Yazan Fakhoury et al., J Clin Exp Ophthalmol 2021, Volume 12

What is the infection risk post-intravitreal injections in immune suppressed patients?

Yazan Fakhoury[1] and **Samer Elsherbiny**[2,3]

[1]Leeds University Teaching Hospitals NHS Trust, UK

[2]Machen Eye Unit, Warwick Hospital, UK

[3]Warwick Medical School, University of Warwick, Coventry, UK

Background: Infectious endophthalmitis is a sight-threatening complication occurring in 0.025% of patients following Intravitreal Injection (IVI) secondary to microbial infection. 0.015% of cases are culture-positive cases, suggesting sterile endophthalmitis is less common in IVI procedures (2). Although some evidence broadly suggests an increased rate of infection in immune suppression, particularly patients with malignancy, older age, rheumatological conditions and immunosuppressive therapy, some studies have reported otherwise. Current guidance states no difference in the approach to IVI for immune suppressed groups. Due to low overall risk of endophthalmitis from anti-VEGF IVI and lack of large-scale studies investigating association between infection rate and immune suppression, analysis of local data and comparison with published research is therefore warranted to answer this question.

Purpose: To understand how immune suppression can predispose to development of infection after IVI compared with non-immune suppressed patients.

Methods: All patients who were undergoing IVIs between September 2012 to April 2021 and were immune suppressed (due to clinical condition and/or treatment) were included. Patient notes from the Medisoft electronic database were identified and reviewed for information pertaining to underlying condition; treatment status during study period; indication for IVI; duration and frequency of injections and incidence of intra-vitreal infection during the study period. All IVIs were performed in a designated injection room following minimum infection control measures as per the Royal College of Ophthalmologists guidance. Clinical assessment and imaging between IVI treatment cycles informed follow-up.

Results: A total of 23 IVIs were performed on 19 patients (42% male; 58% female). Mean age 79 years (range, 59-92 years). Underlying malignancy (n=18) or renal transplant (n=1) caused immune suppression with 79% (n=15) of patients on active treatment for these conditions at the time of IVI. Myeloma (16%), leukaemia (21%) and metastatic breast cancer (16%) were the most frequently occurring conditions. There were no reported instances of post-injection sterile inflammation or infection despite use of standard antisepsis protocol. Average treatment duration was 43 months (range, 7-102 months) and 25 injections (range, 8-26 injections) were given on average in that period.

Discussion: Previous studies have been unable to demonstrate a clear association between infection risk in immune suppression. Based on this retrospective, observational study conducted in a single centre, there appears to be no increased incidence of infection compared with non-immune suppressed patients. Longevity

and rising cancer incidence in the general population has prompted the importance of addressing immune suppression and establishing the infection risk for future cohorts undergoing IVI therapy. Current guidelines adequately manage infection risk, regardless of patient immune status, but would require a larger, prospective, comparative study.

Recent Publications

1. Mukherjee C, Al-Fahad Q, Elsherbiny S. The role of optical coherence tomography in therapeutics and conditions, which primarily have systemic manifestations: a narrative review. Therapeutic Advances in Ophthalmology. 2019;11:251584141983115.
2. Gale R, Mahmood S, Devonport H, Patel P, Ross A, Walters G et al. Action on neovascular age-related macular degeneration (nAMD): recommendations for management and service provision in the UK hospital eye service. Eye. 2019;33(S1):1-21.
3. Andreatta W, El-Sherbiny S. Evidence-Based Nutritional Advice for Patients Affected by Age-Related Macular Degeneration. Ophthalmologica. 2014;231(4):185-190.
4. Sharif W, Sheikh K, De Silva I, Elsherbiny S. Nonarteritic anterior ischemic optic neuropathy associated with interferon and ribavirin in a patient with hepatitis C. American Journal of Ophthalmology Case Reports. 2017;5:52-55.
5. Lip P, Malick H, Damer K, Elsherbiny S, Darrad K, Mushtaq B et al. One-year outcome of bevacizumab therapy for chronic macular edema in central and branch retinal vein occlusions in real-world clinical practice in the UK. Clinical Ophthalmology. 2015;:1779.
6. Mukherjee C, Mitra A, Kumar N, Elsherbiny S, Lip P. Macular Hole Formation After Intravitreal Ranibizumab Injection in WetAge-Related Macular Degeneration. The Open Ophthalmology Journal. 2015;9(1):177-180.
7. Crosby N, Mushtaq B, Dimopoulos A, Lip P, Stavrou P, El-sherbiny S et al. Effect of initial retinal thickness on outcome of intravitreal bevacizumab therapy for diabetic macular edema. Clinical Ophthalmology. 2014;:807.

Biography

Yazan Fakhoury is from Leeds University Teaching Hospitals NHS Trust, Leeds, UK . He published many articles in reputed journals.