Endophthalmitis post-intravitreal treatment: 15 years experience at a large tertiary centre

Belfast Health and Social Care Trust

Freddie Bailey, Catherine Dardis, Muralidharan Upendran

Belfast Health and Social Care Trust, Belfast, Northern Ireland

Belfast Health and Social Care Trust

Introduction

- Endophthalmitis has an incidence of 1 in 500 post-cataract surgery, and 1 in 2000 post-intravitreal injection[1]
- Bacterial endophthalmitis post-intravitreal injection is commonly caused by commensals (coagulase-negative staphylococci (CoNS) and streptococci)[1]
- RCOphth have produced several standards in the prevention and treatment of endophthalmitis
- Fairview unit at Mater Infirmorum Hospital in Belfast is a tertiary centre unit that provides medical retina services to the vast majority of Northern Ireland

Objectives

1. To quantify the incidence of post-intravitreal injection (IVT) endophthalmitis at the Fairview Unit, Belfast, between 2008-2022
2. To describe the trends in these cases
3. To identify risk factors associated with these cases

Standard

1. Post-intravitreal endophthalmitis incidence: **0.562/1,000 injections or 1 in 2,000 injections** (meta-analysis)[1]
2. Povidone iodine 5% or chlorhexidine 0.1% TOP should be applied to **all patients** pre-IVT[2]

Methodology

Data source:
- Medisoft

Time frame:
- 01/012008 - 31/12/2023

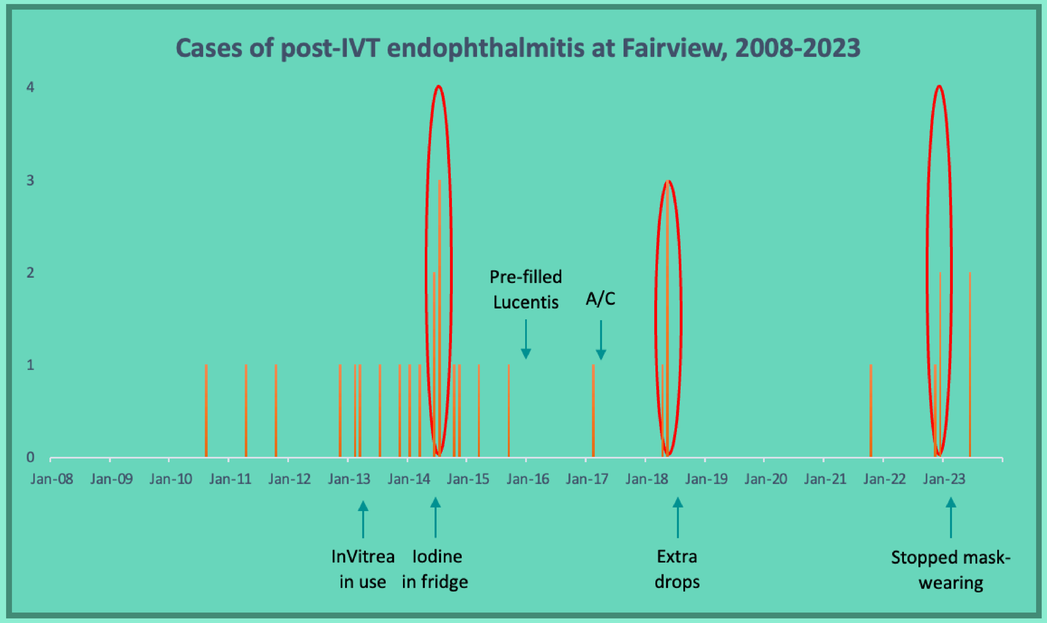
Variables:
- 26 demographic, clinical, and procedure-related

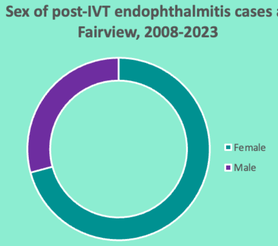
Inclusion criteria (case definition):
- Symptoms and signs of endophthalmitis AND treatment (tap/inject) received

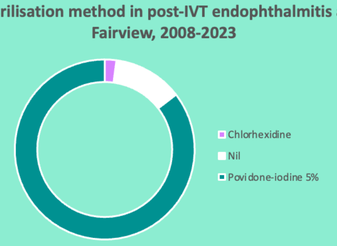
Results

Year	Patients	Eyes	Injections	Culture +ve cases	Culture +ve Incidence (culture +ve cases/1,000 injections)	Standard[1]
2008	2	2	6	0	0.000	0.562
2009	14	17	63	0	0.000	0.562
2010	766	859	2924	1	0.342	0.562
2011	1175	1362	6510	2	0.307	0.562
2012	1560	1837	6756	1	0.148	0.562
2013	1943	2321	7763	4	0.515	0.562
2014	2600	3220	12160	9	0.740	0.562
2015	3181	3968	13894	2	0.144	0.562
2016	3632	4571	14288	0	0.000	0.562
2017	4056	5186	14109	1	0.071	0.562
2018	4691	6024	15197	4	0.263	0.562
2019	5098	6582	17373	0	0.000	0.562
2020	4898	6417	12244	0	0.000	0.562
2021	5496	7207	15570	1	0.064	0.562
2022	6003	7884	16011	3	0.187	0.562
2023	5090	6242	19168	2	0.104	0.562
Total	**50205**	**63699**	**174036**	**30**	**0.172**	**0.562**

Culture result	Total	Mean VA pre	Mean VA post	Mean change
Commensals	22	61.5	33.5	-28.0
Non-commensals	3	52	0	-52
Polymicrobial	5	47.4	10.6	-36.8







Conclusion

- There were 30 culture positive cases of endophthalmitis post-intravitreal injection across the 15 year study period (2008-2023)
- Incidence rates were lower than the RCOphth standard on average over the study period, and higher in just 1 study year (2014)
- There were 3 clusters of endophthalmitis cases (2014, 2018, 2022), associated with iodine temperature, iodine frequency, and mask-wearing during the Covid-19 pandemic respectively
- There were relatively few cases caused by non-commensal organisms (3/30), which had a larger impact on visual outcome than commensals

References

1. Ophthalmic Service Guidance. Managing an outbreak of postoperative endophthalmitis. 2022.
2. Fileta JB, Scott IU, Flynn Jr HW. Meta-Analysis of Infectious Endophthalmitis After Intravitreal Injection of Anti-Vascular Endothelial Growth Factor Agents. Ophthalmic Surgery, Lasers and Imaging Retina. 2014;45(2):143–149
3. Ophthalmic Service Guidance. Intravitreal injection therapy. Royal College of Ophthalmologists. 2018.