



A CASE SERIES OF ENDOGENOUS ENDOPTHALMITIS (EE) IN CHRONIC KIDNEY DISEASE (CKD) PATIENTS ON DIALYSIS

Ophthalmology

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ABSTRACT

Purpose: To report a case series of endogenous endophthalmitis in CKD patients. **Method:** 4 patients of CKD on dialysis presented with diminution of vision, redness, pain in both eyes since 1 week. On examination patients had vision of counting finger close to face in both eyes, with corneal edema, with anterior chamber reaction-hypopyon, fundus examination shows no view and B-scan shows inflammatory echoes. Patients were treated with 2 doses of intravitreal antibiotic (0.1ml ceftazidime+0.1ml vancomycin) and intravitreal antifungal (0.1ml voriconazole) at 48 hours apart as empirical treatment, topical antibiotic and cycloplegics. AC tap and blood was sent for culture and sensitivity there was no growth. **Result:** After 2 doses of intravitreal injection and ongoing intravenous antibiotics 3 patients vision improved to 6/60 and 1 patient's vision improved to 6/18. Intravenous and topical antibiotics were continued. **Conclusion:** CKD patients on dialysis are more prone to endogenous endophthalmitis. Early diagnosis and appropriate treatment improve visual outcome.

KEYWORDS

INTRODUCTION

Endophthalmitis, a dreaded ophthalmological emergency, is the intraocular infection of the inner coats of the eyeball associated with diffuse vitreous inflammation.¹ EE accounts for approximately 2–8 % of all cases of endophthalmitis. Due to paucity of the disease, literature on EE mostly comprises of case series or single case reports. Unlike exogenous endophthalmitis, demographics, treatment options, and outcome measures in patients with EE have not been studied in large-scale studies.⁽²⁾

Both bacterial and fungal agents are noted in the literature as potential agents of EE in the developed world. However, fungal organisms account for the majority of the cases.⁽³⁾

Chronic kidney disease (CKD) has emerged as a leading cause of mortality worldwide.⁽⁵⁾ End-stage CKD is associated with an increased risk of infections.^(6,7)

METHOD OF STUDY

4 patients of CKD on dialysis presented with diminution of vision, redness, pain in both eyes since 1 week. On examination patients had vision of counting finger close to face in both eyes, with corneal edema, with anterior chamber reaction-hypopyon, fundus examination shows no view and B-scan shows inflammatory echoes. Patients were treated with 2 doses of intravitreal antibiotic (0.1ml ceftazidime+0.1ml vancomycin) and intravitreal antifungal (0.1ml voriconazole) at 48 hours apart as empirical treatment, topical antibiotic and cycloplegics. AC tap and blood was sent for culture and sensitivity- Table no 1

DISCUSSION

Patients with renal dysfunction are more vulnerable to infections for several reasons: structural and functional abnormalities of urinary tract, immunocompromised state secondary to DM, immunosuppressive therapy for glomerular and interstitial diseases and for renal transplantation, and dialysis access and dialysis procedure can predispose patients with kidney disease to infections. Hematogenous spread of infectious agents in the setting of severe sepsis and the occurrence of metastatic infection is more likely in these patients. EE is one such rare metastatic focus that often leads to permanent vision loss.⁽¹⁾ The risk factors include diabetes, male gender, old age and lack of prophylactic perioperative antibiotics.⁽⁴⁾

Table No: 1

	Patient 1	Patient 2	Patient 3	Patient 4
Age (years)	32	51	71	60
Gender	Female	Female	Male	Male
Diabetes mellitus	No	Yes	Yes	yes

Eye involvement	Right eye	Left eye	Both eyes	Left eye
Kidney disease	Renal Transplant recipient	CKD 5D	Infection-related glomerulonephritis	CKD stage 4
Blood culture	No growth	No growth	No growth	No growth
Aqueous and vitreous culture	No growth	No growth	No growth	No growth
Systemic antibiotic	Vancomycin	Diclox-acillin followed by Cefazolin	Piperacillin Tazobactam followed by Meropenem	Dicloxacillin followed by Cefazolin
Intra-vitreous antibiotic	2 doses of intravitreal antibiotic (0.1ml ceftazidime+0.1ml vancomycin) and intravitreal antifungal (0.1ml voriconazole) at 48 hours apart			
Vitrectomy	Not done	Not done	Not done	Not done
Vision outcome	Right eye-6/18	Left eye-6/60	Both eyes 6/60	Left eye-6/60

RESULT

After 2 doses of intravitreal injection and ongoing intravenous antibiotics 3 patients vision improved to 6/60 and 1 patient's vision improved to 6/18 which was counting finger close to face on the day of presentation. Intravenous and topical antibiotics were continued. Table No-1

CONCLUSION

EE is an ophthalmological emergency that requires prompt diagnosis and management. Figure 4 depicts a simplified flow chart for the diagnosis and management of EE. The main challenges in the management of EE are early identification and delivering an adequate concentration of the drug in the vitreous cavity. It may be possible to overcome this challenge with direct intravitreal administration of the antibiotic.

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