**EASdec 2021 Conference abstract accepted 8th June 2021**

|  |  |
| --- | --- |
| **Authors & Co-authors** | Dewi Romdhoniyyah; 1 C.P. Cheyne; 2 A. Alshukri; 3 D.G. Parry; 4 M.G. Finana; 5 S.P. Harding; 6 N.A.V. Beare 6  |
| **Abstract Title** | Five-Year Incidence and Progression of Age-related Macular Degeneration in People with Diabetes. |
| **institutionsList** | 1) Department of Eye and Vision Science, Institute of Life Course and Medical Sciences, University of Liverpool, Member of Liverpool Health Partners, Liverpool, UK. 2) St. Pauls Eye Unit, Liverpool University Hospitals NHS Foundation Trust, Member of Liverpool Health Partners, Liverpool, UK. 3) Liverpool Ophthalmic Reading Centre, University of Liverpool and Liverpool University Hospitals NHS Foundation Trust, Liverpool, UK. 4) Department of Health Data Science, Institute of Population Health, University of Liverpool, Member of Liverpool Health Partners, Liverpool, UK. |
| **Introduction** | Retrospective study of routinely collected fundus photographs. |
| **Purpose** | Age-related macular degeneration (AMD) and diabetic retinopathy (DR) increasingly occur simultaneously as the prevalence of diabetes rises in people over 50. Evidence on any pathophysiological relationship is conflicting. We investigated the association between AMD and DR by study the 5-year incidence and progression of AMD in people with diabetes (PWD) attending a DR screening program. |
| **Methods** | 1,500 people aged ≥50 years were randomly selected from 10,336 PWD who attended the Liverpool Diabetic Eye Screening Programme in 2011. Retinal images and clinical information (estimated diabetes duration, HbA1c, lipids, smoking status) were retrieved at baseline and in year 5. AMD grading followed the modified Age-Related Eye Disease Study system; non-central geographic atrophy was assigned to level 4 (late AMD). DR was graded within routine screening by trained accredited graders following national standards. Multiple logistic regression with multiple imputation adjusting for possible confounding factors was used for data analysis; variables were discounted if missing values were ≥20%. |
| **Results** | 1,492 of the 1,500 PWD had gradeable retinal photographs at baseline. 258/1,492 had ungradeable/unavailable images of both eyes in year 5 leaving 1,234 sets of photographs for analysis. The incidences of early, intermediate, late and any AMD were 12.1%, 11.5%, 2.2%, and 15.6%. Progression from early/intermediate to late AMD occurred in 11.4%. Progression of any AMD (increase in ≥1 AMD stages) occurred in 30.3%.In multiple logistic regression analysis, increasing age was associated with increased risk of incidence of intermediate (OR 1.05; 95%CI 1.02–1.07, p<0.001), late (1.16; 1.08–1.25, p<0.001), and any AMD (1.03; 1.01–1.05, p=0.003), as expected. Likewise, increasing age was related to late (1.13; 1.03–1.24, p=0.01) and any AMD progression (1.04; 1.02–1.05, p<0.001). No significant association was identified between the presence or severity of DR, diabetes duration, glycaemic/lipid control or smoking status at baseline with AMD incidence or progression (all p≥0.05). |
| **Conclusions** | We did not find any evidence that DR is protective, or is a risk factor for AMD incidence or progression over a 5 year timeframe. This suggests the mechanisms of these prevalent retinal diseases may not shared. |