



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3581198>Available online at: <http://www.iajps.com>

Research Article

**FREQUENCY OF HEPATITIS C IN PATIENTS COMING FOR
SURGERY IN A TERTIARY CARE HOSPITAL**¹Dr Qasim Qadeer, ²Dr Hira Tahir, ³Dr Ayesha Abrar¹Ayub Medical College Abbottabad, ²Allama Iqbal Memorial Teaching Hospital Sialkot,³General Hospital Ghulam Muhammadabad.**Article Received:** October 2019 **Accepted:** November 2019 **Published:** December 2019**Abstract:**

Objective: The aim of study was to find out the frequency and magnitude of hepatitis C infection in patients coming for surgery.

Material and methods: It was a descriptive, cross-sectional study, in which all the patients coming for surgery in Holy Family Hospital Rawalpindi from 28th June 2018 to 6th Nov, 2018 were included in the study. The excluded patients were those who did not need surgery. The study was based on 'non-probability consecutive sampling technique'. All the patients coming for the surgery in different wards of Holy Family Hospital were included in the study, regardless of their sex, age and nature of their operation. Study tool was pre-designed, self-administered questionnaire. The findings were documented on compilation sheet and evaluated through application of statistical tools. Overall frequency was calculated and data was analyzed through SPSS-16.

Results: In this study, sample size was 559 patients. 48 patients were HCV positive with the prevalence of 8.58%. Mean age of the patients was 41.50±16.9 years. Half 24(50%) of HCV positive patients had blood transfusion in their lives. Majority of the patients 25 (52.08%) had piercing of their body parts. Majority 29 (60.42%) patients underwent dental procedures in their life. Only 10 (20.8%) patients used intravenous narcotics while 38 (79.2%) patients did not use intravenous narcotics. Only 3 (6.2%) patients underwent hemodialysis during their life. None of the patients were incarcerated in their lives.

Conclusion: It is of very much important to limit the spread of Hepatitis C by screening all the patients before surgery and to counsel the patients regarding the disease. It also motivates the use of sterile equipments for the patients and importance of following ethical practices by Doctors and paramedical staff regarding protection of patients from Hepatitis C.

Keywords: Hepatitis C, Hemodialysis, Intravenous Drug, Surgery.

Corresponding author:**Dr. Qasim Qadeer,**

Ayub Medical College Abbottabad.

QR code



Please cite this article in press Qasim Qadeer et al., *Frequency of Hepatitis C in Patients Coming for Surgery in a Tertiary Care Hospital.*, Indo Am. J. P. Sci, 2019; 06(12).

INTRODUCTION:

"Why are you re-using the syringe? Oh man! Don't worry. I have boiled it. Hepatitis C infection is a communicable disease caused by Hepatitis C Virus (HCV). Worldwide 2.2% of people are suffering from HCV. [1] In developing countries the situation is very unfortunate, including Pakistan. The burden of chronic hepatitis, and morbidity and mortality due to hepatocellular carcinoma (HCC) and liver failure is very high in Pakistan. Pakistan bears one of the highest burden of hepatitis, on the globe. [2] HCV was discovered in the year 1989. [3] HCV is an enveloped, single stranded RNA virus, which targets the liver. [4] Hepatitis C is an intricate liver disease. It can be acute or chronic infection. Acute hepatitis C infection can be defined as 6-month duration, following attainment of HCV. Acute HCV infection is mostly asymptomatic. [5] Chronic infection can be defined as persistence of HCV for more than 6 months after the initial infection. About 80% of patients infected with HCV will build up chronic disease. Chronic HCV infection can lead to liver fibrosis, cirrhosis and HCC. [6] HCV spreads mainly through blood. It has both hepatic and extra-hepatic manifestations. The common symptoms are jaundice, nausea, fever, anorexia, vomiting, dark urine and pale stools. HCV infection also causes various autoimmune reactions like purpura, vasculitis, arthralgia's and membranoproliferative glomerulonephritis [4] Hepatic damage correlated to HCV is now a chief cause of morbidity and mortality. It is the most frequent indication for liver transplant. [7]

Approximately 180 million people are infected with HCV, worldwide. [8] World Health Organization (WHO) estimates that worldwide; 130-150 million people have chronic hepatitis C infection. Around 350,000 to 500,000 people die annually from hepatitis C related liver diseases. [9]

In United States, about 4 million people have chronic HCV infection. HCV infection is the most common blood borne infection in United States. [6] One of the most horrible iatrogenic epidemic of HCV infection took place in Egypt, where from 1960-1980's, a mass campaign to eliminate schistosomiasis using repeated intra-venous (I/V) therapy infected a lot of people. [10] Approximately, 10 million Pakistani individuals are infected with HCV. [11] A study was carried out in Islamabad, which involved 47,538 individuals and a Sero-prevalence of 5.31% for anti-HCV antibodies was found. [12] Studies were also carried out in Khyber Pakhtunkhwa (KPK) province where it was found that about 4.57% of general population was HCV positive. [13]

HCV transmission occurs mainly through blood. A mother can transmit the disease to child during birth. Sexual transmission is not common. [14] Other causes could be casualness in disinfecting surgical equipment's, negligence in sterilizing dialysis equipment, needle-stick injuries, needle sharing (e.g drug abusers, ear piercing) tattooing, acupuncture and sharing of barber razor. Besides this, practice of using unsterile dental tools is very common in Pakistan [15]. According to a research in the World Journal of Gastroenterology, there are 3-5% chances of vertical transmission. In the same research it was found that if the mother has untreated HIV, the risk rises upto 20%. [16]

Researchers believe that virus cannot be transmitted through the breast feeding. [17] However, if the mother has cracked or bleeding nipples, Centers for Disease Control and Prevention, advises avoiding breastfeeding. [18] HCV is diagnosed by screening for anti-HCV antibodies, with a serological test. [19] Chronic infection is diagnosed by increased serum transaminase levels, positive recombinant immunoblots assay (RIBA) and noticeable viral RNA in body for at least 6 months. [8] Treatment depends upon the genotype of virus, because different genotypes require different types and duration of treatment. Acute hepatitis C infection is treated with peginterferonalfa. Chronic hepatitis C infection is treated with triple therapy i.e ribavirin, peginterferinalfa and a protease inhibitor. [20] A number of studies indicate that frequency of HCV positivity is much more in rural regions than in urban regions of Pakistan. [21] Health care providers are at increased risk of acquiring HCV infection and it poses a grave occupational threat to them. In 15% of all surgical procedures, needle-stick injuries or cuts may occur. There is also a risk of transmission of infection from doctor to the patient during surgery. [22] In many of the public hospitals in Pakistan, screening of pre-operative patients for hepatitis B or C is not done usually. Similarly, at various places, the blood collected from donors for transfusion using low quality equipment's, give false screening results. [23] HCV infection can be prevented by taking necessary protective measures. As there is no vaccine available for HCV so it bears massive burden on public health systems, globally.

In 1987, The Centers for Disease Control proposed universal precautions for handling blood. [27] Effective safety measures like double gloving, face-shields and plastic aprons should be used during surgery. Hospital waste should be properly disposed off. There should be health education programme for community members and risk-education counseling

for health care providers. [24] The rationale of this study is to evaluate the major risk factors and help in the establishment of preventive measures against HCV infection. This research paper will help out health care providers and other community members to reflect upon their practices and actively participate in the prevention of this lethal disease. For the elimination of HCV infection there should be risk-education counseling for health care providers and health education programs for general community regarding the spread and prevention of infection.

MATERIAL AND METHODS:

It was a descriptive, cross-sectional study, in which all the patients coming for surgery in Holy Family Hospital Rawalpindi from 28th June 2018 to 6th Nov, 2018 were included in the study. The excluded patients were those who did not need surgery. Patients having serum HCV antibodies were defined as HCV infected patients. The study was based on 'non-probability consecutive sampling technique'. All the patients coming for the surgery in different wards of Holy Family Hospital were included in the study, regardless of their sex, age and nature of their operation. The study protocols were assessed and approved by hospital ethical committee. Ethical considerations like confidentiality about the patient's name, address and their results were maintained. Informed consent was taken from each patient.

Study tool was pre-designed, self-administered questionnaire. Questionnaire had two parts. First part contained sociodemographic variables e. g age, gender, address, occupation, income etc. Second part contained specific questions regarding HCV infection. Study variables were age, sex, address, monthly income, education, knowledge about HCV transmission, blood transfusion, use of sterilized instruments, use of intravenous narcotics, sharing of needles, piercing, surgery, organ transplant, dental

procedures, employment in health related field, hemodialysis, HCV infection in partner, sharing of personal items and screening of hepatitis C. The findings were documented on compilation sheet and evaluated through application of statistical tools. Overall frequency was calculated and data was analyzed through SPSS-16.

RESULTS:

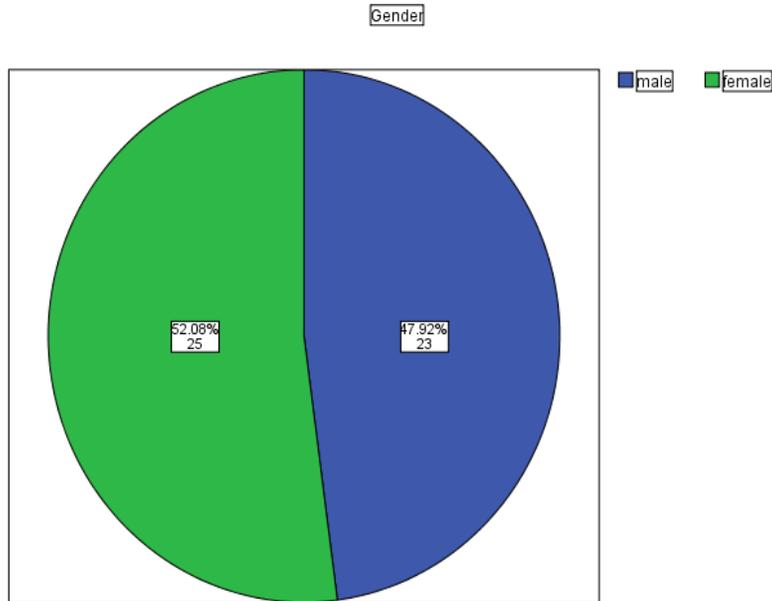
In this study, sample size was 559 patients. Out of these 411 (73.52%) were female and 148 (26.47%) were male patients. Majority 28 (58.3%) of the patients were uneducated. 48 patients were HCV positive with the prevalence of 8.58%. Out of 48 HCV positive patients, 25 (52.08%) were female and 23 (47.92%) were male patients. Mean age of the patients was 41.50 ± 16.9 years. Half 24 (50%) of HCV positive patients had blood transfusion in their lives. Majority of the patients 25 (52.08%) had piercing of their body parts. Majority 29 (60.42%) patients underwent dental procedures in their life. Only 10 (20.8%) patients used intravenous narcotics while 38 (79.2%) patients did not use intravenous narcotics. None of the patients had tattoos on their body and none of them underwent organ transplant. None of the patients had contact with the hospital waste. Only 3 (6.2%) patients underwent hemodialysis during their life. None of the patients were incarcerated in their lives.

Table-1: Age Of HCV Positive Patients In Years

Mean	41.50
Median	36.00
Mode	35 ^a
Std. Deviation	16.974

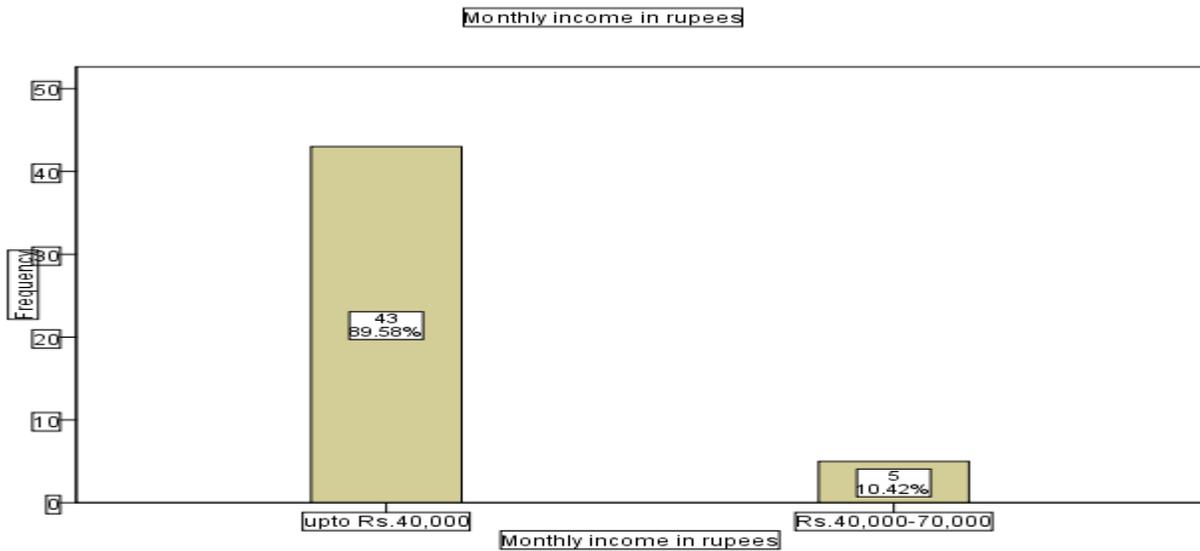
Multiple modes exist. The smallest value is shown

Fig. 1: Gender of HCV positive patient



In this study, out of 48 HCV positive patients, 25(52.08%) were female and 23(47.92%) were male patients

Fig.2: Socioeconomic class of HCV positive patients



In this study, majority of the patients were poor and 43(89.58%) patients had monthly income below Rs. 40,000 and only 5(10.42%) patients had monthly income from Rs. 40,000-70,000. None of them were from high socioeconomic class.

Table-2: Marital Status of HCV Positive Patients

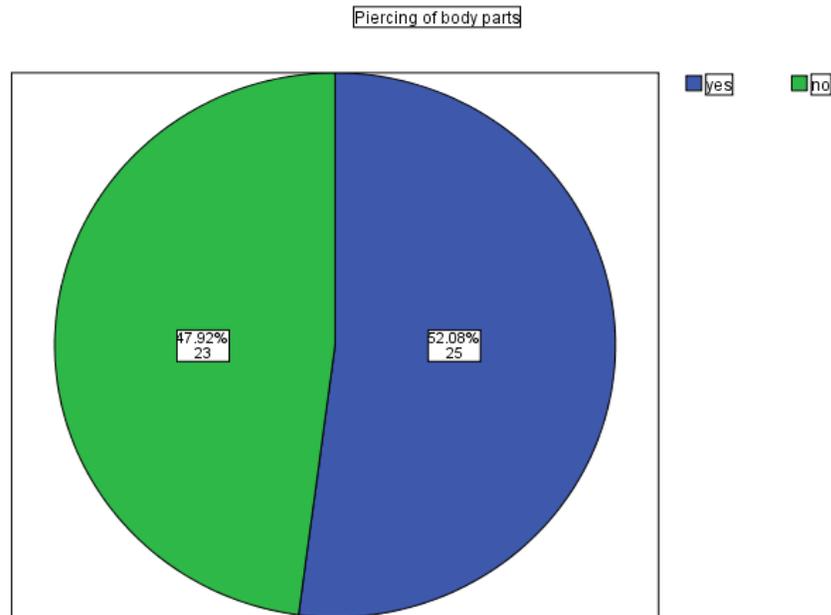
	Frequency	Percent
Married	42	87.5
Unmarried	6	12.5
Total	48	100.0

In this study, 42(87.5%) patients were married and 6(12.5%) patients were unmarried

Table-3: Education level of HCV positive patients

	Frequency	Percent
Educated	20	41.7
uneducated	28	58.3
Total	48	100.0

In this study, 20(41.7%) patients of hepatitis C were educated and 28(58.3%) were uneducated

Fig. 3: Piercing of Body Parts

In this study, 25(52.08%) patients had piercing of their body parts while 23(47.92%) patients did not have piercing of their body parts.

Table-4: Surgery In Past Five Years

	Frequency	Percent
Had surgery	23	47.9
Did not have surgery	25	52.1
Total	48	100.0

In this study, 23(47.9%) patients underwent surgery in the past five years while 25(52.1%) patients did not have surgery in past five years.

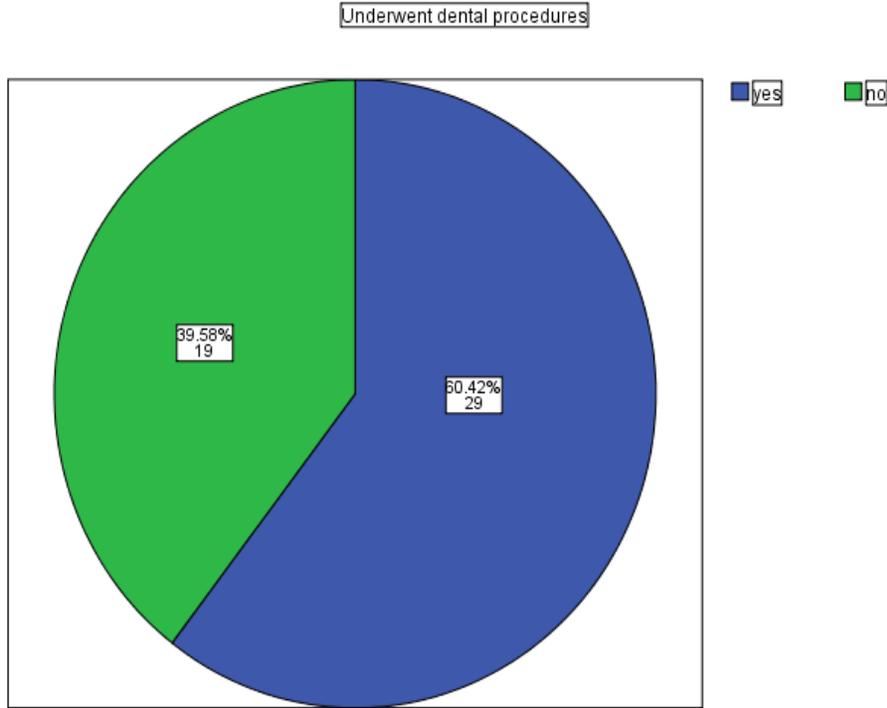


Fig. 4: Dental Procedures

In this study, 29(60.42%) patients underwent dental procedures in their lives while 19(39.58%) patients had no dental procedures.

Table-5: Hemodialysis

	Frequency	Percent
Underwent hemodialysis	3	6.2
Did not undergo hemodialysis	45	93.8
Total	48	100.0

In this study, only 3(6.2%) patients underwent hemodialysis in their lives while 45(93.8%) patients did not have hemodialysis.

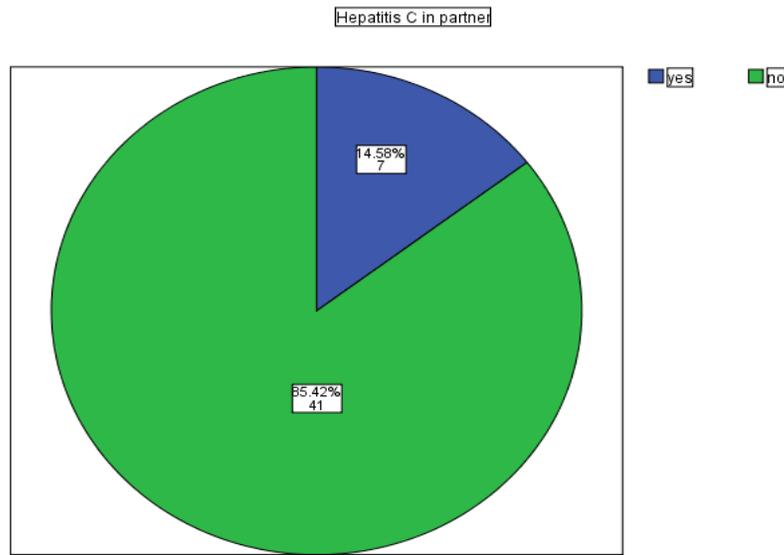


Fig. 5: Hepatitis C in partner

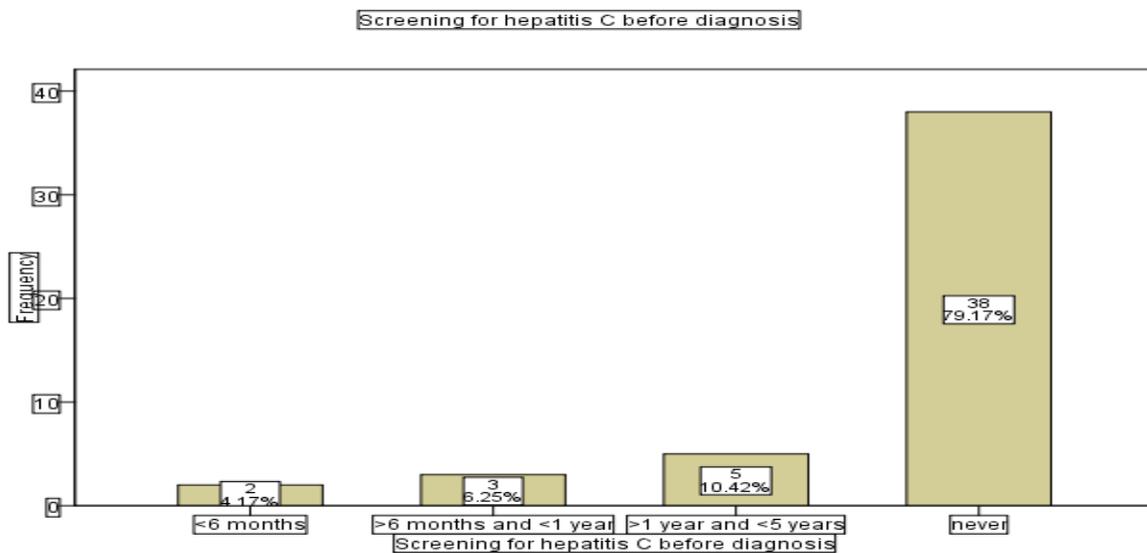
In this study, partners of only 7(14.58%) patients had hepatitis C while partners of 41(85.42%) patients did not have hepatitis C.

Table-6: Sharing of personal items:

In this study only 3(6.2%) patients were sharing personal items at home e.g toothbrushes, razors etc. while 45(93.8%) patients did not share personal items with each other at home.

	Frequency	Percent
Shared personal items	3	6.2
Did not share personal items	45	93.8
Total	48	100.0

Fig. 6: Screening for Hepatitis C before diagnosis



In this study, only 2(4.17%) patients had screening for hepatitis C for <6 months, 3(6.25%) patients for >6 months and <1 year, 5(10.42%) patients for >1 year and <5 years, and 38(79.17%) patients never had screening for hepatitis C before diagnosis.

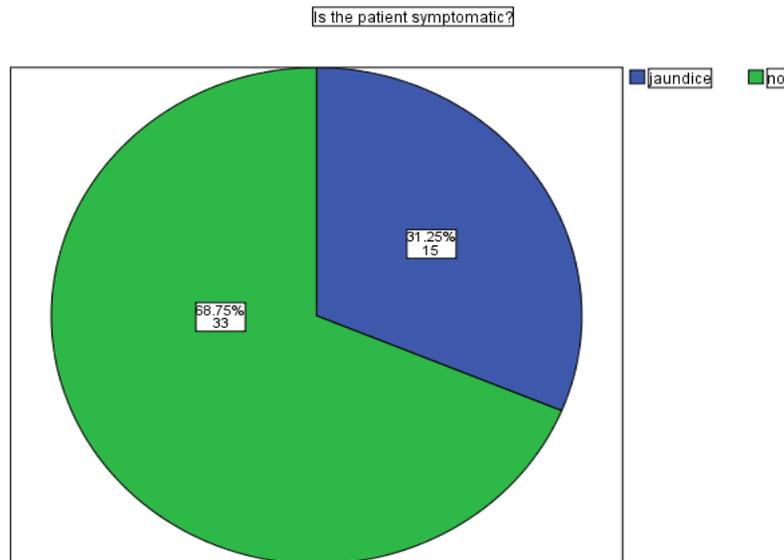


Fig. 7: Is the patient symptomatic?

In this study, 15(31.2%) patients had jaundice and 33(68.75%) patients were asymptomatic.

DISCUSSION:

Globally, 180 million people are infected with HCV. [8] Approximately, 10 million people have been infected with HCV in Pakistan. [14] In this study, out of 559 patients 48 were found to be HCV positive. Prevalence of HCV infection in this population is 8.58%, which is in conformity with another study i.e according to Pakistan Medical and Research Council (PMRC), overall HCV positivity, nationwide, is about 7.4%. [25] According to this study, mean age of HCV positive patients was 41.5 ± 16.9 years. Another study conducted at Shifa International Hospital, Islamabad, from January 1998 to June 2004 had similar result, in which mean age of the patients was 44 years. [26] In our study, out of 48 HCV positive patients, 25(52.08%) were female and 23(47.92%) were male patients. This is in accordance with another study conducted in Kotli, Azad Kashmir, from January to December 2008. According to which Hepatitis C was more among females. [27] But according to another study conducted in district Buner from January 1998 to December 2002, the frequency was found to be higher among males (54.46%) as compared to females (45.53%). The difference in our study can be due to small sample size and female predominance in the sample. [28] In this study, most of HCV positive patients 43(89.58%) were from lower middle socioeconomic class and

only 5(10.42%) patients were from upper middle socioeconomic class. This can be due to lack of education and awareness about routes of HCV transmission. The patients included in our study were exposed to these risk factors i.e among 48 HCV positive patients, 24(50%) underwent blood transfusion in their lives, 10(20.8%) used intravenous narcotics, 25(52.08%) patients had piercing of their body parts 23(47.9%) underwent surgery in past five years. Majority of patients 29(60.42%) included in our study underwent dental procedures in their lives and 3(6.2%) patients underwent hemodialysis. In our study, partners of only 7(14.58%) patients were HCV positive. This may be due to the fact that sexual transmission of HCV is uncommon. [4]

Majority of our HCV positive patients 33(68.75%) were asymptomatic and were diagnosed pre-operatively. This is in accordance with existing knowledge that acute HCV infection is mostly asymptomatic [19]. The aim of this study was to find out the magnitude of HCV infection in local population, so as to highlight this problem, so that essential steps are taken for its prevention and control.

CONCLUSION:

It is of very much important to limit the spread of

Hepatitis C by screening all the patients before surgery and to counsel the patients regarding the disease. It also motivates the use of sterile equipment's for the patients and importance of following ethical practices by Doctors and paramedical staff regarding protection of patients from Hepatitis C. It also emphasizes the need to create public awareness regarding the causative factors and mode of spread of this infection.

REFERENCES:

- Alter MJ. Epidemiology of hepatitis C virus infection. *World J Gastroenterol.* 2007; 13:2436-2441. Retrieved on March 2nd, 2016 from: <http://www.wjgnet.com/1007-9327/13/2436.asp>
- Ali S.A, Donahue R.M.J, Qureshi H, Vermund S.H. Hepatitis B and hepatitis C in Pakistan: prevalence and risk factors. *Int J Infect Dis.* 2009 Jan; 13(1):9-19.
- World Health Organization. What is hepatitis? WHO, 2015[Internet] [cited 2016, Jan 29]. Available from: <http://www.who.int/features/qa/76/en/>
- Levinson W. Review of Medical Microbiology and Immunology. 13th ed. United States of America: McGraw-Hill; c2014.
- Park K. Park's Textbook of Preventive and Social Medicine. 21st Ed. Jabalpur, India: Banarsidas Bhonot; 2009.
- Hepatitis C Online. Diagnosis of Acute HCV Infection. Fox R.K, 2013[Internet] [cited 2016, Jan 29]. Available from: <http://www.hepatitisc.uw.edu/go/screening-diagnosis/acute-diagnosis/core-concept/all>
- Huffman MM, Mounsey AL. Hepatitis C for primary care physicians. *J Am Board Fam Med.* 2014;27(2):284-291.
- Lebovics E, Czobor K. Screening, Diagnosis, Treatment, and Management of Hepatitis C: A Novel, Comprehensive Online Resource Centre for Primary Care Providers and Specialists. *Am J Med.* 2014;127(11):11-14.
- Kim W.R, Poterucha J.J. Is it Time for Mass Screening for Hepatitis C? *Am J Med.* 2011;111(8):667-668.
- World Health Organization. Hepatitis C. WHO July, 2015 [Internet]. [Cited 2016, Jan 30]. Available from: http://www.who.int/mediacentre/factsheet/fs164_apr2014/en/
- Frank C, Mohamed MK, Strickland GT, et al. The role of parenteral antischistosomal therapy in the spread of hepatitis C virus in Egypt. *Lancet* 2000;355:887-891.
- Vogt M, Lang T, Frosner G, Klingler C, Sendl AF, Zeller A et al. Prevalence and Clinical Outcome of Hepatitis C Infection in Children Who Underwent Cardiac Surgery before the Implementation of Blood-Donor Screening. *N Engl J Med* 1999;341:866-870.
- Panigrahi, A.K, Panda, S.K, Dixit, R.K, Rao, K.V, Acharya, S.K, Dasarathy, S. et al. Magnitude of Hepatitis C virus infection in India: Prevalence in healthy blood donors, acute and chronic liver disease. *J Med Virol.* 1997;51:167-17.
- Raja NS, Janjua KA. Epidemiology of hepatitis C virus infection in Pakistan. *J Microbiol Immunol Infect* 2008; 4: 4-8.
- Khokhar N, Gill ML, Malik G.J. General seroprevalence of Hepatitis C and Hepatitis B virus infection in population. *J Coll Physicians Surg Pak* 2004;14:534-6.
- Muhammad N, Jan A. Frequency of Hepatitis C in Buner, NWFP. *J Coll Physicians Surg Pak* 2005;15:11-4.
- Sarwar J, Gul N, Idris M, Rehman A, Farid J, Adil MY. Seroprevalence of Hepatitis B and Hepatitis C in Health Care Workers in Abbottabad. *J Ayub Med Coll Abbottabad.* 2008;20:27-9.
- Jiwani N, Gul R. A Silent Storm: Hepatitis C in Pakistan. *J pms* 2011;1(3):89-91.
- Healthline: Pregnancy and Breastfeeding with Hepatitis C: What You Need To Know [Internet] 2013[cited 2016 March 3]. Available from: <http://www.healthline.com/health-slideshow/hepatitis-c-and-pregnancy#2>.
- Aziz S, Khanani R, Noorulain W, Rajper J. Frequency of Hepatitis B and C in Rural and Periurban Sindh. Retrieved on Jan 29, 2016 from: www.jpma.org.pk/full_article_text.php?article_id=2339
- Shaikh B.T, Hatcher J. Health seeking behavior and health service utilization in Pakistan: challenging the policy makers. *J Public Health* 2005; 27(1):49-54.
- Akram M, Khan F.J. Health care services and government spending in Pakistan. *Pakistan Institute of Development Economics (PIDE working paper):*32; 2007.
- Berger R, Heller PJ. Preventing sharp injuries in the operating room. *J Am Coll Surg.* 2004; 199:462-7.
- Wazir MS, Mehmood S, Ahmed A, Jadoon HR. Awareness among barbers about health hazards associated with their profession. *J Ayub Med Coll Abbottabad.* 2008;20:35-8.
- Khan AJ, Luby SP, Firkee F, Karim A, Obaid S, Dellawala S, et al. Unsafe injections and the transmission of hepatitis B and C in a periurban community in Pakistan. *Bull World Health Organ.* 2000; 78:956-63.
- Basu M, Das P, Pal R. Assessment of future physicians on biomedical waste management in a tertiary care hospital of West Bengal. *J Nat Sci Biol Med* 2012; 3(1):38-2.

27. American College of Surgeons. [Cited 2016 March 6]; [ST-22]. Statement on the surgeon and hepatitis. (Revised April 2004). Available from:http://www.facs.org/fellows_info/statements/st-22.html.
28. Saleem M, Ahmed W, Sarwar J, Jamshed F, Gul N, Idrees M. Frequency Of Hepatitis C In Asymptomatic Patients In District Headquarters Hospital Kotli, Azad Kashmir. J Ayub Med Coll Abbottabad 2011;23(2).