Multicentre study of age and gender variations in presentations of posterior vitreous detachments, retinal tears, and retinal detachments to eye casualty

Ian De Silva[1], Mervyn G Thomas[1,2], Amy-lee Shirodkar[3], BEECS Study Group**, John Buchan[12,13], Seema Verma[14]

**BEECS Study Group: Ian De Silva[1]*, Mervyn G Thomas[1,2], Amy-lee Shirodkar[3], Helen J Kuht[1,2], Jae Yee Ku[4,5], Ritu Chaturvedi[4], Sarah Anderson[6], Radhika Patel[7], Freddy Beer[8], Romeela Rana-Rahman[9], Polly Dickerson[10], Francine Walsh[11], Ben While[7], Lucy Clarke[9], Dilani Siriwardena[3], Felipe Dhawahir-Scala[4], John Buchan[12,13], Seema Verma[14], Alka Gupta[6], Tooba Sohail[6], Aayesha Malik[13], Giulio Volpe[3], Gabriela Grimaldi[3], Ibrahim Sheriff[3], Kiran Ahmed[15], Mohammud Musleh[15], Nikita Nighoskar[10], Ketan Limbachia[14], Priya Bhatt[11], Adam Bull[11], Emma Linton[11], Jonathan Ng[11]



1. Department of Ophthalmology, University Hospitals of Leicester, Leicester Royal Infirmary, Leicester LE1 5WW, United Kingdom
2. The University of Leicester Ulverscroft Eye Unit, Department of Neuroscience, Psychology and Behaviour, University of Leicester, PO Box 65, LE2 7LX, UK
3. Moorfields Eye Hospital NHS Foundation Trust, 162 City Road, London, EC1V 2PD, United Kingdom
4. Manchester Royal Eye Hospital, Oxford Road, Manchester M13 9WL, United Kingdom
5. Department of Eye and Vision Science, Institute of Life Course and Medical Sciences, University of Liverpool, Liverpool L7 8TX, United Kingdom
6. Department of Ophthalmology, York Teaching Hospitals NHS Foundation Trust, Wigginton Road, York, YO31 8HE, United Kingdom
7. The Victoria Eye Unit, The County Hospital, Union Walk, Hereford HR1 2ER, United Kingdom
8. Ophthalmology Department, Queen Alexandra Hospital, Southwick Hill Road, Portsmouth PO6 3LY, United Kingdom
9. Eye Department, Royal Victoria Infirmary, Queen Victoria Road, Newcastle upon Tyne NE1 4LP, United Kingdom
10. Department of Ophthalmology, Scarborough Hospital, Woodlands Drive, Scarborough YO12 6QL
11. Ophthalmology Department, Royal Bolton Hospital, Minerva Road, Bolton BL4 0JR, United Kingdom
12. International Centre for Eye Health, Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom.
13. The Leeds Centre for Ophthalmology, St. James's University Hospital, Beckett Street, Leeds LS9 7TF, United Kingdom
14. Eye Department, St Thomas' Hospital, Westminster Bridge Road, London SE1 7EH, United Kingdom
15. Ophthalmology Department, Bradford Royal Infirmary, Duckworth Lane, Bradford BD9 6RJ, United Kingdom

Aim:

Vitreo-retinal presentations are relatively common in hospital emergency eye care services (HEECS), constituting approximately 10% of all patients seen. As part of the multicentre British Emergency Eye Care society study on emergency presentations in England, we report the relative presentations of posterior vitreous detachments (PVD), retinal tears (RT) and retinal detachments (RD) and variations of these based on age and gender.

Methodology:

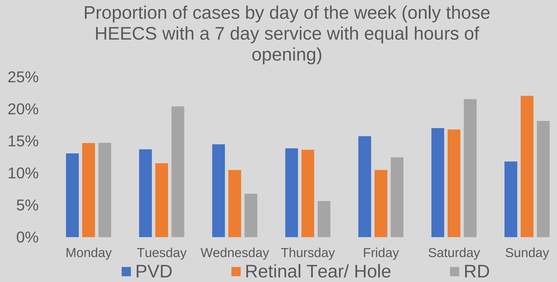
A retrospective, cross sectional, observational multicentre study was conducted across thirteen different HEECS in England across a 4 week period (06/01/2020 to 02/02/2020). We categorised all presentations of PVD, RT and RD into 5-year age groups. We calculated the comparative risk for each of the 5-year age groups relative to the mean risk of all ages after adjusting for population variations in each of these groups (from the data from the Office for National Statistics).

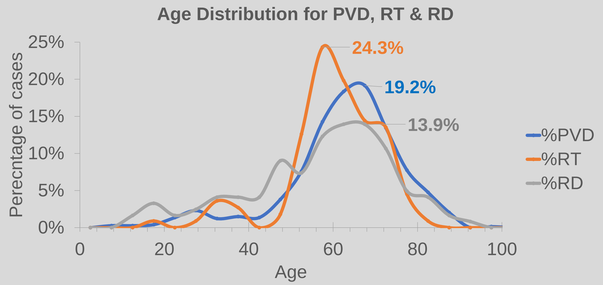
Criteria	PVD	Retinal Tear	RD
Male Total (n)	465	89	117
Female Total (n)	688	101	68
M:F ratio Total	0.68	0.88	1.72
M:F ratio <50 of age	0.80	0.81	1.15
M:F ratio ≥50 of age	0.60	0.87	1.74

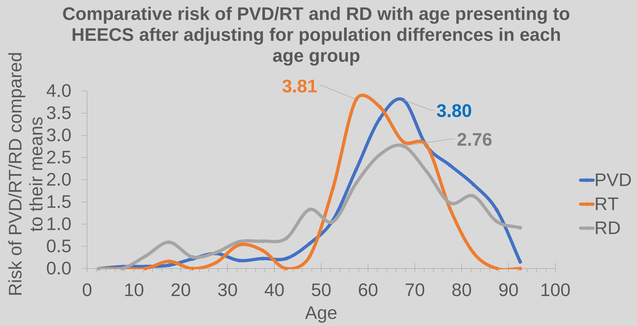
Results:

Of 17,667 attendances to HEECS, 1,528 presentations were found to either PVD (n=1153, 6.5%), RT (n=190, 1.1%) or RD (n=185, 1.0%). These represents an annual attendance of 22.9 per 10,000 population to HEECS.

The mean age and standard deviation for PVD, RT and RD were found to be 62.1 ± 13.7, 59.6 ± 11.2 and 56.4 ± 17.4, respectively. The age groups of highest risk of PVD, RT and RD were 65-70, 55-60 and 65-70 respectively.







Conclusions:

This report is from the largest multicentre study of HEECS in England. The study estimates PVD, RT and RD to account for 8.6% of HEECS presentations and 22.9 attendances per 10,000 population.

A significantly higher number of females present with PVD and RT. Conversely, significantly more males present with RD. 42% of RD cases in males may be preventable by improved health promotion and improving access to healthcare.

RD and RT cases more commonly present on a weekend in services that provide equal access irrespective of the day of the week.