Birmingham Midland Eye Centre

Mortality Following Glaucoma Surgery in Octogenarians with Primary Open Angle Glaucoma

RCOphth Annual Congress 2025

BMEH 200 years Established 182

Introduction

- In the United Kingdom, those aged 80 and over are the fastest growing segment of the population and estimated that this cohort will double over the next 40 year

Aim:

- This study aims to quantify the mortality rate following glaucoma surgery in octogenarian patients with primary open-angle glaucoma (POAG) and identify risk factors associated with mortality in this age group.

Methods:

- A retrospective single centre consecutive case series was conducted involving 115 patients aged 80 and over who underwent glaucoma surgery at the **Birmingham Midland Eye Centre** between **January 2015 and December 2019.**

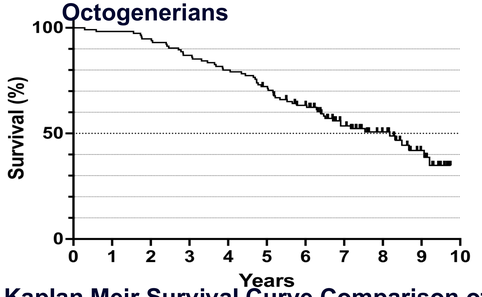
Results: Baseline Data

N, % of Row Total	Total (% of total)	Dead on Final Follow Up (N, % of row total)	Survived on Final Follow-Up (N, % of row total)	p-value
Overall Number (N)	115(100)	59(51.30)	56(48.27)	
Age				0.228*
80-84	74(65.21)	33(44.59)	41(55.41)	
85-89	33(28.70)	19(57.58)	14(42.42)	
≥90	8 (6.96)	7 (87.5)	1(12.5)	
Median (IQR)	83.20(5.22)	84.09(5.74)	82.65(4.36)	
Mean (SD)	84.17(3.40)	84.71(3.81)	83.60(2.82)	
Sex				0.896
Female	65(56.52)	33(55.93)	32(49.23)	
Male	50(43.48)	26(52)	24(48)	
Ethnicity n,%				0.330[x]
Afro-Carribean	25 (21.74)	9(36)	16(64)	
Asian	5 (4.35)	3(60)	2(40)	
Caucasian	77(66.96)	42(54.54)	35(45.45)	
Mixed/Other	8(6.96)	5(62.5)	3(37.5)	
Clinical Fragility Score				0.022*
Median (IQR)	5(3.75)	7(4)	4 (3)	
Mean(SD)	5.10(2.67)	6.38(2.40)	4.8(2.63)	

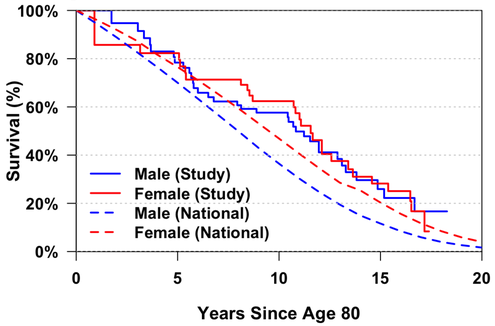
Results:

- The all-cause mortality incidence for patients over 80 undergoing glaucoma surgery is **66.86 deaths per 1000 person-years**
- The overall mean (SD) duration of survival following surgery was **6.11(2.31**) years, ranging from 0.29 to 9.74 years.
- The median survival was **8.18 years.**
- The **standardized mortality rate (SMR) was 0.77** (95% CI: 0.57–0.97; p < 0.05), indicating **a 23% lower mortality in the study cohort compared to the national population.**

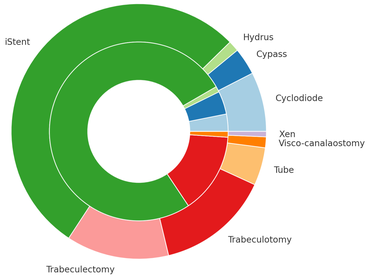
Kaplan Meir Survival Curve for Overall Study's Octogenerians



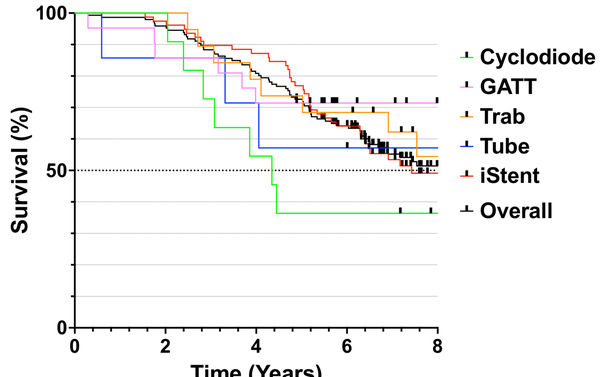
Kaplan Meir Survival Curve Comparison of Study and National Survival Curves



Glaucoma Surgery Breakdown



Kaplan Meir Survival Curve Stratified by Surgery Type



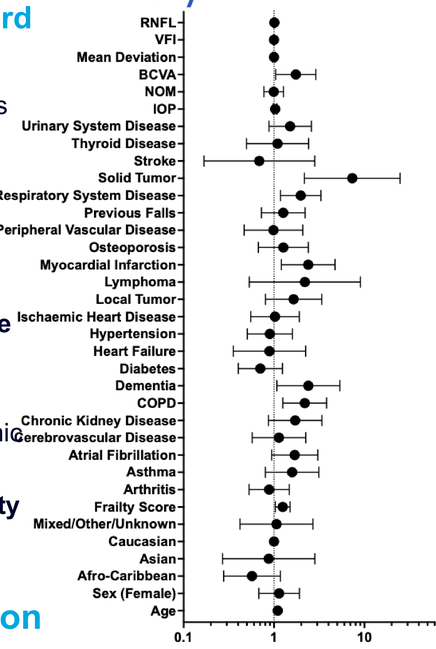
Cox Proportionate Hazard Ratios

Significant systemic risk factors include

- **myocardial infarction**(p=0.012),
- **COPD**(p=0.006),
- **dementia**(p=0.033),
- **respiratory system disease** (p=0.010),
- solid tumours (p=0.001)

Regarding significant ophthalmic parameters, only

- **best-corrected visual acuity (BCVA)** was significant (p=0.033),



Conclusion

- The **overall five-year survival** rate post-surgery was **72.01%**, with a **nine-year survival** rate of **43.30%.**
- **Clinical frailty scale** should be assessed for all elderly patients considered for glaucoma surgery.
- Assessing systemic health in elderly patients is crucial for optimizing surgical outcomes and improving survival

References