

**RELEVANCE OF HIV AND HBSAG SCREENING IN PATIENTS SELECTED FOR CATARACT SURGERIES**Hanumantharao Gopiseti<sup>1</sup>, Venkateswararao Hanumanthu<sup>2</sup>, Sivacharan K. J. N<sup>3</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: AIM:** To assess the relevance of HIV & HBS Ag screening in patients selected for cataract surgery. **PATIENTS & METHODS:** 1540 patients who were selected for cataract surgery in the eye camps during the period of September 2011 to September 2012 were included in the study. It was prospective randomized clinical study conducted at a tertiary hospital. **RESULTS:** Out of 1540 patients during the thirteen month period 5 were positive for HIV and 67 were positive for HBS Ag. **CONCLUSION:** It is very important to screen all the patients selected for cataract surgery for HIV & HBS Ag to prevent the risk of horizontal transmission among patients and eye care providers.

**KEYWORDS:** Cataract, HIV, Hepatitis B.

**INTRODUCTION:** At the end of 2013 there were an estimated 4.8 million people living with HIV in the Asia pacific region. 6 countries China, India, Indonesia, Myanmar, Thailand and Vietnam account for more than 90% of people living with HIV in the Asia pacific region. India has the third largest number of people living with HIV in the world-2.1 Million at the end of 2013 and account for 4 out of 10 people living with HIV in the region As per UN Report updated July 17<sup>th</sup> 2014.<sup>(1)</sup> In India the number of new HIV infection declined by 19% but still accounted for 38% all new HIV infections in the Asia pacific region.<sup>(2)</sup>

Most of the patients undergoing cataract surgery do not know their HIV and HBS Ag status. Thus there is a risk of horizontal transmission amongst cataract surgery patients and eye care providers. Our aim was to study the relevance of screening for HIV and HBS Ag antigens in the serum amongst patients selected for cataract surgery.

**MATERIALS & METHODS:** The study was conducted at a tertiary eye care hospital between the periods of September 2011 to September 2012. 1613 patients were included in the present study of which 694 were males and 919 were females. All patients selected for cataract surgery in the camps conducted under National Programme for Control of Blindness (NPCB) were included in the study. All patients underwent thorough clinical examination and investigations required for cataract surgery. Along with routine cataract surgery investigations all patients underwent screening for both HIV and hepatitis B antigen.

They were advised for Voluntary counseling and testing center (VCTC) for HIV testing and blood samples collected for HBS Ag testing. The standard blood screening for HIV is ELISA also referred as enzyme immunoassay (EIA). EIA is solid phase assay and is extremely good screening test with a sensitivity of >99.5%. Most diagnostic labs use commercial EIA kits that contain both HIV 1 & HIV 2 antigens and thus are able to detect either. COMBAIDS – RS Advantage ST HIV 1 & 2 immuno dot test kits are being used. Dot immune assay for the detection of antibody to HIV I and / HIV 2 in whole blood, serum/plasma.

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The test kit is in vitro read, dot immune assay intended for qualitative detection IgG/IgM antibodies to the HIV Type I and are type II in human whole blood serum / plasma. Dot immune assay employs the same principle as enzyme immune assay whereby the immobilized antigen antibody complex is visualized by means of chromomeric (Colour producing) reaction.

Crystal HBS Ag. (Device) immune chromatographic one step rapid visual test for Hepatitis B surface antigen device is used to test HBS Ag. It is an in vitro qualitative screening test to diagnose hepatitis B using human serum or plasma.

**RESULTS:** 1613 patients selected for cataract surgery from 1-9-2011 to 30-9-2012. They have undergone testing for HIV & HBS Ag after taking informed consent. Of them 5 patients were found to be positive for HIV and 67 patients found to be HBS Ag positive. Results are depicted in the following diagrams.

Patient status	Male	Female	Total
Negative for HIV HBs Ag	656	884	1540
HIV positive	5	1	5
HBsAg positive	33	34	67
<b>Total</b>	<b>694</b>	<b>919</b>	<b>1613</b>

**TABLE. 1: HIV, HBs Ag status and Gender wise distributions of all the patients**

HBs Ag	Male Number (percentage)	Female Number (percentage)	Total
Positive	33(4.79)	34(3.70)	67
Negative	656(95.21%)	884(96.30)	1540
<b>Total</b>	<b>689</b>	<b>918</b>	<b>1607</b>

**Table 2: Gender wise comparison of patients based on their HBs Ag status**

Or

Gender	HBs Ag		Total
	Positive	Negative	
Male	33	656	689
Female	34	884	918
<b>Total</b>	<b>67</b>	<b>1540</b>	<b>1607</b>

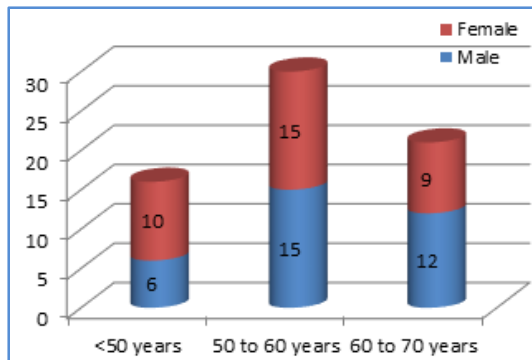
**Chi-square=1.1615, degree of freedom=1.  
P=0.2812 not significant difference**

Age groups	Male	Female	Total
<50	6	10	16
50 to 60	15	15	30
60 to 70	12	9	21
<b>Total</b>	<b>33</b>	<b>34</b>	<b>67</b>

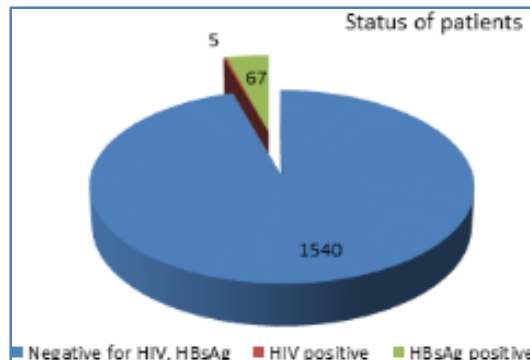
**Table 3: Age-wise distribution of HBs Ag positive patients**

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Chi square= 1.414, degree of freedom=2. P=0.4931 not significant difference.



**Graph 1: Distribution of all the patients under study**



**Graph 2: Age-wise distribution of HBSAg positive patients**

**DISCUSSION:** Cataract surgery is the most common surgery performed worldwide to restore vision. As per NPCB 2011 incidence of cataracts is 0.4% to 0.5% of the population. Approximately 7 million people become blind due to cataract at any given point of time. India is performing 6 million cataract surgeries every year.

Patients selected for cataract surgery under NPCB/DBCS camps are not being screened routinely for HIV & HBS Ag. The purpose of the study is to highlight the importance of preoperative testing for HIV & HBS Ag in camp patients selected for cataract surgery in India.

Since majority carriers are asymptomatic they pose a real threat to health personnel as well as other patients. A literature review revealed reports of 33 health care workers who had contracted HIV due to their occupation.<sup>(3)</sup>

Hepatitis B is common cause for viral hepatitis leading to chronic infection and carrier state.<sup>4</sup> Hepatitis B is endemic worldwide and is responsible for 1 to 2 million deaths worldwide every year. Indian subcontinent is classified as intermediate HBV endemic. HBS Ag carriage 2% to 7% zone and has the second largest global pool of chronic HBV infection.

In our study 5 patients were found to be HIV positive and 67 patients were found to be positive for HBS Ag. Positive individuals were detected during the study period of 13 months shows the importance of preoperative testing for camp patients selected for cataract surgery. Although number HIV positive patients in the study is less but it is significant if large numbers of HIV infected individuals in the country are considered. This is very important to prevent the risk of horizontal transmission among patients and eye care providers. The number of HBS Ag positive individuals is very significant. As these patients were not knowing their status prior to testing this is much more significant. All these patients were treated taking adequate extra precautionary measures.

**CONCLUSIONS:** Preoperative testing for HIV & HBS Ag should be made mandatory for all patients undergoing cataract surgery to prevent horizontal transmission amongst cataract surgery patients and eye care providers.

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