

FREQUENCY OF HEPATITIS B, C AND HIV INFECTIONS IN PATIENTS UNDERGOING ELECTIVE GYNAECOLOGICAL SURGERY

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ABSTRACT

Objective: To find the frequency of Hepatitis B,C and HIV infection in patients undergoing Elective Gynaecological surgery.

Introduction: In our community, the surgical equipment's are usually contaminated and at times blood transfusions are improperly screened. It results in the spread of not only viral hepatitis but HIV infection as well.. This study was carried out to find the frequency of HBV, HCV and HIV in patients undergoing elective gynae surgery.

Methods: This study was conducted at Gynae department of Khyber Teaching Hospital Peshawar. Over a period of six months (July 2013 to Dec, 2013) a total of 100 patients were studied. In their pre-operative work up, viral screening included tests for HBsAg, Anti HCV and Anti HIV antibodies. Immune-chromatography (ICT) method was used for initial screening while ELISA and Westonblot tests were used as confirmatory tools.

Results: Total 100 patient were studied. Out of these 10(10%) were HBs Ag +ve and 5 cases (5%) were HCV Ab +ve. Only one patient (1%) was HIV Ab +ve. Ear piercing was present in all cases. Blood transfusion and dental surgery for HBV were 8%,3% respectively (5%,2% for HCV respectively). The risk factor for HIV infection could not be ascertained (probably it was via sexual route).

Conclusion: The frequencies of HBV and HCV infections are increasing in our female patients. Similarly HIV infection is also not uncommon. Beside HBV and HCV, the screening for HIV antibodies should also be included in the routine work up of pre-operative patients.

Key words: Hepatitis B. Immunochromatography method. ELISA, HIV Ab..

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INTRODUCTION

The major aetiology of chronic liver disease and hepatocellular carcinoma in Pakistan¹ and worldwide includes viral infections like HBV and HCV. Isolated in 1963², over the last 50 years, HBV has injected over 2 billion patients worldwide³. In our country most patients are in carrier state i.e one out of every ten patient is a HBV carrier⁴. Similarly with a prevalence of 3%⁵, HCV

infection is also a major health issue worldwide. About 500 million people are having HCV infection all over the world⁶. The risk in Pakistan is estimated to be 2.4 to 6.5%⁷ resulting in about 10 million cases of HCV infections⁸. Infected spouse, improper pre-operative screening, un protected measures in obstetric procedures and unscreened blood transfusions are major risk factors in the spread of these viral infections.^{9,10}

Increasingly getting common world over, HIV infection has caused 25 million death¹². Due to vertical and sexual mode of transmission HIV is more hazardous in women. By the end of 2007 it had infected about 16.5 million women worldwide¹². In America the major mode of transmission is sex between men¹³ while in Asia, the contaminated syringes and needles are major modes of HIV spread¹⁴. Some Asian countries like Indonesia, Vietnam and Pakistan are at increased risk of HIV spread¹⁵. The risk of transmission from

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untreated infected mother to foetus is between 13 to 40%.¹⁶ As much research work on HIV prevalence and risk factors for viral hepatitis has not been carried out in Khyberpukhtunkhawa especially in Peshawar, so this study was designed to study the pregnancy of Hepatitis B,C and HIV infection in women undergoing elective gynecological surgery in our set up.

MATERIAL AND METHODS

The study was conducted in the Department of Gynae and Obstetrics Khyber Teaching Hospital for a period of six months (from Jull 2013 to Dec 2013). 100 patients undergoing elective operations, were selected for the study. After addressing the acute symptoms of the patient, an informed consent was taken. Detailed clinical history and physical examination was done with special reference to risk factors like ear piercing, dental procedures, blood transfusion and surgical procedures in the past. Available patient's clinical record was also reviewed. The patients were screened for HBs Ag anti HCV and HIV antibodies using Immunochromatography. (ICT) method. In positive cases of HBV, HCV and HIV infection, confirmation was done by Enzyme Linked Immunosorbent Assay (ELISA) method. In one case HIV positive patient was confirmed by Westonblot Test.

RESULTS

There were 100 randomly selected cases admitted in Gynae "B" ward for surgery. The ages of the patients ranged from 20-65 years Mean age was 30 year. 52 patients belonged to District Peshawar and 48 patients belonged to other districts of Khyber Pukhunkhawa. Only 02 patients were of Afghan cast. HBs Antigen, HCV antibody and HIV antibody screening tests were done on all 100 cases. 10 cases were found HBs positive, 5 came out HCV positive and only 1 case was HIV positive.

The major risk factors found were ear piercing, blood transfusion, dental surgery and skin tattooing. Out of 10 HBs positive case 08 patients had ear piercing, 05 cases with no other risk factor while 03 cases had multiple risk factors such as dental surgery, skin tattooing and blood transfusions along with ear piercing. Blood transfusion was present in 03 HBs positive cases. History of dental surgery was also present in 03 HBs positive cases. While skin Tattooing was present in 02 cases only.

In HCV positive cases ear piercing was present in all the 05 positive cases, one as a sole factor and 04 associated with other risk factors. In 02 HCV positive cases had history of blood transfusion. History of dental surgery was present 02 HCV positive case while tattooing was present in one case only. HIV positive case had history of ear piercing only with no other risk factor

**Type of viral infection in pre-operative patients
(Total cases 16).**

Type of Viral Infection	Number of Cases
Hepatitis B virus	10
Hepatitis C virus	05
HIV Virus	01

Comparison of the risk factor for viral infection in pre operative patients

Risk factor	HBS Ag No. of cases	HCV No. of cases	HIV No. of cases
Ear piercing	08	02	01
Blood transfusion	03	02	Nil
Dental Surgery	03	02	Nil
Tattooing	02	01	Nil

present. The husband's HIV status and sexual contacts could not be traced in this patient. Most common risk factors found in our study were previous dental surgeries (60% in HBV and 40% HCV) and blood transfusion (60% HBV and 40, in HCV).

DISCUSSION

Viral hepatitis and HIV infection are among global health issues. Underdeveloped countries like Pakistan has alarming endemic status regarding these infections. The rural areas are at increased risk. The modes of transmission of HCV infection are the same in both sexes but the course is different in female patients. Women tend to have a slower progression until the menopause. This is why older women with HCV are more likely to progress to liver cirrhosis. The vertical transmission of HCV infection is not significantly increased in pregnancy, however co-infection with HIV increases the transmission rates to the fetus. Risk factors for HCV infection includes blood transfusion, injection drug abuse health care professionals, history of infection in the family or spouse, contaminated needles, razors or surgical equipments. The prevalence of HCV infection in our country ranges from 0.7 to 20%¹⁷. In this study we found the incidence of HCV infection to be 5% while Farhana et al found it to be 3.44% in pregnant women¹⁸. The reproductive age group has highest prevalence¹⁹. The risk increases up to the age of 40 years and then decreases. In our study we found higher incidence up to the age of 35 years which is similar to other studies²⁰. It is due to increased exposure to the risk factors at this age group we found higher incidence in multiparous women as compared to the nulliparous women which

is similar to a study in Nawabshah¹⁸.

HBV infection in women needs special concern. Screening for HBsAg is recommended for all pregnant females. The chances of vertical transmission to the fetus increases if mother is in replicative phase of infection i.e. high viral load on PCR or HBE Ag positivity. Immediately delivery the baby should receive not only immunoglobulins but the vaccine as well. The vaccine dose is repeated at one month and 6 months interval to complete the recommended schedule. In HBV infection breast feeding does not cause any risk and is not contra indicated.

The risk factors for HBV are the same as that of HIV i.e exposure to blood contaminated needles, razors, surgical equipments, infected spouse or family member etc. In our study the incidence of HBs Ag positivity was found to be 10% in women undergoing elective gynecological operations. We compared the result of our study to studies done in patients undergoing general elective surgeries in different cities of Pakistan like in Karachi 6.5%²⁰, Nawabshah 8.6%²¹ and Hyderabad 9.3%²². Two other international studies showed a lower incidence of HBV like a 1.8 % in Japan²³. and 4% in John Hopkin²⁴. The lower risk of exposure to the risk factors like ear piercing skin tattooing and contaminated surgical equipment's can be responsible for the lower incidence of HBV infection abroad in developed countries .

HIV in women result in different obstetric and gynecologic complications. Such women are at increased risk of cervical dysplasia and should have Papanicolaou smear at 6 months interval initially and cone biopsy, if the smear reports serious dysplastic changes. Carcinoma cervix is more aggressive in women with HIV infection and they die not because of AIDs but due to invasive carcinoma cervix Similarly vaginal candidiasis and pelvic inflammatory diseases are been more often in HIV infected women.

The obstetric complication of HIV infection are also significant. There is vertical transmission of HIV to the fetus in the perinatal period. There is 13 to 40% risk of transmission from untreated infected mother to the foetus¹⁶. In United States HIV screening is mandatory for all women in their antenatal care. With the provision of rapid test for HIV screening in labor rooms and with the use of antiretroviral drugs has significantly the risk of transmission to about 2%²⁵. At many centers in our country especially in the rural areas, the HIV screening is either not available or patients cannot afford it many times - Also the lack of access to the health care services, no health education, sexual abuse and violence increases the risk of HIV infection in our women. One to social factors in in our community, the husband's. Sexual history and HIV status is also not available at many times. The incidence Anti HIV Ab positivity was only 1%

i.e one patient had HIV Ab Test to be positive. Although no other risk factor was present except ear piercing, the transmission was probably through sexual route from infected spouse. The Centers for Disease control and prevention (CDC) and United States Preventive Services Task force (SPSTF) recommended HIV screening for all antenatal women^{26,27}. Testing for HIV can be done with the enzyme immunoassay laboratory test, where the positive cases, can be confirmed by Western blot test Beside HBV and HCV screening we have started HIV screening for our patients undergoing surgery.

Although with the introduction of viral screening, the blood transfusion is no longer a major risk, abroad yet the low threshold for transfusions and improper screening contribute to a significant number HBV and HCV positive cases in our set up.

STUDY LIMITATIONS

As it was a hospital based study so its application to the community population regarding the frequencies of HBV and HCV could not be done. The transmission via sexual routes could not be ascertained completely because of gender and social factors in our set up. In HIV case, the husband's sexual history and viral screening was not available. The sample size for this study was 100 which got completed within six months duration. It became possible due to heavy influx of in patients in our department. However more studies with large sample sizes are needed to be carried out.

CONCLUSION

Both HBV and HCV infections are common in our female patients similarly HIV infection is also getting common in our setup. The presence of these infections in pre-operative work up is of significant concerns.

RECOMMENDATIONS

It is essential to prevent the spread of Hepatitis B, C and HIV infections by screening every patient before surgery. HIV screening should be especially included as pre-operative screening test in all our Hospitals. Every effort should be made during the operation and post-operative care to prevent the transmission of these infections to the doctors and all paramedic staff.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

- Bukhari N:** Planning of study and manuscript writing.
Hassan G: Data analysis.
Sharafat Z: Data collection.
Wadood U: Bibliography.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.