

Five-year outcomes of a Diabetic Eye Screening Programme in patients aged 80 and older with no diabetic eye disease at baseline: should we be routinely screening this cohort?

Arianna Paris¹, Laura Webster²

1. Department of Ophthalmology, Guy's and St Thomas' NHS Foundation Trust, London, UK
2. South East London Diabetic Eye Screening Programme, Guy's and St Thomas' NHS Foundation Trust, London, UK



Background

- The Diabetic Eye Screening Programme is the only UK national programme with no upper age limit.
- Retinopathy risk rises with diabetes duration but peaks in working-age adults and stabilises in older groups¹.
- Studies report low prevalence of sight-threatening retinopathy in the elderly²⁻⁵.
- With high comorbidity burden, the value of continued screening in this group needs evaluation.
- **This study assessed incidence of referable retinopathy/maculopathy and treatment rates in patients ≥80 with no signs of diabetic retinopathy at baseline.**

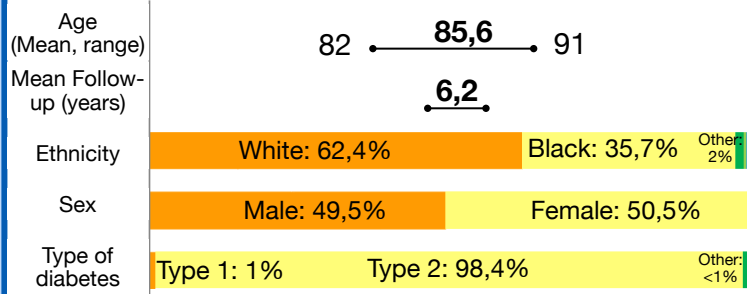
Methods

- **Study Design:** Retrospective audit of patients aged ≥80 (2009–2014) who underwent diabetic eye screening with 5-year follow-up.
- **Data** were extracted from OptoMize and included: age, gender, ethnicity, diabetes duration, worst retinal grade, Hospital Eye Service (HES) referrals; treatments administered were obtained from individual hospital electronic patient records.
- **Outcomes:** Proportion of R0M0 patients developing referable disease, and number treated.

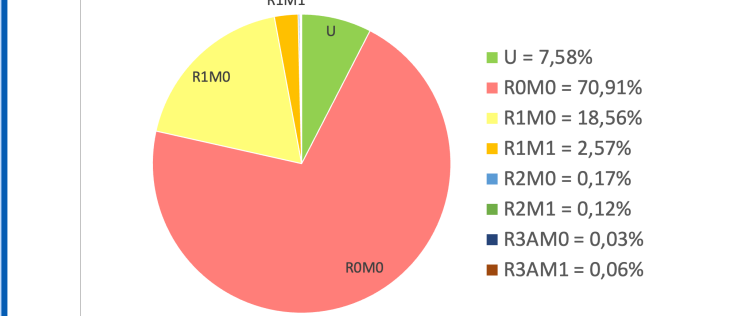
Results

Total number of patients aged ≥80 at baseline (2009-2014): **5527**
↓
Patients with 5 years follow-up: **2784**
↓
R0M0 at baseline: **1740**

1. Demographic and baseline characteristics of R0M0 cohort



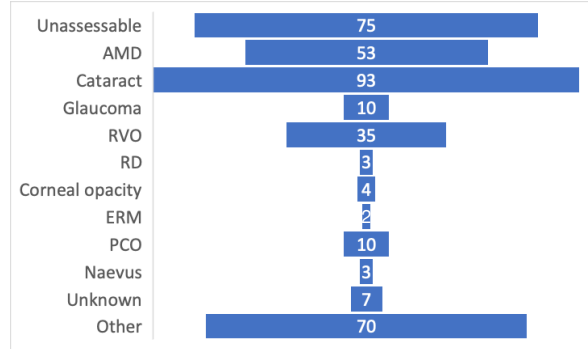
2. Worst retinal grade at last follow-up of R0M0 cohort



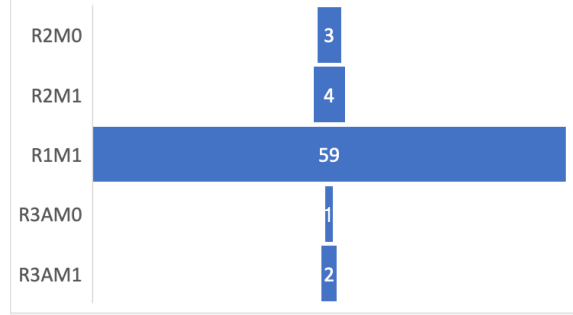
3. Referrals to Hospital Eye Service

Total number of patients referred to HES: **359 (20,6%)**

Referrals for non-DR: **290 (16.6%)**



Referrals for DR: **69 (3.97%)**



4. Outcome of Hospital Eye Service referrals for DR

R2M0 (n=3) and R2M1 (n=4): Only monitored, no treatment required
R1M1 (n=59): 2 Treated with anti-VEGF, 2 Treated with focal laser
R3AM0 (n=1): 1 Treated with PRP fill-in (previously R3S)
R3AM1 (n=2): 1 Downgraded to R1M0, 1 Downgraded to R0M0 with CRVO

Total number of patients treated for DR



Discussion & Conclusions

- Patients >80 needing screening are increasing, but sight-threatening DR prevalence is low (**3.97%**), and only a small proportion go on to receive treatment (**0.28 %**).
- Comorbidities limit attendance and treatment feasibility.
- 16,6% of patients were referred to HES for non-DR eye disease, highlighting the importance of regular check-ups with an optician.
- Findings support a review of current screening guidelines. An opt-in model for patients over 80 with R0M0 at baseline could strengthen the already limited resources for those most in need, release capacity to prioritize higher-risk individuals, and enhance optician-led screening for other ocular conditions.

References

1. Klein R, Knudsen MD, Lee KE, Gangnon R, Klein BE. The Wisconsin Epidemiologic Study of Diabetic Retinopathy: XXII the twenty-five-year progression of retinopathy in persons with type 1 diabetes. Ophthalmology. 2008 Nov;115(11):1859-68.
2. Heli Hivela, Leila Laatikainen. Diabetic retinopathy in people aged 70 years or older. The Oulu Eye Study British Journal of Ophthalmology 1997;81:214-217.
3. Tye A, Wharton H, Wright A, Yang Y, Gibson J, Syed A, Mills A, Dodson P. Evaluating digital diabetic retinopathy screening in people aged 90 years and over. Eye (Lond). 2015 Nov;29(11):1442-5.
4. Thomas K, Albutt N, Hamid A, Wharton H, Jacob S. Five-year outcomes of digital diabetic eye screening in individuals aged 80 and 85 years. Eye (Lond). 2023 Dec;37(17):3661-3665.
5. Brodie J, Misra A, Jones CD, Jenkins C, Bachmann MO. Is diabetic retinopathy screening worthwhile among people first diagnosed with diabetes at older ages? A cohort study of Norfolk diabetic retinopathy screening programme. Diabet Med. 2024 Feb;41(2):e15164.