Original Article

Screening of Barbers for Hepatitis B and C in Faisalabad

Khurram Sohail Raja, Shakeela Naz, Faria Aslam, Noor Arshad, Amer Hayat

ABSTRACT

Objective: To screen the barbers for Hepatitis B and hepatitis C in Faisalabad.

Methodology: This cross-sectional study was performed by the forensic medicine department of private medical college of Faisalabad after approval from institutional ethical committee. The camp for screening barbers was arranged in September 2019 at Sargodha road, Faisalabad. Barbers from different Hair Saloons of the city were invited 2-3 days before arranging the camp. Fifty-five barbers joined the camp for screening. All relevant information was noted on predesigned pro forma. Informed consent was taken and blood samples were drawn from each participant for qualitative detection of hepatitis B Surface Antigen (HBs Ag) and antibodies to HCV (anti-HCV) using one step rapid test devices (Accurate) that are based on a lateral flow chromatographic immunoassay technique. Statistical analysis was done on SPSS 21. Percentages and frequencies for Reactive and Non- Reactive tests HBs Ag and anti-HCV were determined.

Results: During this study 55 barbers were screened for hepatitis C and hepatitis B. The age range of the screened barbers was 18-35 years. We found that 3 (5.4%) of the barbers were seropositive for hepatitis C and 1 (1.8%) barber was co- infected with hepatitis C and hepatitis B, In contrast to this none of the barbers was found to have hepatitis B only.

Conclusion: HCV infection is an occupational hazard for barbers, while HBV infection is not found in barbers despite low infectious dose.

KEYWORDS: Barber, Hepatitis B, Hepatitis C, Infection, Hepatitis B Surface Antigen, anti-HCV.

INTRODUCTION

Chronic blood-borne infectious diseases like Hepatitis C (HCV) and Hepatitis B (HBV) are health burden globally affecting two billion and 3.9 million people respectively, including an estimated 400 million chronically infected with HBV.[1] Hepatitis B and C are global health issue.[1]These diseases can lead to chronic infections and possess high risk for chronic active hepatitis, cirrhosis and hepatocellular carcinoma.[2] Acute hepatitis C is clinically silent in majority of infected individuals (75-80%) with tendency of spreading infections.[3] Most of the subjects remained undiagnosed due to asymptomatic nature of this condition.[2] In numerous regions of Pakistan, the traditional practice of shaving at barber shops or from a roadside barber might be a route of blood-borne viral diseases transmission in them as well as in their customers. These professional while performing their duty are more likely prone to exposure of the blood and bodily fluids of their customers due to accidental micro trauma, thence keeping barbers at high-risk populations for hepatitis B and C.[4] Furthermore, due to unawareness, potential reuse of contaminated and unsterilized sharp instruments are also accounts for transmission of infection.[5] Thus, aforementioned factors increases the risk for contracting of hepatitis in the society.[5] HBV is believed to be 10 time more infectious and easy transmittable through small sharp instruments due to low infectious dose as compared to HCV.[6] The prevalence of hepatitis C in Pakistan is the second highest in the world with an estimated 10 million Pakistani population (5% of the population) is affected by HCV. Recent epidemiological study conducted in Punjab Pakistan has reported higher prevalence of hepatitis C in Faisalabad and Okara districts as compared to other regions of Punjab. [2]

Dr. Khurram Sohail Raja, *MBBS, DMJ*
Associate Professor Forensic Medicine
Dr. Shakeela Naz, *MBBS*
Senior demonstrator Forensic Medicine
Faria Aslam, *MS/M.PHIL*
Clinical Psychologist
HIV treatment Centre Fsd
Dr. Noor Arshad, *MBBS*
Medical Officer,
Children Hospital Fsd
DR Amer Hayat, *MBBS*
General practitioner

[1-2] Aziz Fatimah Medical and Dental College Fsd

***Correspondence*:**
Dr. Khurram Sohail Raja
Email: iamkhurram@gmail.com

Lack of awareness of barbers concerning their occupational hazard with blood borne infections including hepatitis reported in many knowledge, attitude and practice (KAP) studies conducted in Pakistan. Many high-risk groups like bakers, blood donors, health care workers etc. have been studied in Pakistan but literature on sero-prevalence of hepatitis among barbers is scarce.[7] Hence the widespread screening for hepatitis in this group is required for the early detection, management and prevention of spreading hepatitis in our society. Hence, this study aimed to screen the barbers for HBV and HCV in highly prevalent city Faisalabad and opened the horizon for future research on a broader scale.

METHODOLOGY

This cross-sectional study was project of eMed in collaboration with forensic medicine department of private medical college of Faisalabad to estimate the frequency hepatitis C and hepatitis B viral infections among barbers of Faisalabad district. The study was approved by the institutional ethical committee (IEC/737-19). The camp for screening of barbers was arranged September 2019 at a shopping mall situated at Sargodha road Faisalabad. Two to three days prior to camp; barbers from the Hair Saloon of above-mentioned vicinity were invited for screening. Fifty-five barbers joined the camp for screening. In the first step all coming barbers interviewed and history concerning hepatitis B vaccination recorded on predesigned proforma. Informed consent was taken. Subjects with other professionals were excluded from the study. In second step the awareness lecture concerning mode of transmission and complications of hepatitis was delivered and then blood samples were taken from each participant for qualitative detection of hepatitis B Surface Antigen (HBsAg) and antibodies to HCV (anti-HCV) using one step rapid test devices (Accurate) with sensitivity and specificity 99.4% and 99.5% respectively. Rapid test device is based on a lateral flow chromatographic immunoassay technique. Statistical analysis was done on SPSS 21. Percentages and frequencies for Reactive and Non-Reactive tests for HBsAg and anti-HCV were determined.

RESULTS

During this study 55 barbers were screened for hepatitis C and hepatitis B. Barbers were not vaccinated against HBV. The age range of the screened barbers was 18-35 years. We found that 3 (5.4%) of the barbers were seropositive for hepatitis C and 1 (1.8 %) barbers was co- infected with hepatitis C and hepatitis B virus. None of the studied barbers was seropositive for hepatitis B only.

Table 1. Reactive and Non-Reactive Tests for Hepatitis among Barbers (n=55)

Reactive tests for Hepatitis	Frequency (%)
Anti-HCV	3 (5.4%)
HBsAg	0 (0%)
Co infection with HCV & HBV	1(1.8%)
Non- Reactive tests for hepatitis	51 (92.7)
Total	55

Reactive tests HBsAg indicates Hepatitis B infection

DISCUSSION

Incidence of hepatitis is increasing in Pakistan at alarming rates. Reuse of sharp instruments like blades, scissors, nail files and contaminated towels by barbers make themselves and their clients more vulnerable for these life-threatening diseases.[8] High incidence accounts for lack of awareness concerning spread and subsequent complications of hepatitis among the barbers. In Pakistan, most of the barbers are illiterate and oblivious of transmission of infectious agents through their mal -practicing like circumcision, incision, and drainage of abscesses by using unsterilized contaminated instruments particularly in rural areas.[9] Evidences are available documenting higher prevalence of hepatitis in Faisalabad as compared to other regions of Punjab. Numerous studies have been conducted in various regions of Pakistan for screening of hepatitis among various occupations, however few studies have conducted for screening of barbers, which is the most risky group due to occupational exposure of sharp instruments.[10] Most of the barbers belong to the lower socioeconomic status and only source of income for their families. Lethal viral infectious disease in barbers, compromise not only their lives but also affect their families. Moreover, there is also chance of transmitting infections in their customers. They are unable to bear the expenditures of hospitals and are usually non-compliant to medications so they lose courage to live and become a burden for their families. We found that that 5.4% of the barbers were seropositive for the hepatitis C. Current results are in line with the previous study conducted in Lahore that documented 6.97 % of prevalence of HCV in barbers and beauticians.[9] Iranian study by Khairkhah et al documented 2% of prevalence of hepatitis C in

Iranian population.[11] However the study from Obuasi municipality of Ghana had reported 0.5% of prevalence of HCV among barbers.[5] The results of Iranian and Ghana studies are showing lower prevalence of Hepatitis C in contrast to our results .[11]

We did not find hepatitis B among the barbers, however only one (1.8%) barber was positive for both HBV and HCV. Current results are justified by epidemiologic study conducted at Sukkur district Sindh by Abbasi et al, that reported lower prevalence (2.1%) of HBV in barbers and considered it non occupational risk for barbers.[6] However contrary to our results, the study at Ghana had reported high prevalence of HBV among barbers and they found 14.5% of their studied barbers were affected by HBV due to lack of awareness concerning transmission of hepatitis.[5] Iranian study conducted at Tehran reported 9.2% of prevalence of HBV among Iranian barbers. Current results concerning the co-infections of HBV and HCV in barbers are in line with aforementioned Iranian study that also found only one barber having double infection in their study.[11]

Hepatitis viral infections vary markedly among the barbers of the various regions of word. Variations depend upon knowledge concerning mode of transmission of infections and mainly attributed to their safe and unsafe practices of shaving or haircut etc. on their respective shops. Public health programs should be arranged concerning assessment of hepatitis infections among the barbers of the community. So, the precaution measures should be taken to prevent this lethal disease in our society. There should be policy for registering barbers by government to check account-ability of safe practicing like use of sterilized instruments , use of new disposable blades for each customer, use of antiseptic , cleanliness and self-hygiene, avoidance of surgical procedures like wound drainage and circumcision at barbers shop in order to prevent the transmission of hepatitis by malpractice and ignorance.

CONCLUSION

HCV infection was found in barbers and it is an occupational hazard for barbers, while HBV infection is not found in barbers.

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Conflicts of Interest: None.

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Author's Contribution:

Dr. Khurram Sohail Raja	Study design, data acquisition, revising all intellectual contents of manuscript and approve final version of an article.
Dr. Shakeela Naaz	Manuscript writing, statistical analysis of data, interpretation and write up of results revise and approve the article.
Faria Aslam	Data collection, Manuscript writing and revising final version of article.
Dr. Noor Arshad	Data acquisition, Manuscript writing and revising final version of article.
Dr. Amer Hayat	Data collection and revised the final version of manuscript. All authors are accountable for contents of manuscript equally.