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Relevance of HBSAG and HIV Screening in Patients Presenting for Ocular Surgery at Tertiary Eye Hospital in Nepal

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Abstract

Background: Cataract is the leading cause of preventable blindness in developing countries, the chances of cross infection of HBsAg and HIV in health care providers is maximum from patients and the data of HBsAg and HIV co-infection among our area is not documented. The main aim of this study is to access the relevance of HBsAg and HIV screening in patients selected for cataract surgery.

Methods: A hospital based retrospective study conducted at tertiary eye hospital and the data collected were between 2017 Nov to 2023 May from the IT and record department. Pre-operative evaluation and lab investigations including HIV and HBsAg were done. Socioeconomic data from seropositive patients were collected. The statistical data was analyzed using Microsoft excel.

Results: There were 570 HBsAg positive patients and 61 HIV positive patients out of 80096 patients operated for cataract. Age ranged from 25 Years to 75 years with higher percentage of seropositive patients in the range of 46 years to 65 years. Among HBsAg positive patients, 336 were male and 234 Females, while 39 patients were male and 22 were female among HIV patients. Most of the patients were illiterate 512 (81.15%), 119 (18.85%) were laborer's and 256 (40.5%) were house wife by occupation. 312 (49.44%) patients were married with spouse and 241 (39.19%) were married without spouse and 78 (12.36%) were unmarried patients.

Conclusion: Pre-operative assessment of HIV and HBsAg among cataract patients is required and should be made compulsory before undergoing cataract surgery in any region to prevent the risk of horizontal transmission among patients and eye care professionals.

Keywords: HIV; HBsAg; Cataract; Socioeconomic

Introduction

HIV and HBsAg are among the most common blood borne infectious agents involved in occupational transmission and healthcare workers and most of the carriers of their viral disease and asymptomatic [1]. Although the National AIDS Control Organization (NACO), India, estimates HIV infection to be on a decline, the prevalence is 0.22% to 0.32% while accurate data of HBV infection in India are not available, estimates HBV prevalence is 2% to 8%, with an estimated carrier population of 56.5 million. At the end of 2013 there were an estimated 4.8 million people living with HIV in the Asia pacific region including 6 countries like China, India, Indonesia, Myanmar, Thailand, Vietnam accounts for more than 90% of people living with HIV in this region [2]. India has the third largest number of people living with HIV in the world and accounts for 4 out of 10 people living with HIV in the region as per UN Report [3]. The average annual incidence of needle stick injuries among health care workers at a tertiary eye care center over a 6year period was 23 health care providers /year [4]. Previous studies have reported detection of HBV surface antigen in tears and aqueous humor of HBV seropositive individuals suggesting that Ophthalmologists may be at risk of contracting HBV infection by treating such patients [5]. Most of the patients undergoing cataract surgery do not know their HIV and HBsAg status, there is a risk of horizontal transmission amongst patients and eye care providers.

The present study was conducted to know the relevance of HIV and HBsAg antigens in the serum amongst patients selected for surgery in our region and to estimate the need for screening for these viral infections.

Methods

A retrospective study was conducted at a tertiary eye care hospital, data was taken between 6/Nov /2017 to 5/Dec/ 2023 from the record section. The protocol was approved by the Institutional Ethical Committee and strictly adhered to the Declaration of Helsinki. All the patients enrolled for cataract surgery attending the hospital were included in the study. Pre-operative laboratory investigations as per the hospital guidelines for management of cataract were done. Apart from these investigations, serological tests to detect HIV and HBsAg in all cataract patients were also conducted under the supervision of a lab technologist. HBsAg testing was done by HEPACARD (for the qualitative detection of HBsAg in Human serum / Plasma) kit while HIV tests were done using HIV ½ Ab Rapid test kit (Lateral flow chromatographic immunoassay test). HBsAg positive were confirmed by ELISA and counseled regarding the seriousness of the positive test. HIV positive patients were sent to physician for CD4:CD8 counts assessment and further treatment. All the serology positive patients underwent small incision cataract surgery under peribulbar anaesthesia under safety protocol and all the operating surgeon and assistant used special protective kit meant for operating on seropositive cases. The details were recorded on the proforma and data was analyzed by using Microsoft excel.

Results

Out of 80096 patients selected for cataract surgery between the age group of 25years – 75years of age, 570 patients were HBsAg positive and 61 patients were HIV positive. Of the 570 HBsAg positive patients, 336 patients were male and 234 were female patients and out of 61 HIV positive patients, 39 were male and 22 were female patients as summarized in (Table 1).

Table 1: *Year wise presentation of seropositive patients.*

Year	Total no. of cataract patients	HBsAg + males	HBsAg + females	HIV + males	HIV + females
2017	2580	4	2	2	1
2018	13332	94	56	9	4
2019	10747	66	32	10	3
2020	7171	26	31	3	1
2021	16088	51	53	8	10
2022	15553	67	41	5	1
2023	14625	28	19	2	2
Total	80096	336	234	39	22

Table 2: *Sociodemographic data of seropositive patients.*

Education	Illiterate	512
	Literate	119
Occupation	Businessman	74
	House wife	256
	Driver	82
	Farmer/labour	219
Marital status	Married with spouse	312
	Married without spouse	241
	unmarried	78
Comorbid conditions	None	0

Table 3: *Age wise distribution of seropositive patients.*

Age group	Male	Female	Total
25-35 years	32 (53.33%)	28 (46.67%)	60
36-45 years	88 (70.4%)	37 (29.6%)	125
46-55 years	107 (56.03 %)	84 (43.97)	191
56-65 years	118 (59.9%)	79 (40.1%)	197
66-75 years	30 (51.7%)	28 (48.3%)	58
Total	375 (59.4%)	256 (40.6%)	631

Sociodemographic profile of seropositive patient reveals that most of the patients 512 (81.15%) were illiterate, 119 (18.85%) were laborer and 256 (40.5%) were housewife by occupation as shown in (Table 2). Age wide distribution of seropositive patients was arranged from 25 Years to 75 years with higher percentage of seropositive patients in the range of 46 years to 65 years age group as summarized in (Table 3).

Discussion

Cataract surgery is the most common surgery performed worldwide to restore vision. Risk of transmission of HBsAg or HIV during cataract surgery is possible. Reports on transmission of HIV or HBsAg during cataract surgery are not reported but viral particle has been reported in donor cornea tissue for transplant [6]. Since majority of carriers are asymptomatic and pose a real threat to health personnel as well as other patients, a literature review revealed that health care workers had been contracted HIV due to their occupation [7]. Occupational blood exposure to ophthalmologist and paramedical assistants can occur by needle stick injury while giving ocular block, using sharp microsurgical instruments, during cleaning and exchange of instruments and disposal of biomedical waste. The ophthalmology operation theatre is the second most common location for needle stick injury accounting for 17% in the developed countries [8]. Okoye et al. in his study prevalence of human immunodeficiency virus seropositivity among eye surgical patients at a rural eye care facility in South-Eastern Nigeria reported that 3.7% of the eye surgical patients were HIV positive at a rural hospital which in contrast to study showed 0.07% of the screened patients were HIV while 0.71% were HBsAg positive [9].

Our study showed 59.4% male and 40.6% female seropositive patients which coincides to the study done by Arif [10]. Which also reported males were more affected than the females for seropositivity and this could be due to more social mobility in the males, and thus, greater vulnerability to get infected. Ahmad [11] and Naeem [12] in their study reported that the highest number of seropositive cases were in the age group 50-85 years and 55-64 years respectively, which coincides with our study as higher percentage of seropositive patients were found in the range of 46 years to 65 years age group, this may be due to people in that decade of life present commonly for cataract surgery. In our study sociodemographic profile of seropositive patient revealed that most of the patients 512 (81.15%) were illiterate, 119 (18.85%) were laborer and 256 (40.5%) were housewife by occupation. 312 (49.44%) patients were married living with spouse while 241 (39.19%) were married without spouse and 78 (12.36%) were unmarried patients which shows similarity to the study done by Praveen [13] this indicates that seropositivity is more prevalent in low socioeconomic group.

Conclusion

Preoperative testing for HBsAg and HIV should be mandatory for all the patients undergoing cataract surgery or any ocular surgery to prevent horizontal transmission among eye care professionals. This could also help in early detection and treatment of patients living with viral load.

References

1. Beltrami EM, Williams IT, Shapiro CN, Chamberland ME. Risk and management of blood borne infections in health care workers. Clin. Microbiol Rev. 2000; 13: 385-407.
2. Chatterjee S. Universal Screening: To do or not to do. Indian J Ophthalmology. 2018; 400-401.
3. Epidemic update and health sector progress towards universal access. Global HIV /AIDS response: WHO / UNICEF / UN AIDS 2011.
4. Rishi E, Shantha B, Dhami A, Rishi P, Rajapriya HC. Needle stick injuries in a tertiary eye care hospital. Incidence, management, outcomes and recommendations. Indian J Ophthalmol. 2017; 65: 9999 -10103.
5. yeo Tsai C, Lin Lin C, Cheng Lin S, Liou S. Dectection of hepatitis B virus in the aqueous humor of a hepatitis B virus carrier. Ophthalmol. 2009; 223: 93-95.
6. Geier SA, Klauss V, Gurtler L. Human immunodeficiency virus type 1 and type 2 seroprevalence in cornea donors. Ger J Ophthalmol. 1994; 3: 182-185.
7. Veeker H, Verbrek J, Howeling H, Cobeleus F. Occupational HIV infection and health workers in the tropics. Tropc.doc. 1991; 21: 28-31.
8. Santosh G Honnavar. Universal screening versus universal precautions in ophthalmic surgery. Indian J Ophthalmol. 2018; 66: 355-356.
9. Okoye O, MagulikeN, Chuka-Okosa C. Prevalanece of human immunodeficiency virus seropositivity among eye surgical patients at a rural eye care facility in South-Eastern Nigeria. Middle East Afr J Ophthalmol. 2012; 19: 93-96.
10. Arif SH, Afrose R, Khan AI, Akram M, Singh SK. Seropositivity rates for hepatitis B and C viruses in indoor patients of a tertiary care center of Northern India. Int J Curr Microbiol Appl Sci. 2015; 1: 243-247.

11. Naeem SS, Siddiqui EU, Kazi AN, Khan S, Abdullah FE, Adhi I. Prevalence of hepatitis B and hepatitis C among preoperative cataract patients in Karachi. BMC Res Notes. 2012; 5: 492.
12. Ahmad I, Khan SB, Rahman HU, Khan MH, Anwar S. Frequency of hepatitis B and hepatitis C among cataract patients. Gomal J Med Sci. 2006; 4: 61-64.
13. Sadanand KP, Waghmare SA. Preoperative testing for HBsAg and HIV among patients undergoing cataract surgery and its importance. MedPulse Inter J Microbiol. 2019; 9: 13-15.