Commentary: Management of endogenous endophthalmitis: Ophthalmologist in the role of a physician

Endogenous endophthalmitis (EE) is caused by hematogenous spread of infection to the eye from a distant systemic focus. In contrast to exogenous endophthalmitis like postsurgery or posttraumatic endophthalmitis, management of EE encompasses treatment of ocular infection as well as investigations to look for the systemic source of infection.[1,2] A significant proportion of EE cases may not have any systemic symptoms which would guide clinician to look for the source of infection.[3] Therefore, a meticulous elicitation of clinical history from patient to understand the probable cause of endophthalmitis is of utmost importance. Routine blood count, blood and urine culture, and chest X-ray should be done in cases of EE.[2] Further investigations can be individualized based on patient's history. In the present report titled "Management of multidrug-resistant *Klebsiella pneumoniae* EE with intravitreal and systemic colistin," authors present clinical data of a patient of EE who was referred from gastroenterology department and was known to have pancreatitis.[4] This information was vital, and they could correlate the vitreous culture with the culture of pus obtained from pancreas; both of which yielded the same microorganism. This case highlights the need of working closely with treating internist to understand the exact etiology of EE which further enables ophthalmologist to pinpoint the microorganism and use appropriate antibiotic. However, it is also true that EE may not always be preceded by debilitating systemic infection and can even occur secondary to superficial skin infections such as erysipelas and fungal infections.[5,6]

Intravitreal vancomycin (1 mg/0.1 ml) and ceftazidime (2.25 mg/0.1 ml) are usually the first choice of antibiotics for EE, pending antibiotic sensitivity report of aqueous or vitreous which should ultimately guide the choice of intravitreal antibiotics.[1,2] Intravitreal dexamethasone (0.4 mg/0.1 ml) can be used along with intravitreal antibiotics in bacterial EE cases. Cases with fungal EE should be treated with intravitreal amphotericin B (5 μg) or voriconazole (50 μg). Intravenous antibiotics have a significant role in the management of EE. Third-generation cephalosporin and ciprofloxacin are the usual choices. Systemic antifungal agents such as fluconazole (100 mg twice daily) and voriconazole (200 mg loading dose followed by 100 mg daily) should be added in fungal EE cases. Opinion from infectious disease specialist or internist would be vital in deciding the systemic antimicrobial based on patient's systemic condition. In the present case, authors have used intravitreal colistin (1000 IU/0.1 ml) to treat the multidrug-resistant *K. pneumoniae* EE.[4] The report of the use of intravitreal colistin is sparse in published literature. However, in cases with multidrug resistance, unconventional antibiotics become the likely agents to be considered. Colistin is a polypeptide antibiotic which binds to the cell membrane of Gram-negative bacteria and alters its permeability.[7] Colistin is nephrotoxic, and its nephrotoxicity was a major reason why it did not become popular antibiotic choice among clinicians in the past.[8] Authors have not mentioned the renal status of the patient in the current report.[4] It would be pertinent to keep the renal status of the patient in mind while administering systemic colistin, more so because EE can be seen in patients with deranged renal parameters due to primary renal disease.

The patients with EE can both be systemically debilitated and completely healthy.[1,2] They can be perfectly ambulatory, walking into the clinic of an ophthalmologist as well as bound to life support in an intensive care unit of a multidisciplinary hospital. They can be immunocompetent as well as immunocompromised. They can present with acute painful loss of vision at one hand and smoldering low-grade infection mimicking uveitis on the other hand. The crux of management remains obtaining detailed clinical history and appropriate systemic investigations alongside usual management of endophthalmitis. It is important to note for an ophthalmologist that the reason for ocular events in EE is rooted somewhere else in the body and needs to be found out to achieve optimum outcome. Management of EE requires us to work and think not just as an ophthalmologist but also as a physician.

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Quick Response Code:

Website: www.ijo.in

DOI: 10.4103/ijo.IJO_1334_17

Cite this article as: Saurabh K, Roy R, Shah D. Commentary: Management of endogenous endophthalmitis: Ophthalmologist in the role of a physician. Indian J Ophthalmol 2018;66:598-9.