMD can be successfully treated and maintained with 16 weekly anti-VEGF therapy. This can help create capacity and facilitate more timely treatment for a larger number of AMD patients, as well as conferring benefits to individual patients in terms of reducing endophthalmitis, injected related complications and the burden of frequent lifelong hospital visits.

However, our results highlight that a proportion of patients may experience disease relapse and significant vision loss with an extended 16 week treatment interval. This can guide informed consent discussions when planning individualised treatment strategies and factors such as patient's starting visual acuity, age, co-morbidities, ease of accessing the clinic, as well as the status of their other eye and preferences, may guide decision making.

The study limitations here include small sample size and retrospective analysis, and therefore these findings require further research and greater patient numbers to validate.