RESULTS OF THE RETINASCREEN TWO-YEAR SCREENING INTERVAL INITIATIVE

NEC Care

AUTHORS

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INTRODUCTION

Diabetes mellitus affects approximately 5.2 % of the population of Ireland[1]. The Irish National Diabetic Retinopathy Screening Programme, RetinaScreen, was launched in 2013 as a free service for all diabetic patients over the age of 12 years[2]. RetinaScreen is run by two providers, this study only looks at data from the NEC Care database.

Originally, patients with no retinopathy or background retinopathy were put in a yearly interval for screening. In July 2020, a two-year interval screening pathway (2YIS) was added for patients who were deemed safe to be moved. They included those with a worst final grade of R0M0 and no Non-Diabetic Eye Disease (NDED) for two consecutive years within the Routine Digital Screening (RDS) pathway.

According to international evidence, extended interval screening is safe if managed within best practice guidelines[3].
This study was undertaken to evaluate the safety and outcomes of extending the screening interval from one to two years.

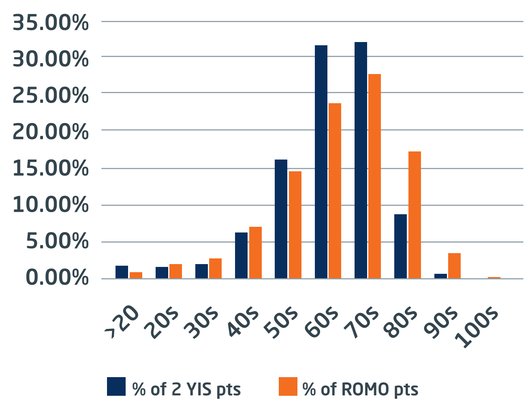
METHODOLOGY

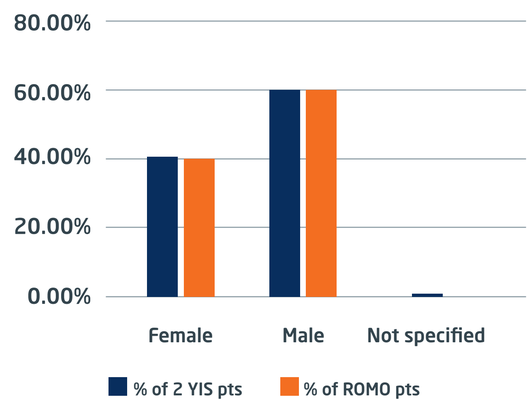
Patients who met the criteria for two-year interval screening (two consecutive R0M0 grades within 11-13 months) after its inception in 2020 were compared against comparable patients who had two consecutive R0M0 grades but were outside of the two-year time interval criteria.

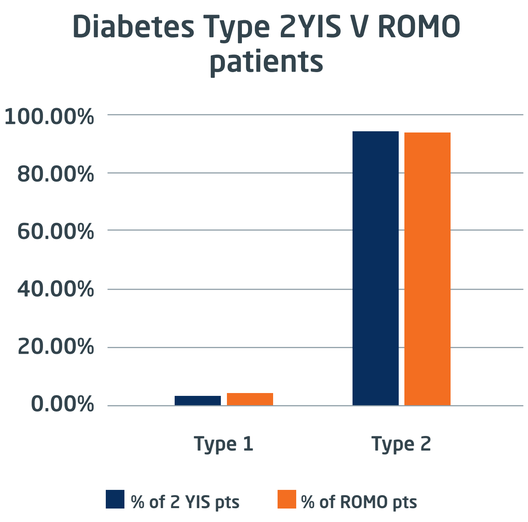
The data was extracted from the OptoMize programme that is used when processing patients. Factors considered include age, gender, diabetes type, diabetes duration, treatment type and time between appointments. The study compared the change in grade, visual acuity and outcome between the two groups to evaluate the safety of the increased screening interval. Patients who graded as un-assessable, were deemed unfit, de-consented, were deceased or moved out of area were excluded.

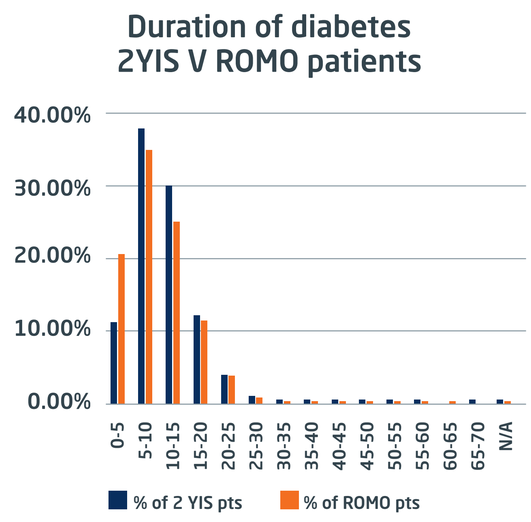
RESULTS

We identified 12,730 patients who had been moved into the two-year interval pathway and 14,042 patients who had two consecutive R0M0 grades but were outside of the two-year time interval criteria Both cohorts are very similar demographically. The average age of the patients was 65.3 and 67.4. The 2YIS group had more people in their 60s and 70s and the R0M0 cohort had more in their 80s. Both cohorts were 59-60% male. Diabetes type and duration were similar in both cohorts, with 92-93% being type 2 and the average duration being 10 years. In both cohorts, 70% used tablets to treat their diabetes. See Figure 1 for details.









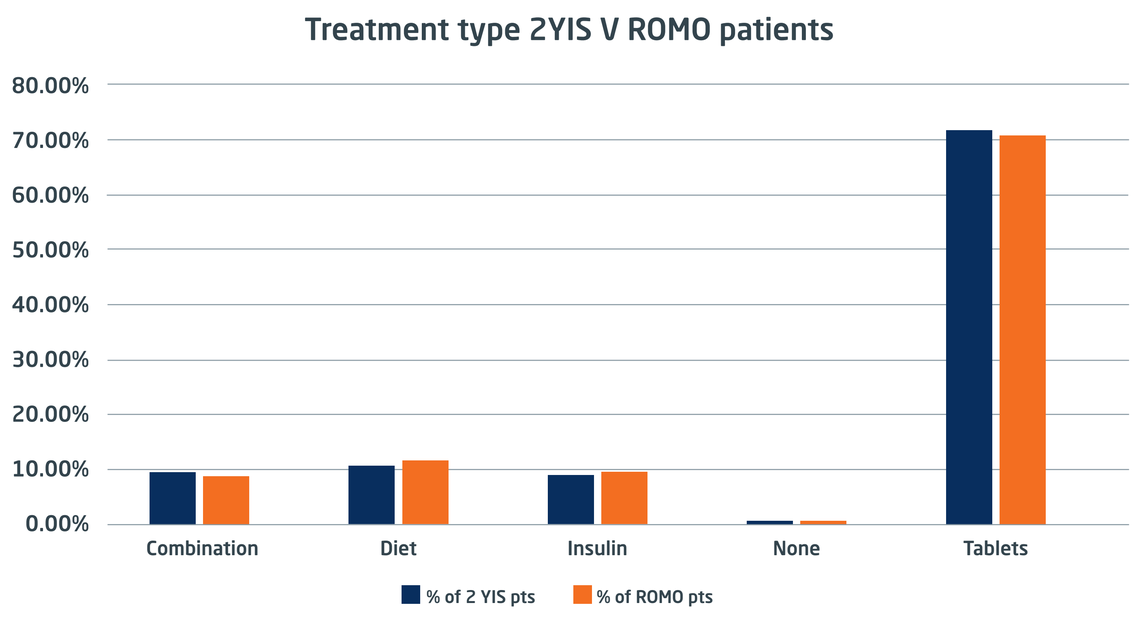


Figure 1: Demographics of the two cohorts, showing similar characteristics

VISUAL ACUITY

Visual acuity changes are similar between the two cohorts. However, the 2YIS cohort shows slightly more clinically significant deterioration in visual acuity (24%) than the R0M0 cohort (21.5%). Figure 2 below shows the changes in visual acuity.

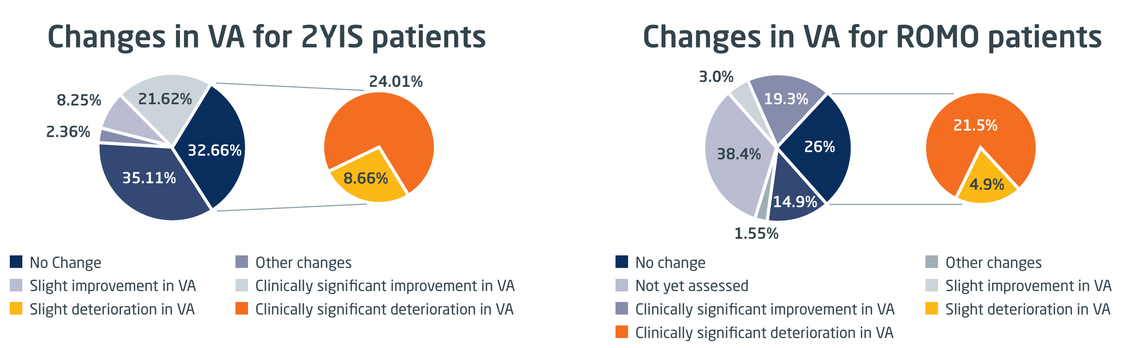


Figure 2: Changes in Visual Acuity for the two cohorts

Looking at patients' progression, we see a slight increase in non-sight threatening diabetic retinopathy in the two-year interval group, with 18.55% progressing from R0 to R1, R2, R3, and a similarly expected increase in maculopathy with 2.95% progressing from M0 to M1. The R0M0 group progression in non-sight threatening retinopathy was 13.15%, with 1.42% progression in maculopathy. Looking at sight-threatening retinopathy, we see a very similar minimal risk of progression for both cohorts with 0.27% of the two-year interval group progressing and 0.18% in the R0M0 group. As can be seen in Figure 3.

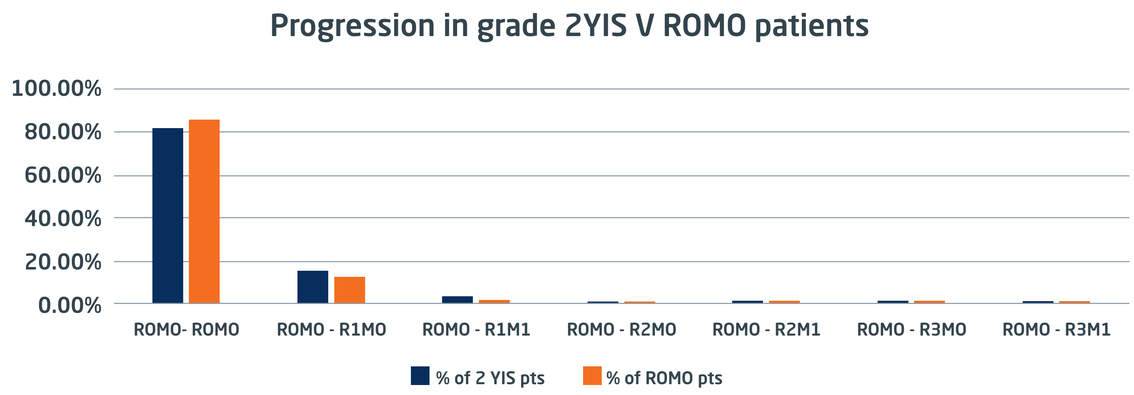


Figure 3: Progression in retinopathy and maculopathy for the 2YIS cohort and the R0M0 cohort.

OUTCOMES

Looking into the outcomes for both cohorts, we see that the majority of the 2YIS cohort stay in 2YIS (no progression in pathology), with 81% remaining in 2YIS and 16% going to annual recall. Similarly, in the R0M0 cohort we see that 80.6% remain in annual recall and 18% go into 2YIS. Only a very small proportion of patients in either cohort are sent as a routine referral to ophthalmology: 2.91% of 2YIS and 1.42% of the R0M0 cohort. And only 0.27% of 2YIS are referred urgently, with 0.18% of R0M0 cohort. This can be seen in Figure 4.

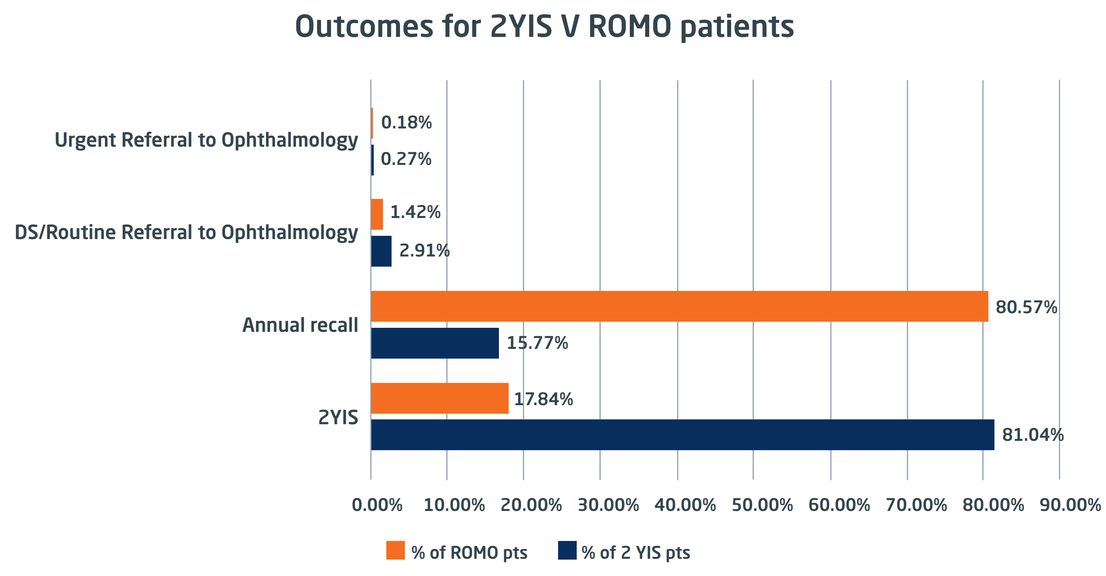


Figure 4: Outcomes for 2YIS patients and R0M0 patients

DISCUSSION

This study compared the safety and outcomes of patients being seen annually to those being seen in a two-year extended interval screening pathway.

It found that the two cohorts were similar demographically. Looking at the visual acuity of the two groups it found that both showed similar changes, with clinically significant deterioration of 24% for the two-year extended interval screening cohort and 21.5% for the R0M0 cohort.

It also found that moving patients to the two-year interval pathway way is safe. We see a slight, expected increase in non-sight threatening diabetic retinopathy in the two-year interval group. There was no significant difference in progression to higher grades of retinopathy.

CONCLUSION

The result of this study is in line with international studies showing that the Irish diabetic programme can safely run an extended interval screening pathway with no increased risk to patients.

References

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3. Pandey R. et al. (2022) Irish National Diabetic RetinScreen Programme: report on five rounds of retinopathy screening and screen-positive referrals(INDEAR study report no.1). British Journal of Ophthalmology, Vol. 106, issue 3, pg. 409.