

Screening for Hepatitis B & C in a surgical ward

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ABSTRACT

Objective: To find out the seroprevalence of HBsAg and Anti-HCV and evaluation of the risk factors

Design: Prospective descriptive study

Setting: West Surgical Ward, Mayo Hospital, Lahore

Duration: 1st Jan 2011 to 31st Dec 2011

Patients: Patients of either sex more than 13 years of age undergoing elective surgery

Methodology: Screening for HBsAg and AntiHCV was done in all the patients with Enzyme Linked Immunosorbent Assay (ELISA) in the preoperative period. The information was recorded on a pre designed proforma which included the current and previous hepatitis profile, risk factors, history of vaccination along with the demographic data.

Results: A total number of 1185 patients underwent elective surgery during the study period. There were a total of 580 (48.9%) males and 605 (51.1%) females. 35 patients (2.9%) were found to be HBsAg positive, 170 patients (14.3%) were found to be Anti HCV positive while none were found to be both HBsAg and AntiHCV positive.

Conclusion: The number of patients suffering from Hepatitis B and C is very high. Screening for HBsAg and AntiHCV should be a mandatory investigation in all the patients undergoing surgery.

Key words: Hepatitis B, Hepatitis C, Surgery

INTRODUCTION

Viral hepatitis is one of the major health problems around the world. Both Hepatitis B and C are one of the common causes of chronic liver disease and liver failure. Acute phase of both the diseases present with malaise, anorexia, fever, abdominal pain mostly in the right hypochondrium and epigastrium and jaundice. Chronic disease leads to complications like oesophageal varices, ascites, hepatic encephalopathy and finally malignancy.

Hepatitis B was first isolated in 1963¹ while Hepatitis C was first cloned on 1989^{2,3}. Nearly more than 600 million people are estimated to be infected with Hepatitis C around the world⁴. Both Hepatitis B and Hepatitis C are commonly transmitted through contaminated blood and as little as 0.01ml can transmit infection⁵.

Fortunately vaccination is available for Hepatitis B which is an important part of the immunization schedule all over the world and it's because of this that the incidence of Hepatitis B is showing a decreasing trend. Aim of the study was to evaluate the extent of the disease in the hospitalized surgical patients and to evaluate the risk factors involved.

PATIENTS AND METHODS:

The study was conducted from 1st January 2011 to 31st December 2011 in the West Surgical Ward of Mayo Hospital Lahore. All the patients admitted for elective surgery were included in the study. Patients

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below the age of 13 years and those who presented in the accident and emergency were excluded from the study. In the pre operative period all the patients were screened with ELISA for HBsAg and AntiHCV. All the patients were questioned about the symptoms of the disease, risk factors and history of vaccination. All this information along with the demographic data was recorded on a specially designed proforma.

RESULTS

A total number of 1185 patients were screened during the study which included 580 males (48.9%) and 605 females (51.1%). A total number of 205 patients (17.3%) were found to be Hepatitis B or C positive, out of which 35 patients (3%) were Hepatitis B positive and 170 patients (14%) were found to be Hepatitis C positive. 80% of the total Hepatitis B positive patients and 69% of the total Hepatitis C positive patients were below the age of 40 years.

Out of the 35 Hepatitis B positive patients, 25(71.4%) were males and 10(28.6%) were females while out of the 170 Hepatitis C positive patients 90(52.9%) were males and 80(47.1) were females. Out of the total 980 negative patients 465(47.4%) were males and 515(52.5%) were females.

Out of the positive patients, either Hepatitis B or C, majority of the patients had more than 2 risk factors and gave history of hospitalization, previous surgery, blood transfusion and dental procedure. All the patients in the study were asked about their vaccination status but surprisingly only 11 patients (0.92%) had vaccination against hepatitis B. Majority of the patients were simply unaware of the vaccination.

ORIGINAL ARTICLE

Figure 1: Patients in the study on the basis of age groups

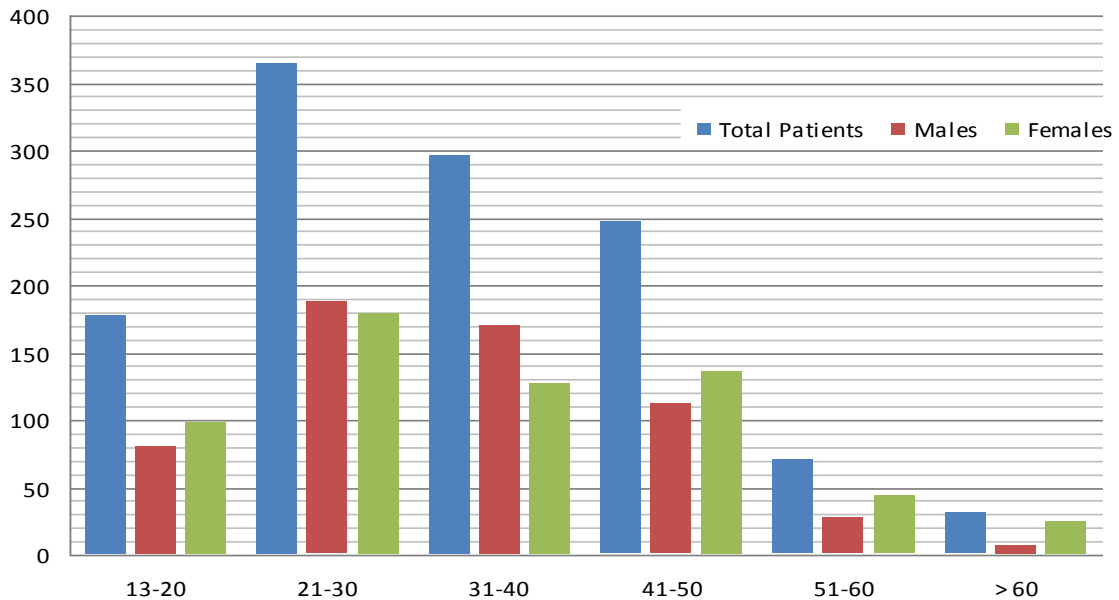


Table 1: Hepatitis B and C positive patients in the study on the basis of age groups

Age group in years	Total			Hepatitis B Positive			Hepatitis C Positive		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
13-20	80	97	177	7	3	10	10	6	17
21-30	187	178	365	8	4	12	22	21	43
31-40	169	127	296	4	2	6	31	27	58
41-50	111	136	247	4	0	4	18	20	38
51-60	27	43	70	2	1	3	9	6	15
>60 years	6	24	30	0	0	0	0	0	0

Table 2: Seroprevalence of HBsAg and AntiHCV (n=1185)

	Male	Female	Total
HBsAg +ve	25(71%)	10(29%)	35(3%)
Anti HCV +ve	90(53%)	80(47%)	170(14%)
HBsAg and AntiHCV +ve	0	0	0
HbsAg and AntiHCV -ve	465(47%)	515(53%)	980(83%)

Table 3: Risk factors evaluation

Risk factors	HBsAg +ve	AntiHCV +ve	HBsAg and AntiHCV -ve
History of hospitalization	24	111	239
History of surgery	19	98	184
History of blood transfusion	14	83	135
History of drug abuse	5	9	26
History of dental procedure	29	63	206
History of tattooing	0	0	4
History of ear/nose piercing	5	81	507
History of jaundice	4	26	77
Vaccination against hepatitis b	0	1	10

DISCUSSION

Hepatitis B and C appear to be endemic in most parts of the world especially in the underdeveloped countries^{6,7}. Many studies have been conducted in Pakistan during the past few years and a number of guidelines in order to control and prevent the spread of disease have been formulated but the number of the patients affected by the disease is still on the rise.

In our study the prevalence of HBsAg and AntiHCV in the surgical patients was 2.95% and 14.34% respectively. In a study Zubia Masood et al⁸ carried out in Karachi showed the prevalence of HBsAg and AntiHCV to be 6.45% and 11.3% respectively. These are comparable to our study. In a study conducted in Japan⁹ showed the prevalence of Hepatitis B and Hepatitis C virus seropositivity was found to be 1.8% and 7.1% respectively while another study from Turkey¹⁰ showed HBsAg positive to be 6.6%.

In our study male and female Hepatitis C infected patients were nearly in equal proportion, with the highest percentage in the third and fourth decade of life which is in accordance with the study conducted by Meri et al in Greece¹¹.

Both Hepatitis B and C virus transmission is mainly through the blood, blood products, contaminated needles and equipment. In our study history of previous surgical history was present in 54.2% and 58% of the Hepatitis B and Hepatitis C positive patients respectively. Similarly history of blood transfusion was present in 41% of the Hepatitis B positive patients and 49% of the Hepatitis C positive patients. Both the above mentioned statistics are much higher than 0.01-0.02% reported from UK and Europe¹².

Contaminated needles and instruments can transmit infection even after months. Infectivity of Hepatitis B virus is eight times greater than HIV¹³. An average risk of Hepatitis C virus transmission after needle stick injury is about 1.8%¹⁴. In our study 84% of the Hepatitis B positive patients and 37% of the Hepatitis C positive patients gave the history of dental procedure.

Previous hospitalization was present in 68.6% of the Hepatitis B positive and 65.3% of the Hepatitis C positive patients. The male population (71%) had a slightly higher incidence in our study which is comparable with the study conducted in Greece by Meri et al¹¹.

RECOMMENDATIONS

On the basis of this study we recommend the following to reduce the incidence of Hepatitis B & C.

1. All the hospitalized patients should be screened for Hepatitis B and Hepatitis C.

2. All the doctors, nurses and health care providers should be vaccinated and their antibody status should be checked on a regular basis.
3. Only properly screened blood should be transfused.
4. All the instruments whether to be used by the surgeon or dentist should be properly sterilized.
5. Syringes should be discarded properly.
6. Public awareness campaigns should be carried out about the disease.
7. EPI programme should be improved because according to our study only 0.92% patients screened had vaccination against Hepatitis B which is a severe dilemma and needs serious attention.

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