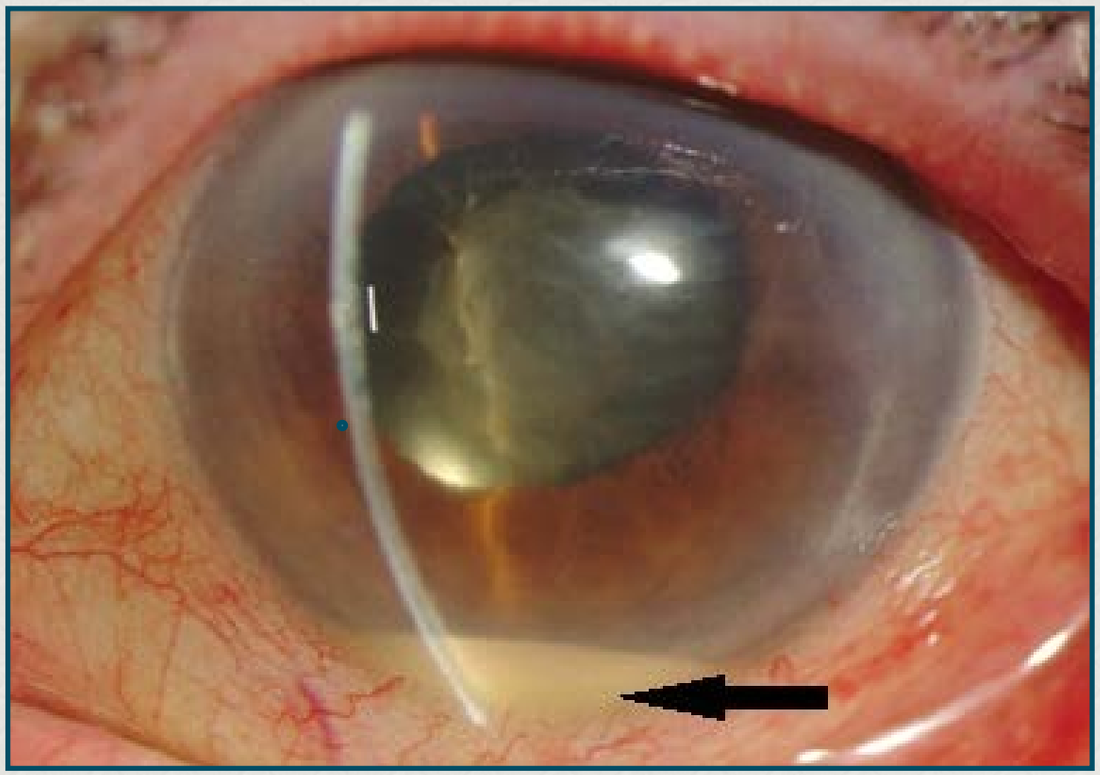
Università degli studi di Palermo
Dipartimento di Biomedicina e Neuroscienze Cliniche
Sezione di Oftalmologia
Resp. Prof. S. Cillino

Post-operative endophthalmitis incidence after intravitreal therapy: our experience

- *S. Piscitello; A.M. Sabella; V. Brunco; S. Cillino*

Clinical reports

- *Overall incidence of post-operative endophthalmitis (POE) after IVT of less than 0.9%.*



- *Between 0.0053%[1] and 0.9%[2].*

Incidence 0.0053%

Retina. 2015 Apr;35(4):783-8. doi: 10.1097/IAE.0000000000000392.

Eliminating antibiotic prophylaxis for intravitreal injections: a consecutive series of 18,839 injections by a single surgeon.

Bhavsar AR[1], Sandler DR.

⊕ **Author Information**

Abstract

PURPOSE: By optimizing the protocol for intravitreal injections, the risk of endophthalmitis can be minimized. This study assesses the incidence of endophthalmitis and other complications after a consecutive series of intravitreal injections where all antibiotics were excluded.

METHODS: Injections were performed from August 1, 1997 to October 31, 2012 in outpatient examination rooms at the Retina Center of Minnesota by a single retinal surgeon, the lead author. Most injections were performed to treat exudative age-related macular degeneration. Other reasons included diabetic macular edema, cystoid macular edema because of retinal vein occlusions, cytomegalovirus retinitis, and severe uveitis. Injections were given with topical povidone-iodine, proparacaine, and tetracaine, a sterile eyelid speculum, and clean nonsterile gloves, but without any antibiotics. Data were retrospectively analyzed using billing codes from a computer database system.

RESULTS: A total of 18,839 injections were given. Of these, the following injections were administered: bevacizumab, 15,479 (82.16%); ranibizumab, 1,669 (8.86%); triamcinolone acetonide (Kenalog-40), 1,014 (5.38%); pegaptanib sodium, 370 (1.96%); aflibercept, 148 (0.79%); dexamethasone implant, 88 (0.47%); triamcinolone acetonide (Triesence), 32 (0.17%); dexamethasone, 29 (0.15%); and ganciclovir, 10 (0.05%). There was one case of postinjection endophthalmitis. The incidence of endophthalmitis per injection was 0.0053%.

CONCLUSION: A low incidence of endophthalmitis can be achieved when topical antibiotics are omitted.

Incidence 0.9%

PLoS One. 2013 Oct 25;8(10):e78538. doi: 10.1371/journal.pone.0078538. eCollection 2013.

Efficacy and safety of intravitreal therapy in macular edema due to branch and central retinal vein occlusion: a systematic review.

Pielen A[1], Feltgen N, Isserstedt C, Callizo J, Junker B, Schmucker C.

Author information

Abstract

BACKGROUND: Intravitreal agents have replaced observation in macular edema in central (CRVO) and grid laser photocoagulation in branch retinal vein occlusion (BRVO). We conducted a systematic review to evaluate efficacy and safety outcomes of intravitreal therapies for macular edema in CRVO and BRVO.

METHODS AND FINDINGS: MEDLINE, Embase, and the Cochrane Library were systematically searched for RCTs with no limitations of language and year of publication. 11 RCTs investigating anti-VEGF agents (ranibizumab, bevacizumab, aflibercept) and steroids (triamcinolone, dexamethasone implant) with a minimum follow-up of 1 year were evaluated.

EFFICACY CRVO: Greatest gain in visual acuity after 12 months was observed both under aflibercept 2 mg: +16.2 letters (8.5 injections), and under bevacizumab 1.25 mg: +16.1 letters (8 injections). Ranibizumab 0.5 mg improved vision by +13.9 letters (8.8 injections). Triamcinolone 1 mg and 4 mg stabilized visual acuity at a lower injection frequency (-1.2 letters, 2 injections).

BRVO: Ranibizumab 0.5 mg resulted in a visual acuity gain of +18.3 letters (8.4 injections). The effect of dexamethasone implant was transient after 1.9 implants in both indications.

SAFETY: Serious ocular adverse events were rare, e.g., endophthalmitis occurred in 0.0-0.9%. Major differences were found in an indirect comparison between steroids and anti-VEGF agents for cataract progression (19.8-35.0% vs. 0.9-7.0%) and in required treatment of increased intraocular pressure (7.0-41.0% vs. none). No major differences were identified in systemic adverse events.

CONCLUSIONS: Anti-VEGF agents result in a promising gain of visual acuity, but require a high injection frequency. Dexamethasone implant might be an alternative, but comparison is impaired as the effect is temporary and it has not yet been tested in PRN regimen. The ocular risk profile seems to be favorable for anti-VEGF agents in comparison to steroids. Because comparative data from head-to-head trials are missing currently, clinicians and patients should carefully weigh the benefit-harm ratio.

Methods

- *2 study groups: 103.5 months (from Mar 27th 2007 through Oct 15th, 2015).*
- ***Group A**: systemic and topical preoperative antibiotic prophylaxis (PAP). Mar 27th, 2007 through Feb 28th, 2013.*
- ***Group B**: topical PAP. Mar 1st, 2013 through Oct 15th, 2015*
- *6111 Intravitreal therapies (IVTs) of Bevacizumab, Pegaptanib, Ranibizumab, Triamcinolone, Dexamethasone implant.*

PAP, antisepsis and post-IVT therapy

	GROUP A	GROUP B
(PAP) regimen	Topical ofloxacin, netilmicin or tobramicin and systemic azithromycin or levofloxacin.	Topical ofloxacin, netilmicin or tobramicin. No systemic antibiotic prophylaxis.
Antisepsis	Povidone-iodine 10% upon the surgical area and irrigation of the conjunctival sac for 2 minutes by povidone-iodine 5%.	The same
Post-IVT therapy	Topical dexamethasone and the same antibiotic used for PAP.	The same

Results

	GROUP A	GROUP B
Months	71	32.5
Number of IVT	2881	3230
Cases of POE per injection	1	1
Post-operative endophthalmitis incidence	Incidence rate (0.035%) (95% CI, 0.041-0.028)	Incidence rate (0.031%) (95% CI, 0.037-0.025)

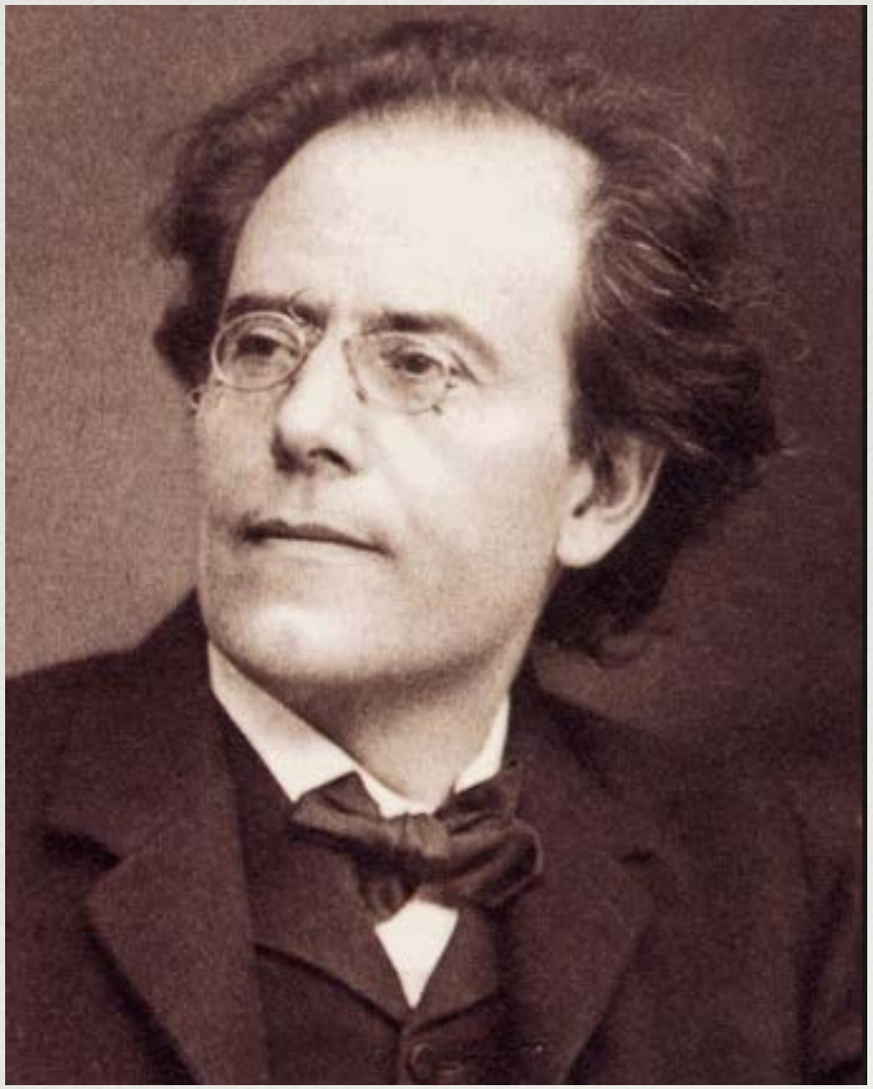
Relative number of intraocular procedure

	Group A	Group B
Anti-VEGF	2793 (96.9%)	3036 (94.0%)
Triamcinolone	58 (2.0%)	0 (0.0%)
Dexamethasone	30 (1.0%)	194 (6.0%)
Total	2881	3230

Conclusions

- *P= 0.4 (one tailed z-statistic).*
- *The incidence of POE in Group A (0.035% per injection) is not statistically different from that of Group B (0.031% per injection).*

Thanks



April 15th 2016, Campofelice di Roccella