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ISSN: 0976-3031

International Journal of Recent Scientific Research
Vol. 6, Issue, 7, pp.5268-5271, July, 2015

International Journal of Recent Scientific Research

RESEARCH ARTICLE

IMPORTANCE OF SCREENING FOR HBSAG & HIV IN CATARACT SURGERY CASES

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ARTICLE INFO

Article History:

Received 14th, June, 2015
Received in revised form 23th, June, 2015
Accepted 13th, July, 2015
Published online 28th, July, 2015

Key words:

Elective Cataract surgery, pre operative screening, serology, HBV, HIV, professional health hazard, protective measures.

ABSTRACT

Main aim of study was to determine the frequency of positive serology for hepatitis B and HIV infection among patients who underwent elective cataract surgery. Patients who were selected for cataract surgery, were screened for hepatitis B surface antigen with kit method and HIV by ELISA. All details were recorded and data was compiled and analyzed for age and sex mean values by Pearson's correlation coefficients. Out of 1638 subjects, 1.77% Were found to be hepatitis B positive, out of these 62.07% were males and 37.93% were females. Out of 1638 subjects, 0.67% Were found to be HIV positive, out of these 45.45% were males and 54.54% were females. Screening of blood borne viral infections has great importance in minimizing the transmission of the virus to help the patients, doctors and paramedical staff through sharp knives, needles and other surgical instruments. The alarming percentage of positive viral infection gives us an idea of the risks involved and how to adopt practices which ensures the safety from these infections.

INTRODUCTION

Hepatitis B and HIV are a major disease affecting mankind and a serious global public Health problem. According to WHO studies, out of 2 billion people who have been infected with the hepatitis B virus (HBV), more than 350 million have chronic (lifelong) infection. These chronically infected persons are at high risk of death from cirrhosis of liver and liver cancer[11]

Cataract is a preventable cause of blindness and cataract surgery is the most common surgery performed worldwide to restore vision. As per NPCB2011 (National Program for Control of Blindness), 1% of the Indian population (121 core) is blind. Of this, 62% are blind due to cataract. Incidence of cataract is 0.4% to 0.5%. Approximately, 7 million people are/become blind due to cataract at any point of time. India is performing 6 million cataract surgeries every year[1].

Approximately 34.2 million people were living with HIV in 2011[2]. A literature review revealed reports of 33 health care workers who had contracted HIV due to their occupation[3]. Hepatitis B is endemic worldwide, responsible for 1-2 million deaths worldwide every year.

About 2 billion people have current or past infection and 350 million (24%) are carriers of the virus, out of which 80% reside in Asia. Indian subcontinent is classified as an intermediate HBV endemic (HBs Ag carriage 2-7%) zone and has the second largest global pool of chronic HBV infection[4]. The infection leads to chronic carrier state in 60% of affected individuals[5]. Surgeons and paramedical staff and other staff are at increased risk to get infected, especially in a surgical setup where unknown carriers of the virus are undergoing various procedures.

Risk of exposure during surgery in ophthalmology includes out-patient (OPD)procedures like syringing,biometry, Tonometry and OT procedures during anaesthesia, handling of sharp instruments (Blade, side-port, needles) and during cleaning and exchange of instruments, disposal of biomedical waste.

MATERIALS AND METHODS:

This analytical study carried out in ophthalmology OPD at RIMS general hospital, KADAPA from May 2014 to April 2015. 1638cases underwent laboratory work up included haematology, biochemistry and urine analysis and serology for Hepatitis B & HIV. Serology work up was done by Electrochemiluminiscence to detect HIV I and HIV II antigen and antibody, antigen of hepatitis B by chromatography(kit method) after history and examination. Ethical considerations like confidentiality about the study patient's name and their results were maintained. All cases were grouped as high risk cases for OT supportive staff and surgeons, operated with extra protocol, for all these high risk cases OPD procedures like syringing was done at the end of screening of other cases using

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disposable canulas. Biometry was done using ultra thin transparent polythene paper interface and the tip disinfected. Disinfection of Tonometry done after every patient OT procedures included use of disposable linen, double gloves to surgeon and assistants and use of disposable instruments. Sharp instruments were handled with care to avoid cuts .Reusable instruments like blade handles, scissors and others are identified as separate sets and cleaned with glutaraldehyde (korsolex) for prescribed time, cleaned and then double autoclaved. Biomedical wastes were disposed as per the biomedical waste disposal protocols. The details were recorded on proforma and data was compiled and analyzed for age and sex mean values. Special emphasis was put on age, sex, occupation. All patients of either sex who were operated as elective cases were included in the study.

RESULTS

During study period, out of 1638 patients (in which 689 were male and 949 were female patients, 29 (1.77%) patients were found to be HBV positive. In these 29 patients 18 (62.069%) were males & 11 (37.831%) were females (Table 1).

In case of HIV screening ,1638 patient was screened (in which 689 were male and 949 were female patients). After screening 11 (0.672%) patients were found to be HIV positive out of these 11 patients 5 (45.455%) were male and 6 (54.545%) were females (Table 1). The frequency of hepatitis B was more in the age group ranging between 45-60 yrs in both sexes.

All cases were grouped as high risk cases for OT supportive staffs and surgeons, operated with extra protocol.

Nearly 2-3% cases were found to be positive for serology in this study. Hence, serology screening should be made mandatory to protect surgeons and other supportive staffs from risk of infection.

Table 1

Month	HBV					HIV				
	Male		Female		Positive	Male		Female		Positive
	No	Positive n (%)	No	Positive n (%)	n (%)	No	Positive n (%)	No	Positive n (%)	n (%)
May2014	71	0 (0.00)	143	0 (0.00)	0 (0.00)	71	0 (0.00)	149	1 (0.671)	1 (0.455)
June2014	88	1 (1.136)	133	0 (0.00)	1 (0.452)	88	0 (0.00)	133	1 (0.752)	1 (0.452)
July 2014	80	2 (2.5)	105	0 (0.00)	2 (1.081)	80	0 (0.00)	105	0 (0.00)	0 (0.00)
August2014	49	0(0.00)	52	3 (5.769)	3 (2.97)	49	1 (2.041)	52	2 (3.846)	3 (2.97)
September 2014	46	0 (0.00)	52	3 (5.769)	3 (3.061)	46	0 (0.00)	52	0 (0.00)	0 (0.00)
October 2014	55	1(1.818)	48	2 (4.167)	3 (2.193)	55	0 (0.00)	48	0 (0.00)	0 (0.00)
November 2014	53	1 (1.887)	77	0 (0.00)	1 (0.769)	53	1 (1.887)	77	2 (2.597)	3 (2.308)
December 2014	26	2 (7.692)	27	0 (0.00)	2 (3.774)	26	0 (0.00)	27	0 (0.00)	0 (0.00)
January 2015	27	2 (7.407)	35	1 (2.857)	3 (4.839)	27	1 (3.704)	35	0 (0.00)	1 (1.613)
February 2015	56	0(0.00)	51	1 (1.961)	1 (0.935)	56	1 (1.786)	51	0 (0.00)	1 (0.935)
March 2015	54	3(5.556)	102	1 (0.98)	4 (2.564)	54	0 (0.00)	102	0 (0.00)	0 (0.00)
April 2015	84	6 (7.143)	118	0 (0.00)	6 (2.97)	84	1 (1.19)	118	0 (0.00)	1 (0.495)
Total	689	18 (2.612)	949	11 (1.159)	29 (1.77)	689	5(0.726)	949	6 (0.632)	11 (0.672)

DISCUSSION

The alarming situation of both HBV and HIV infection require that preoperative screening is necessary to avoid the transmission of blood-borne pathogens. This early detection can help in better management of patients and reduction in patient to Health care workers (HCW) transmission, of HIV and HBV infection in surgical units. Patients should be encouraged to participate in routine and voluntary testing for blood-borne pathogens. Implementation of criteria to manage the risk of transmission should be applied on cases that show symptoms of jaundice, but majority of patients with chronic HBV are undiagnosed and asymptomatic. In 2000 the International journal of STD aids estimated that contaminated injection caused 21 million (40%) HBV infection and 2,60,000 (5%) HIV infection through out the world[6].Transmission of HBV and HIV is a well-documented occupational hazard for health care workers (HCWs). In health care settings, transmission of these viruses have been reported from patient to HCW, from HCW to patient, and from patient to patient. Although these viruses are blood-borne and share a common route of transmission, the epidemiology of transmission differs based on the virus involved and circumstances of the exposure. HBV is more efficiently transmitted than HIV, because of the high volume of Hepatitis B viruses in the blood of infected people compared to the lower viral load in people infected with HIV. The international journal of STD Aids estimate that after a percutaneous exposure HBV more infectious than HIV[6].The transmission risk of HIV is 0.3% and HBV is 30% [10].Our retrospective review of HBV and HIV in elective eye surgery is very alarming. (Fig. 1) shows that monthly prevalence average rate of HBV is 0.14% and HIV is 0.05%.The results shows that sero prevalence of HBV & HIV is high in males as compared to female patients(Fig. 2), this is similar in comparison to the other studies carried out in Karachi[15,16]. While there was not much gender difference found as per as HIV was concerned. The greater frequency of HBV infection in males as compared to females could be a reflection of more social mobility in males than females and thus greater vulnerability to be infected. The prevalence of HBV infection in male and female patients according to age is shown in (Fig. 3), in both genders a high prevalence rate was observed in the 51-60 years age group.

Similarly prevalence of HIV infection in male and female patients according to age is shown in (Fig. 4) While 1-20 years age group shows no infection in both genders could be due to study being conducted among the cataract patients majority of whom are middle to old age.Doctors in surgical practice are at high risk of acquiring blood borne diseases from the patients on

whom they operate[12] .Especially HIVinfected individuals have an increased risk of cataract surgery [13].
This study also explains

- The importance of mass vaccination of the health workers for hepatitis B[16].
- Importance of setting up of extra protocol for this health hazardous cases.

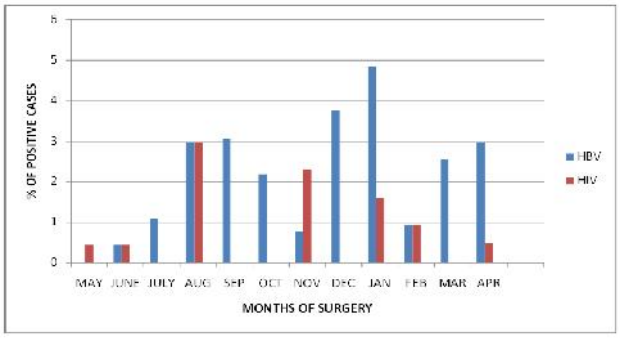

Fig 1-Prevalence (%) of Hepatitis B and HIV according to Months

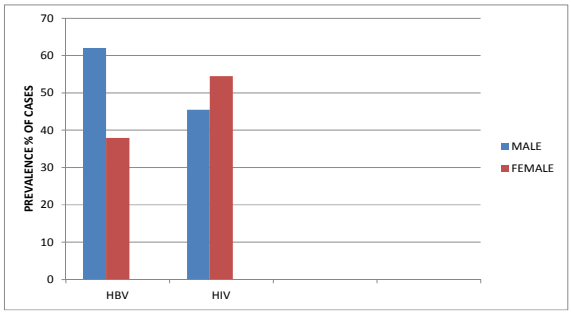

Fig2- Prevalence(%) of HBV and HIV in male and female undergoing elective eye surgery during the year may 2014-april 2015

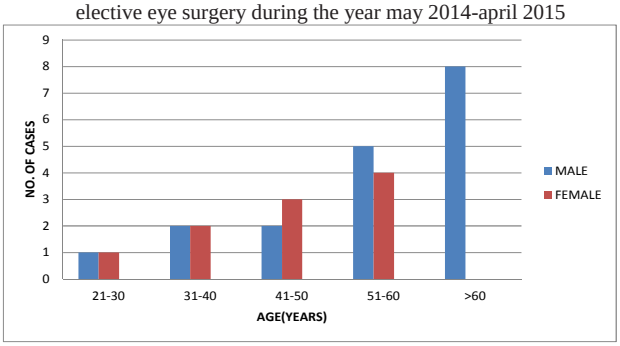

Fig 3 Prevalence of HBV in male and female undergoing elective eye surgery during the year May 2014-April 2015 according to age

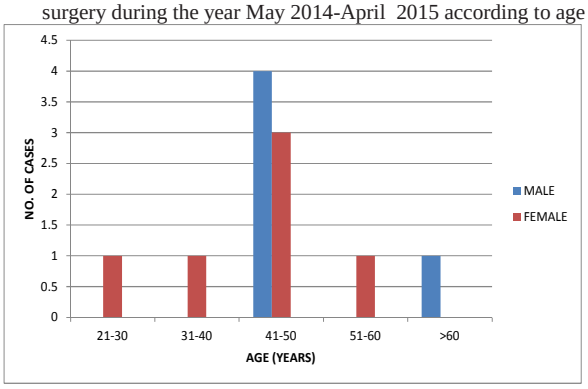

Fig 4 Prevalence of HIV in male and female undergoing elective eye surgery during the year May 2014-April 2015 according to age

CONCLUSION

The high prevalence of HBsAg and HIV in the eye patients presenting for cataract surgery provides evidence for routine preoperative screening of all patients for surgery. Need for mass immunization against hepatitis B, and awareness regarding hepatitis B and HIV should be promoted among doctors, paramedical staff and general public. Periodic screening is to be made mandatory to detect latent cases of seropositivity to reduce the occupational hazard of health care professionals. Strict preventive measures and an intensive pre-cautionary environment, promoting mandatory screening of preoperative patient for HBV and HIV viruses is essential to prevent the spread. It is important to educate the patients and to encourage them for screening or other medical treatments to ensure minimal risk of transmission, spread and onset of these diseases. Many of the free cataract surgical camps. were not screening routinely for HIV and HBsAg, since majority of carriers are asymptomatic, they pose a real threat to health staff. This study emphasizes importance of routine preoperative screening for HIV and HBsAg for patients undergoing cataract surgery.

References

1. American academy of orthopaedic surgeon&American association of orthopaedic surgeons(Advisory Statement)document no 1028 last modified on 2002.
2. Aziz S, Khanani R, Noorulain W, Rajper J. Frequency of hepatitis B and C in rural and periurban Sindh. J Pak Med Assoc. 2010 Oct;60(10):853-7.
3. CDC. Immunization of Health care personnel: Recommendations of the advisory committee on Immunization practices (ACIP). MMWR, 2011; 60 (RR-7).
4. Frequency of hepatitis b and hepatitis c among cataract patients Iftikhar Ahmad, Sardar Bahadur Khan2, Hafeez-ur-Rehman3, Muhammad Hussain Khan1, Saeed Anwar1Gomal Journal of Medical Sciences July–Dec 2006, Vol. 4, No. 2. 61.
5. Hauri AM,Armstrong GL,Hutin Yj.The global burden of disease attributable to contaminated injection given in health care settings. international J of STD AIDS.2014;15:7-16
6. Hepatitis B Fact sheet no 204.Geneva, World Health Organisation,`2000.
7. Hepatitis C Fact Sheet No. 164 Geneva, World Health Organisation, 2000.
8. Kakepoto GN, Bhally HS ,Khaliq G *et al*. Epidemiology of blood borne viruses: Astudy of healthy blood donors in southern pakisthan. Theast asian J Trop ,Med public health. 1996;27:703-6.
9. Lone DS, Aman S, Aslam M. Prevalence of hepatitis C virus antibody in blood donors of Lahore. Biomedica 1999; 15: 103-7.
10. Mashud I, Khan H, Khattak AM. Relative frequency of Hepatitis B and C viruses in patients with Hepatic Cirrhosis at DHQ Teaching Hospital DI Khan. J Ayub Med CollAbottabad Mar 2004;16: 32-4.

11. Mujeeb SA,Mehmood K,Prevalence of HBV,HCV and HIV infections among family blood donors.Annals of Saudi Med.1996;16.
12. Mujeeb SA,Mehmood K.prevalence of HBV,HCV and HIV infections among family blood donors. Annals of Saudi med.1996;16:
13. National programme for control of Blindness. Quality aspects of cataract operations 2011. Available from npcb.nic.in/writereaddata/mainlinkfile/File 243.pdf.
14. Rasmussen LD *et al* .Risk of cataract surgery in HIV-infected individuals: a Danish Nationwide Population-based cohort study. Clin Infect Dis. 2011 Dec;53(11):1156-63.
15. Veeken H,Verbeek J, Houweling H, Cobelens F. Occcupational HIV infection and Health care workers in the tropics. Trop Doc. 1991;21:28-31.
16. WHO/UNICEF/UNAIDS (2011) "Global HIV/AIDS response: Epidemic update and health sector progress towards universal access".

How to cite this article:
Y.Venkataiah *et al*., Importance Of Screening For HBSAG & HIV In Cataract Surgery Cases. *International Journal of Recent Scientific Vol. 6, Issue, 7, pp.5268-5271, July, 2015*

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