RISK OF HEPATITIS IN SURGICAL PRACTICE

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SUMMARY

Doctors in surgical practice are at high risk of acquiring blood borne diseases from the patients on whom they operate. One of such important diseases is Hepatitis. Our study was conducted in general surgical units to estimate the risk faced by the surgeons, especially the younger ones, who are already less careful about the prophylaxis against hepatitis. A high percentage of patients are having hepatitis, posing serious threat to surgeons. Vaccination as well as physical measures are essential prophylactic steps to protect surgeons from these potentially lethal diseases.

INTRODUCTION

Hepatitis is very common in our society and certain health care workers are at particularly high risk of acquiring the infection. Any abrasion on the skin provides a potential route for blood borne viral infections from the patient to doctor, or vice-versa. The risk is directly proportional to the physical contact and the immune status of the surgeon affected. High risk procedures carried out for prolonged periods, increase the chance of transmission of blood borne viral infections.

Physical measures, like use of good quality surgical gloves, especially double gloves, and eye shields or goggles, decrease the risk of acquiring infection during surgical operation. Active immunization against Hepatitis B plays an important role in protecting the health care personal from this deadly viral infection. However vaccine has not yet been developed against Hepatitis C and as such, the risk of acquiring Hepatitis C infection will continue. It can only be prevented by adopting the physical preventive measures.

The vaccination status of surgeons of Khyber Teaching Hospital has already been reported. The low rates of vaccination in surgeons predispose them to the risk of acquiring infection from HBsAg and Anti-HCV Antibodies Positive patients. The study was conducted in general surgical units of the Khyber Teaching Hospital to
see the frequency of Hepatitis B and C in patients admitted for various surgical problems and therefore their potential risk of transmitting Hepatitis B and C infections to the operating surgeons.

**MATERIAL AND METHODS**

The study included 245 patients admitted to general surgical department of Khyber Teaching Hospital, Peshawar.

HBsAg was detected using serodia® HBsAg kits, based on reverse passive haemagglutination technique (RPHA). In this technique, fixed chicken erythrocytes with adsorbed highly purified guinea-pig anti-HBs IgG is used—which are agglutinated by HBsAg present in serum (plasma).

Anti HCV antibodies were detected using serodia-HCV vitro diagnostic test system, based on the principle that sensitized particles are agglutinated by the presence of antibodies to HCV.⁹

**RESULTS**

Out of 245 patients studied, 137 were males (56%) and 108 were females (44%).

The mean age was 40 (SD ± 18) years. The female patients were significantly younger than their male counterparts — with the mean age of 40+15.8 (SD) as compared to the mean male age of 43 (SD ± 19.3) years (P = p<0.05).

The viral studies revealed 16 patients positive for HCV (6.5%) while 6 (2.45%) patients were positive for HBsAg. Two (2) of these patients (0.8%) were positive both for HBsAg and Anti HCV antibodies. Hepatitis C viral infection was three times more common than Hepatitis B infection in these patients. Most of these patients did not know about their viral profile and they were the asymptomatic sufferers, especially those with Hepatitis C viral infection. However they posed an appreciable amount of threat to the operating surgeons, keeping in mind that no effective vaccine against Hepatitis C has as yet been available.

![Graph showing the distribution of HCV, HBV, and both infections](image)

Those patients who had Hepatitis C infection, usually did not have a past history of jaundice, operation, blood transfusion or any Road Traffic Accident, but they usually had received multiple injections by quacks and Hakims at villages, or dental procedures by unqualified persons.

**DISCUSSION**

Hepatitis is an occupational hazard to surgeons in practice who are at risk of acquiring Hepatitis B and C from infected patients. The risk is mostly related to needle-stick injuries or to the conjunctival implantation of the virus through eye splashes. The longer the duration of surgery, the more is the likelihood of pricks. An experienced surgeon sustains one prick on an average 20 to 40 operations conducted.⁴ The risk of HBV and HCV seroconversion of surgeons during their surgical career span has been variously
calculated as 0.01% to 42.7%.15,12 It obviously depends on the experience of surgeon and the frequency of hepatitis virus in the patient being operated.

The site of needle stick injuries to surgeons has been studied and the commonest site reported is the index finger and thumb of the non-dominant hand.11,12 The risk of Hepatitis can be decreased by wearing good quality gloves. The use of double gloves can decrease the risk of needle pricks by up to 70%.4 Similarly frequently changing the gloves, during an exposure prone procedure can help the surgeons even further.5 Conjunctival spillage of blood can be avoided by using eye shields, goggles or surgical helmet.15

However all these physical measures should not obviate the importance of vaccination against Hepatitis B for all practising surgeons.12 Our previous study7 reveals that only 30% of the surgeons had received vaccination against Hepatitis B, which was significantly lower than the doctors working in medical and allied units (60%) (P=0.0001). The vaccination was more commonly done by the senior surgeons than by their junior colleagues (72% Vs 37%). Younger surgeons are more enthusiastic about surgical procedures and possibly less careful than the senior surgeons and thus may be at higher risk of accidental pricks. The vaccination status of surgeons, especially the younger ones, needs improvement.

Immunization against Hepatitis B is the most effective preventive measure for surgeons.12,16 Moreover surgeons who are HBsAg positive and especially those who are HBeAg positive, should avoid performing surgeries, as they also pose a potential threat to the patients.6,17

Currently in U.K., surgeons who are HCV- Antibody positive, are allowed to continue performing high-risk procedures unless they have proven transmission of HCV to a patient.18

In our study, 22 out of 245 patients (9%) are either “HBsAg” or “HCV Ab” positive, which means almost every 11th patient being operated is a risk of transmitting the virus to the operating surgeon. Routine screening of preoperative patients for Hepatitis B & C is not done in this hospital. In fact, it is not done in the majority of hospitals in Pakistan. We also know that the vaccination status of our surgeons is not adequate,7 and needs improvement. Although vaccination may decrease the risk of Hepatitis B transmission to surgeons to a great extent, Hepatitis C transmission can only be prevented by physical means. It is alarming to note that Hepatitis C infection is three times more common than Hepatitis B in the preoperative patients.

It is interesting to see that the frequency of Hepatitis B in our study is much less than that reported in various studies in Pakistan.19,20,21,22 The testing methods may account for this difference to some extent. However even these lower positive rates are quite significant. We strongly feel that all preoperative patients in our community should be screened for Hepatitis B and C. This will make the operating surgeons more careful in avoiding needle-stick injuries and also follow preventive measures in case of accidental exposure.

REFERENCES


7. Vaccination status against Hepatitis B in doctors working in Hayat Shaheed Teaching Hospital, Peshawar. JPMI 1998; 12: 1


