

Hepatitis B, Hepatitis C and Their Underlying Preceding Factors

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Abstract

A cross sectional study was conducted in Services Hospital OPD, Lahore May to July 2017. Multiple Questions were asked to the patients having positive history of hepatitis to study the ratio of population affected by hepatitis B & C and to rule out the major causes of hepatitis.

In Pakistan, the cases of hepatitis are increasing day by day. This is attributed to mainly illiteracy, unawareness about hygiene and use of unsterilized syringes.

Objective: To explore the underlying causes and take precautionary measures to control the spread of disease.

Methodology: A Sample of around 50 Hepatitis patients visiting Services Hospital OPD were randomly selected and information gathered through filling of structured questionnaire to access gap in knowledge and practice regarding self-care in hepatitis B & C among both Male and Female and socioeconomic factors contributing to hepatitis prone lifestyle.

Results: A Study was carried out among Hepatitis patients in Services Hospital OPD, Lahore. Total 50 randomly selected patients (16 Male, 26 Female) were inducted in the study with age above equal or less than 50. Out of the 43 patients interviewed, 76.2% were above the age of 40 years. 61.9% were females, while 38.1% were males. The socioeconomic status was good (Income per Capita >3000 in 88.1%. Percentage of exposure prior to diagnosis was 9.5% within 6 months and 90.5% for more than 6 months.

Conclusion: A Study revealed that the ratio of occurrence of Hepatitis B & C awareness in that area is not satisfactory. People who were aware of this viral infection were not aware of its underlying factors and were constantly using those methods to spread the disease. Hence the null hypothesis was proved to be corrected.

Keywords

Hepatitis B; Hepatitis C; Prevention; Causes; Control

Introduction

Hepatitis B and Hepatitis C have been one of the most endemic diseases of last two decades. By rough estimation around 8 people suffer from this disease out of 100 people. In Pakistan, different researches have shown prevalence among

different groups with varying degree of exposure to various risk factors. Hepatitis C has affected around 200 million people worldwide, out of which around 10 million are in Pakistan. Hepatitis B also has major prevalence in Pakistan with around 9 million diseased individuals. Researches occurring between 2010 and 2015 interpreted that HCV sero prevalence among the Pakistani population is 6.8%, while active HCV infection was found in approximately 6% of the population. These researches also showed that extremely high HCV prevalence in rural and underdeveloped peri-urban areas (up to 25%). The prevalence of Hepatitis B Surface Antigen (HBs Ag) and antibodies to hepatitis C virus (anti- HCV) in young healthy Pakistani adults in recent studies carried out in different cross sections of population has ranged 2.56 - 3.53% and 2.3 - 5.3%.

Literature for data on HBsAg and anti-HCV-Ab prevalence and screening of the general population and five subgroups, and used data for people who inject drugs (PWID) and blood donors from two European organizations. Of 1759 and 468 papers found in the prevalence respectively HBsAg and anti-HCV-Ab prevalence in the general population ranged from 0.1%-5.6% and 0.4%-5.2% respectively, by country. For PWID, men who have sex with men and migrants, the prevalence of HBsAg and anti-HCV-Ab was higher than the prevalence in the general population in all but 3 countries [1]. The prevalence of HCV in the general population in Africa ranges between 0.1% and 17.5%, depending on the country. The countries with the highest prevalence include Egypt (17.5%), Cameroon (13.8%) and Burundi (11.3%). The countries with the lowest prevalence include Zambia, Kenya, Malawi and South Africa (all with a prevalence <1%). High risk populations include: Intravenous drug users; HIV-infected; patients on hemodialysis; patients with history of blood transfusions or organ transplantation; health care workers after needle stick injuries; children born to HCV infected mothers. Also, sexually active adults with multiple partners have higher prevalence rates. Available data on HCV reveal high prevalence in patients with hepatocellular carcinoma or chronic liver disease: (Burundi; 55%, Rwanda; 45.7%) and sexually transmitted diseases (Ethiopia; 38.2%). Countries with low HCV prevalence in high-risk groups include Zimbabwe (1.3%) and Kenya (1.7%) [2].

To assess the prevalence of HBV and HCV among blood donors, PWID and migrants, alternative sources for data were used. These sources were the latest Council of Europe report on national blood donor data, data from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) database and an ECDC systematic review entitled 'Epidemiological assessment of hepatitis B and C among migrants in the EU/EEA'. For HBV, estimates that were considered representative for the general population in the risk of bias assessment were available for 13 countries, where the prevalence ranged from 0.1% in Ireland to 4.4% in Romania. For HCV, prevalence estimates that were considered representative for the general population were available for 13 countries, with the reported prevalence ranging from 0.1% (Belgium, Ireland and the Netherlands) to 5.9% (Italy) [3].

Epidemiological manifestations of hepatitis C virus genotypes and its association with potential risk factors among Libyan patients.

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Off the total patients studied, four different genotypes were reported, including genotypes 1, 2, 3, and 4. Genotype4 was the commonest (35.7%), followed by genotype1 (32.6%). According to subtypes 28% were unclassified genotype 4, 14.6% were genotype 1b and some patients infected with more than one subtype (2.3% genotype 4c/d, 1% genotype 2a/c). Genotypes 1 was the commonest among males, while genotype 4 among females. According to the risk factors studied, Genotype1 and genotype 4 were found with most of the risk factors. Though they were particularly evident surgical intervention, dental procedures and blood transfusion while genotype 1 was only followed by genotype 3 mainly which mainly associated with certain risk groups such as intravenous drug abusers [4].

Seroprevalence of hepatitis B, hepatitis C and HIV in ICU patients. The records of 462 patients admitted to our ICU were reviewed. The results of 36 patients could not be reached, so 426 patients were evaluated in the study. Among 426 patients, 169 (39.7%) were female and 257 (60.3%) were male. The mean age was 63.7 ± 18.7. HBsAg was positive in nine (2.1%) patients; all of these nine were male. Anti-HCV was positive in four (0.9%) patients; among these, three were male and one was female. Only one patient was positive for anti-HIV [5].

Objectives

- 1) To understand the Prevalence of hepatitis B and C in Pakistan.
- 2) To investigate socioeconomic factors that is responsible for hepatitis B & C.
- 3) To know behavior and practices of patients regarding transmission of hepatitis B and C.

Hypothesis

Null hypothesis: The behavior and socioeconomic factors have no association with occurrence of disease.

Alternative: The behavior and socioeconomic factors have association with occurrence of disease.

Methodology

Material and methods

Setting: Services Hospital Lahore.

Design: Descriptive cross-sectional studies.

Duration: 6 months

Universe: All diagnosed patients of Hepatitis B & C, visiting OPD.

Variables

Predictor Variables: Age, Sex, Income, Level of education, Life style, Poor lifestyle, Inaccessibility to health care facilities, shared needles, born to case/carrier, tattoo, acupuncture, piercing.

Outcome Variables: Hepatitis B & C.

Operational Definition: diagnosed cases by doctors visiting OPD for treatment.

Study subjects

Inclusion: All hepatitis B & C patients visiting OPD.

Exclusion: co morbidity.

Sample size: 42 hepatitis patients presenting in OPD.

Sample technique: Convenient sampling (Non-probability)

Tools of measurements: Questionnaire (open and close ended structure questionnaire)

Analysis

Frequency, percentages, means and standard deviation were calculated for Continues numerical data. Proportions were found for categorical data. Chi-square test was applied for testing the significance of association (Tables 1,2) Figure 1.

Results

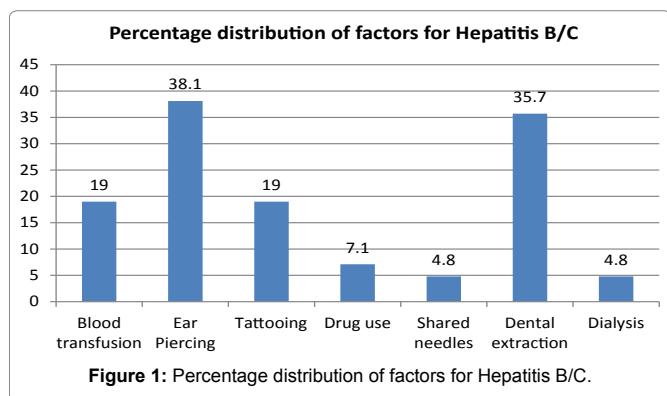
A cross sectional study was done including cases of hepatitis B & C infections on the basis of consent from patients presenting in the outdoor clinic. The patients were interviewed using a pre-formed questionnaire. The data was compiled and was analyzed by the

Table 1: Frequency, percentages, means and standard deviation were calculated for continues numerical data.

| Variables | Frequency | Percent |
|---|-----------|---------|
| Gender | | |
| Male | 16 | 38.1 |
| Female | 26 | 61.9 |
| Age | | |
| <=40 | 10 | 23.8 |
| >40 | 32 | 76.2 |
| Education of respondent | | |
| Literate | 32 | 76.2 |
| Illiterate | 10 | 23.8 |
| Education of spouse | | |
| Illiterate | 35 | 83.3 |
| Under Matric | 7 | 16.7 |
| Total family member | | |
| <=5 | 10 | 23.8 |
| >5 | 32 | 76.2 |
| Income per capita per month | | |
| <=3000 | 5 | 11.9 |
| >3000 | 37 | 88.1 |
| Hepatitis B/C diagnosed when | | |
| <=10 years | 39 | 92.9 |
| > 10 years | 3 | 7.1 |
| Going to quakes | | |
| Yes | 9 | 21.4 |
| No | 33 | 78.6 |
| Blood transfusion | | |
| Yes | 8 | 19.0 |
| No | 34 | 81.0 |
| Ear Piercing | | |
| Yes | 16 | 38.1 |
| No | 26 | 61.9 |
| Tattooing | | |
| Yes | 8 | 19.0 |
| No | 34 | 81.0 |
| Extramarital relations | | |
| No | 42 | 100.0 |
| Homosexual multiple sex partners | | |
| No | 42 | 100.0 |

Table 2: Frequency, percentages, means and standard deviation were calculated for Continues numerical data.

| Variables | Frequency | Percent |
|--|-----------|---------|
| Drug use | | |
| Yes | 3 | 7.1 |
| No | 39 | 92.9 |
| Shared needles | | |
| Yes | 2 | 4.8 |
| No | 40 | 95.2 |
| Dental extraction | | |
| Yes | 15 | 35.7 |
| No | 27 | 64.3 |
| Organ tissue transplantation | | |
| Yes | 7 | 16.7 |
| No | 35 | 83.3 |
| Dialysis | | |
| Yes | 2 | 4.8 |
| No | 40 | 95.2 |
| Occupational exposure | | |
| Yes | 4 | 9.5 |
| No | 38 | 90.5 |
| Treatment taken from whom | | |
| Doctor | 41 | 97.6 |
| Hakeem | 1 | 2.4 |
| Partner had hepatitis B vaccination | | |
| Yes | 4 | 9.5 |
| No | 38 | 90.5 |
| Vaccinate against Hepatitis B | | |
| Yes | 5 | 11.9 |
| No | 37 | 88.1 |
| counseling session for prevention of spreading of hepatitis | | |
| Yes | 6 | 14.3 |
| No | 36 | 85.7 |
| Ever had Kushta/Steroids | | |
| Yes | 1 | 2.4 |
| No | 41 | 97.6 |
| History of taking anti tuberculosis | | |
| Yes | 4 | 9.5 |
| No | 38 | 90.5 |
| Ever had long term intake of steroids | | |
| Yes | 2 | 4.8 |
| No | 40 | 95.2 |



calculation of frequency, presentation, means and standard deviation of the variable. Proper times were found for categorical data. Chi-square chart was applied to test the significance of association.

Out of the 50 patients interviewed, 76.2% were above the age of 40 years. 61.9% were females while 38.1% were males; the data collected shows female's preponderance. The socioeconomic status was analyzed and the income per capita was >3000 in 88.1 % and <3000 in 11, 9%. 76.2% were literate. Total family member was >5 in 76.2%. The duration of illness after provisional diagnosis was > 10 in 7.1 %while it was <10 years in 92.9% of the patients. Blood transfusion was the cause of infection in 19.1% of the patients. Ear piercing cause hepatitis 38.1% patients and tattooing caused hepatitis in 19% patients. 100% of the patients were not having extramarital sex partners.

According to the data collected the underlying factors of the hepatitis like needle sharing caused hepatitis in 4.8 % of the patients, dental extraction in 37.7%, organ tissue transplantation in 16.7%, dialysis in 4.8%, drug intake in 7.1% and occupational exposure in 9.5% of the patients. Reasons for the development of hepatitis were lack of hepatitis B vaccination in 88%, lack of the fitness in 90.5%, lack of counseling session for invention of spread of hepatitis in 85.7%. 97.6% of the patients sought to be treated by doctor.

Most of the P-value was significant.

Discussion

The data was collected on the basis of a simple questionnaire. According to the analysis data in this study, there was 92.1 % HBV positivity among the 50 individuals included, HCV positivity was 7.9%.

The main focus, however were the underlying factors causing hepatitis B & C presenting to the Services Hospital OPD. The factors listed in the questionnaire were the null hypothesis was developed on the notion that behavior and socioeconomic status had no relation with the development of complications in HBC & HCV positive individual results achieving insignificant results during the analysis of the collected data. We speculate that these insignificant values may be due to a small sample size; a total 50 patients were interviewed.

Conclusion

According to the data collected and analyzed, the results were conclusive of the fact that behaviors and socioeconomic statuses have no relationship with the development of complications in hepatitis B and C. Hence, the null hypothesis was proved to be correct.

Recommendation

Although there is no significant relationship between behavior and socioeconomic factors but still we have to create awareness among the masses not to indulge indecent behavior because it enhances the transmission hepatitis B& C.

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