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FREQUENCY OF HEPATITIS-B AND C IN PATIENTS UNDERGOING CATARACT SURGERY IN A TERTIARY CARE HOSPITAL, DERA GHAZI KHAN

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Abstract:

Objective: *To determine the frequency of hepatitis B and C in patients undergoing elective cataract surgery.*

Study design*: A descriptive study.*

Place of study: *Ophthalmology Department, Teaching Hospital Dera Ghazi Khan.*

Duration of study: *From 1st February 2017 to 30th September 2017.*

Methodology*: All patients admitted for elective cataract surgery were included in the study. Screening was done for hepatitis B and C and findings were recorded. Hepatitis positive cases were identified and demographic data was collected on structured compilation sheets and analysis done.*

Results: *A total of 889 patients were included in study. Overall, 52(5.85%) cases were positive for viral hepatitis B and C infection. 18(2.03%) were positive for hepatitis B and 34(3.82%) were positive for hepatitis C. 24 out of 52 cases (46.15%) were from rural areas and 28 out of 52 cases (53.85%) were from urban population.*

Conclusion: *A significant number of hepatitis B and C positive cases were seen in patients admitted for elective cataract surgery. It is highly recommended that screening of preoperative cases of cataract surgery should be done so that even asymptomatic patients should pose no more threat to the spread of the disease.*

Key Words: *Hepatitis B, Hepatitis C, Cataract surgery.*

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INTRODUCTION:

Liver is one of the most vital organs of the body with various metabolic functions. It is also affected by various diseases which may be acute and chronic. Most common of these are viral infections mainly hepatitis B and C. [1] Acute infections lead to swelling and inflammation which results in liver dysfunction. All the same, its chronic infections result in cirrhosis of liver and hepatocellular carcinoma. [2] Hepatitis may also be caused by alcohol poisoning and auto-immunity. [3] Hepatocellular carcinomas is the third leading cause of cancer associated death all over world. [4-6] These infections are acquired by blood, semen, vaginal and other body fluids. Most common risk factors for transmission are blood transfusion, re-use of syringes, body tattooing and piercing, drug abusers using common syringes and use of poorly or unsterilized medical and dental instruments.[7-9] Cataract are changes in the transparent nature of lens which leads to opacification and degrade the visual quality gradually.[10] Risk factors include prolonged exposure to ultraviolet light, exposure to radiation, secondary effects of certain diseases like diabetes and a lot more.

Except some preventive measures there is no non-surgical intervention and cataract surgery is the only option. [11] Surgery can be performed at any developmental level of cataract but due to some risks most surgeons wait until there is some change in vision. [12] Medical and paramedical staff can be at risk of exposure to hepatitis infections during surgeries. Also disease can also be attributed during various OPD procedures which include biometry, tonometry, syringing and OT procedures like during anesthesia, handling of sharp instruments and disposing of biomedical waste. [13] The number of silent carrier of hepatitis infection is still not clear in Pakistan. As it is well established fact that health care workers are at risk of occupational exposure to such infections, the study was conducted to determine the frequency of hepatitis B and C patients among preoperative cataract cases.

METHODOLOGY:

After approval from Ethical Committee, the descriptive study was performed at Ophthalmology Department, Teaching Hospital Dera Ghazi Khan. All the patients admitted in ward for cataract surgery were included in the study. Patients were assured about confidentiality of their information. The purpose of study was explained briefly and informed consent was taken from all the patients. Demographic data age, sex and address etc was collected. Study started on 1st February 2017 and was continued was a set period of eight months up to 30th September 2017. All preoperative cases admitted for cataract surgery were screened by using rapid chromatography immunoassay for quality detection of surface antigen of hepatitis B and antibodies for hepatitis C. Positive cases were confirmed by using Enzyme Linked Immunosorbent Assay (ELIZA) method. The data collected was recorded on Performa's and later analyzed through use of statistical tools of analysis.

RESULTS:

In this study a total of 889 cases were included, in which 434 were male and 455 were female patients which makes male to female ratio of 1:1.05.

Table 1: Overall Prevalence of Hepatitis Patients

Hepatitis status	Number of patients	%
Hepatitis positive patients	52	5.85%
Hepatitis negative patients	837	94.15%
Total patients	889	100%

The overall prevalence of hepatitis B and hepatitis C in preoperative cases of cataract surgery is 5.85% (52/889), with hepatitis C having a higher prevalence of 3.82% (34/889) in comparison to hepatitis B prevalence of 2.03% (18/889).

Table 2: Prevalence of Hepatitis B and C Patients.

HEPATITIS	POSITIVE	NEGATIVE	TOTAL	%
Hepatitis B	18	871	899	2.03%
Hepatitis C	34	855	899	3.82%

Among 34/52(65.38%) hepatitis C patients 11/34(32.35%) were males and 23/34(67.65%) were females. Similarly, among 18/52(34.62%) hepatitis B patients 9(50%) were males and 9(50%) were females.

Table 3: Male/Female Distribution of Hepatitis B and C Cases

Gender	No disease	Hepatitis B cases	Hepatitis C cases	Total
Male	414(95.39%)	9(2.07%)	11(2.54%)	434(100%)
Female	423(92.97%)	9(1.98%)	23(5.05%)	455(100%)
Overall	837(94.15%)	18(2.03%)	34(3.82%)	889(100%)

Overall among 52 hepatitis patients, 11/52(21.15%) were male hepatitis C patients, 23/52(44.23%) were female hepatitis C patients, 9/52(17.31%) were male hepatitis B patients and 9/52(17.31%) were female hepatitis B patients. Majority 28/52(53.85%) cases belonged to urban areas while 24/52(46.15%) cases belonged to rural areas. Mean age of hepatitis patients in our study was 58.12 years.

Rural/Urban cases	number of cases	Angle of circle	Cummulative angle
Rural cases	24	24/52×360=166.15°	166.15°
Urban cases	28	28/52×360=193.85°	360°
Total	52	360°	360°

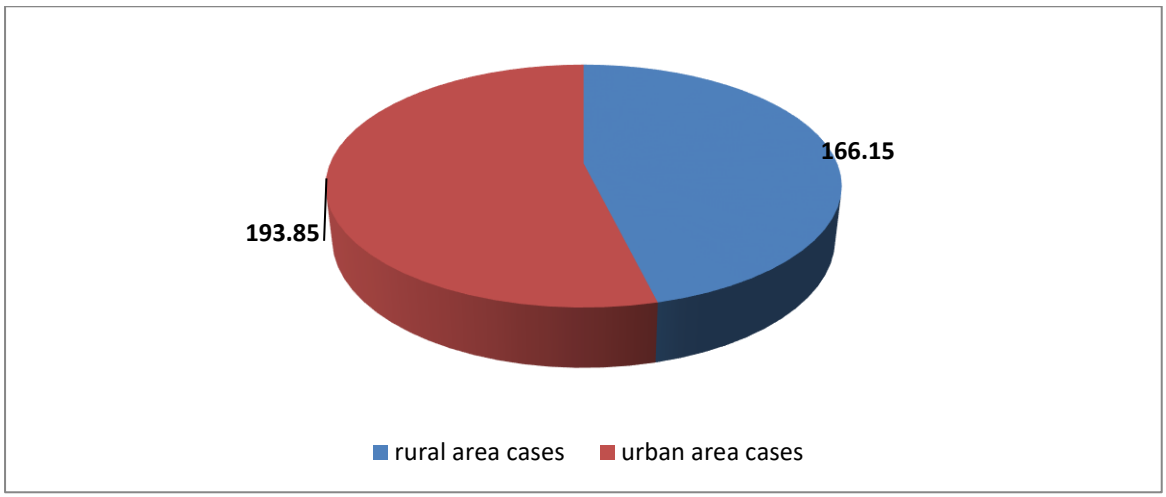

Fig1: Urban/Rural cases distribution of hepatitis positive patients (n=52)

Overall among 52 cases, 20/52(38.46%) are male patients whereas 32/52(61.54%) are female patients.

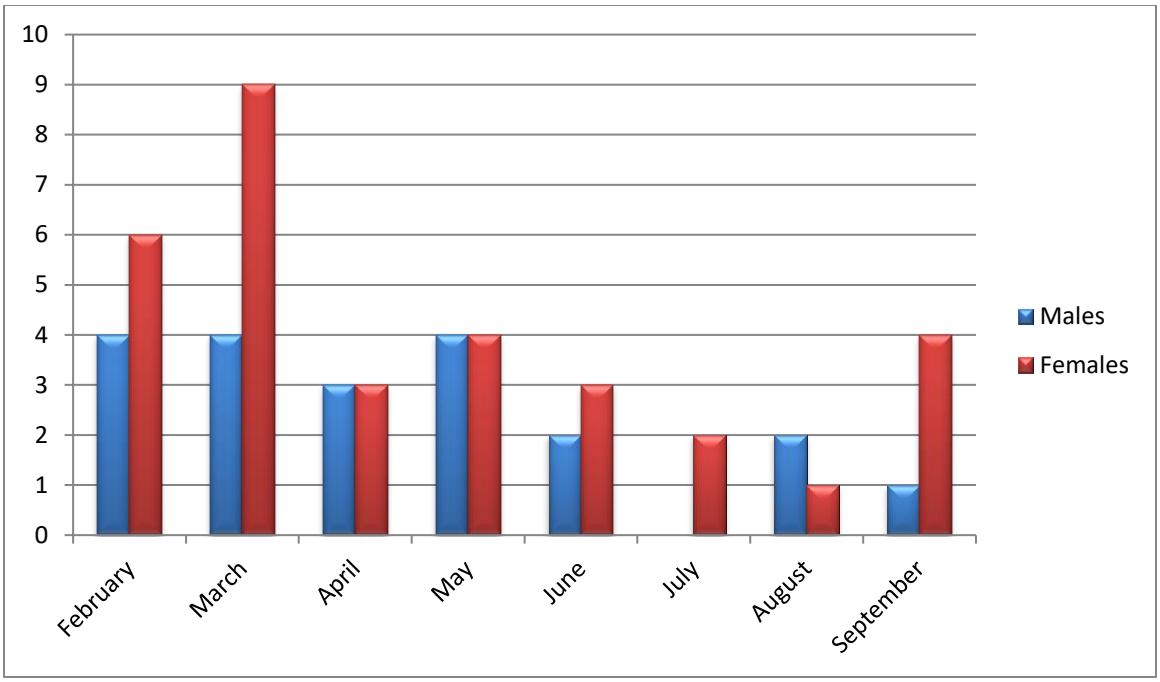

Fig 2: Number of hepatitis cases(male/female) undergoing cataract surgery during the month, from Feb 2017 to Sept 2017.

Out of 52 cases, 18/52(34.62%) are hepatitis B patients whereas 34/52(65.38%) are hepatitis C patients.

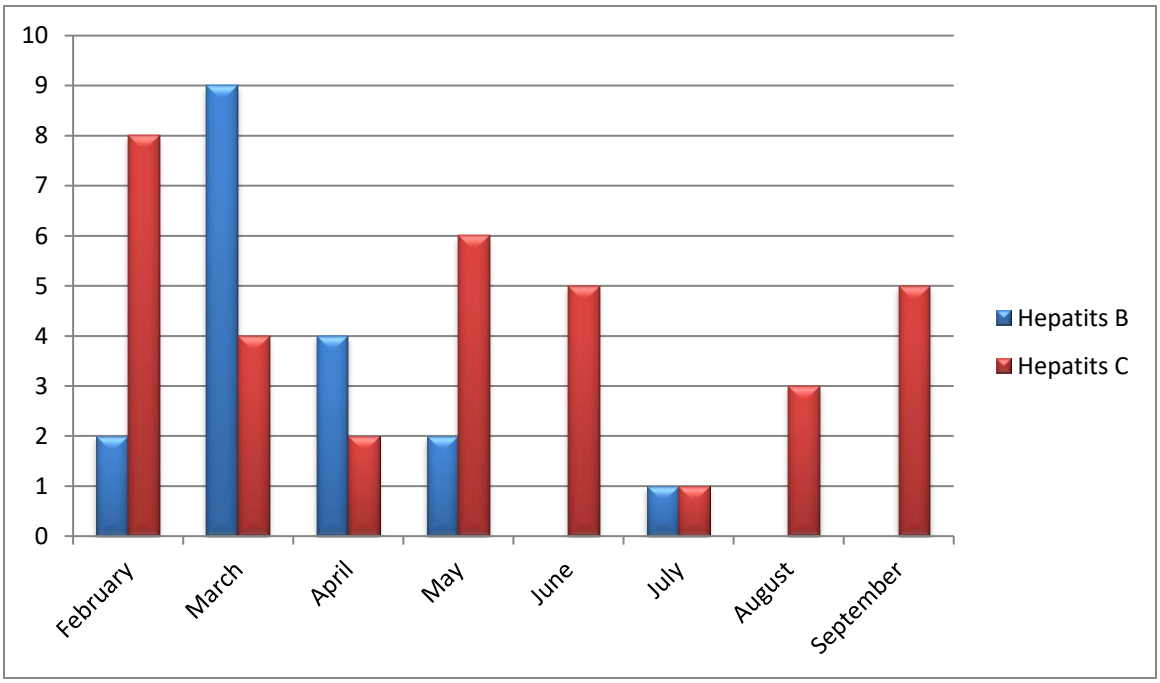

Fig 3: Number of hepatitis cases (hepatitis B/C) undergoing cataract surgery during the month, from Feb 2017 to Sept 2017.

DISCUSSION:

The prevalence of hepatitis B and C have raised up to an alarmingly high level. Although the overall prevalence in Pakistan is still not determined because most of the studies are limited to a particular area and also focus usually on a small group of people. [14] In our study, 2.03% patients have hepatitis B and 3.82% have hepatitis C. These figures are comparatively lower than the study conducted at Gadap area by Ali and his associates. According to their study 5.1% patients suffer from hepatitis C. Carrier state of Hep BsAg is about 10% in different parts of Pakistan.[14] In a study conducted by Sheikh and his colleagues, carrier state of hepatitis was found to be 2.8%.[15] It is comparable to our study with prevalence of 2.03% for hepatitis B. Prevalence of hepatitis B is also comparable with study conducted at Jinnah Post Graduate Medical Institute with prevalence of 2.62% while hepatitis C prevalence of 6.17% is comparatively greater than our study.[16]

The overall prevalence of hepatitis in our study is 5.85%. The results are very much similar to the figures given by Iftikhar e al which is 5.75%. [17] Another study conducted in Karachi shows prevalence of hepatitis to be 12.99%.[11] It is much greater than our study. It may be due to fact that Karachi study included rural areas of Sindh and Baluchistan in addition to periphery of Karachi covering a larger portion of rural population as compared to urban population limited to Karachi city only. Our study was limited to Dera Ghazi Khan and its periphery. Geographical difference may also be reason for such variation.

Hepatitis B and C prevalence in preoperative cataract patients was found to be higher in females 61.54% (32/52) then males 38.46% (20/52). These results are very close to the figures determined by a research, conducted in various eye-camps of Pakistan, where 108/437 patients were infected with higher prevalence of disease in females with 60.18%(65/108) than males with 39.81%(43/108).[18] In various other studies carried out in different parts of the country similar findings and results were noted where females predominate males.[16, 19-21] It may be due to fact that now health care facilities are accessible and easily available, hence more and more women are found to be availing these facilities. Some other researchers also contradict our results with males having a higher prevalence than females. [11, 22-25]

In our study 53.85%(28/52) cases belonged to urban areas and 46.15%(24/52) belonged to rural areas. It shows prevalence of hepatitis is significant in rural areas as well as urban areas. The prevalence is increasingly continuously and it is estimated that actual number of cases in rural areas are significant higher than those reported. [26, 27]

Mean age of hepatitis positive patient in our study is 58.12 years. This is very much same to the mean age of 63 years in another research. [16] It is much higher than mean age in other studies that is 33.3±13.34 years [21] and 35.58±13.39 years [1]. It may be due to low literacy rate in our region with people presenting late for cataract surgery once it has affected their vision. It has been reported that viruses are transmitted in health care settings from patients to health care workers, health workers to patients and patients to patients. All patients should be encouraged to participate in routine and voluntary viral marking. If there is preoperative detection of the blood borne pathogens, special steps can be taken to prevent the transmission of the disease, resulting in better management of patients and proper provision of health care services.

There were certain limitations to our study as well. Descriptive history related to high risk exposure, any previous blood transfusion, surgeries, sexual activities, body piercing and tattooing was not taken. These points would have definitely affected the outcomes of the research. Also the research was limited to patients admitted for cataract surgery in Ophthalmology Department of one teaching hospital. Multi-center studies with much longer duration would be better.

CONCLUSION:

Significant rate of hepatitis cases in preoperative cataract patients strongly recommends that screening of all patients admitted in ward should be done. Awareness among health care workers to carry out the screening is essential for the safety of patient himself, other patients in wards and operating surgeon along with his team. The results also emphasize the importance of vaccination of health workers against hepatitis B and also use of extra precautionary measures during operating such patients. We expect that this study will prove a stepping stone to practice routine preoperative screening of hepatitis B and C in ward patients admitted for cataract surgery.

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