

PREVALENCE OF HCV IN TEHSIL BABOZI DISTRICT SWAT, Khyber - Pakhtunkhwa, Pakistan

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Abstract—Hepatitis C is a major health problem caused by the HCV which is predominant and associated with liver cirrhosis and hepatocellular carcinoma. About 170 million people are infected with chronic Hepatitis C. There is no current vaccine existing while the vitamin D shortage is a common reason for treatment failure in a person with Hepatitis C virus. The study was conducted in Tehsil Babozai District Swat to investigate the prevalence of Hepatitis C. Data was collected from 9 Union councils in the area comprising of 223 individuals of age 15 to 65. After collection samples were tested in the laboratory to find out the percentage of positive cases. Ratio of Hepatitis C positive cases in males was 1.78% and 5.66% in females, which shows a remarkable higher incidence of infection in females. Ratio of Hepatitis C positive cases was 1.6% in the age group 15-26, 4% in age group 46_55, and 6.25% in age group 56_65 which indicate the high vulnerability of old age group (56-65 years) to Hepatitis C infection. The occupation wise positive cases ratio was 6.38% in house wives, 5.5% of farmers, 2.63% in shopkeepers and 3.33% of students while respondents belonging to other professions were found negative for Hepatitis C infection. This ratio shows majority of Hepatitis C positive cases in housewives and farmers living in peripheral localities in the study area, where there is lack of education and health facilities. The main reason of the occurrence of Hepatitis C infection was found to be lack of proper blood screening, sterilized surgical equipment's and news razors in barber shop as well as reuse of an intravenous syringe in local health care centers and hospital. To combat Hepatitis C infection in this area there is a need of awareness campaigns, proper education and check and balance in health care units in hospital of Swat.

Index Terms— HCV, hepatocellular carcinoma, liver cirrhosis, index ratio, Pakistan

1 INTRODUCTION

Hepatitis C is an infective disease of the liver, caused by the hepatitis C virus (Ali *et al.*, 2011). Hepatitis C has been considered as an infection by an extended long-lasting phase. It is a viral infection of the liver, which was first accepted as an isolated disease in 1975 and was earlier mentioned to as 'non A - non B' hepatitis (Ujjainkar *et al.*, 2012). Hepatitis C has been considered as an infection by an extensive lasting period (Ujjainkar *et al.*, 2012). A positive-sense RNA virus or HCV belongs to Flaviviridae family and genus Hepacivirus is a major cause of Hepatitis C and also linked to liver cirrhosis and hepatocellular carcinoma in population and widely distributed Blood borne pathogen (Ng *et al.*, 2013). With one proposed genus Pegivirus these viruses are categorized in three recognized genera i.e. Hepacivirus, Flavivirus and Pestivirus (Kapoor *et al.*, 2011). Heritable HCV (HCV) is extremely changeable and is presently classified into one temporary and six established genotypes (Wang *et al.*, 2012). Six genotypes of HCV are classified as HCV-1 to HCV-6 with every genotype additional divided into subtypes such as HCV-1a and -1b (Carvalho-Mello *et al.*, 2009). HCV is mainly transmitted by the parenteral route in actions such as injections associated to administer into a vein medicine employs (injecting drug user), injections connected to health care measures unscreened blood transfusions, to a smaller degree other percutaneous exposures, and persistent health check and surgical interventions

(Candelas *et al.*, 2010). The major communication course is blood donation, injection medicine use, and risky therapeutic practices before the beginning of showing a sample of material (Lu *et al.*, 2007). Hereditary study of a virus genome is a controlling method to carry out a detailed examination of personal relationships and the outbreak description of contagious diseases (Dearlove *et al.*, 2013). HCV infects about 150 million populations, universal Agreement to the World Health Organization out of which 10 million are injecting medicine taker (Ng *et al.*, 2013). Seeing the statistic that Hepatitis C usually disturbs the deprived people, which not ever existing to health precaution services, these characters may objective be an underrepresentation of the real prevalent risk (Jvaaid and Khuwaja, 2008). HCV diagnosis based to detect either HCV-RNA by polymerase chain reaction (PCR) or anti-HCV diagnosis antibody by enzyme related immunosorbent assay (ELISA). Recent times, HCV core antigen assay has been developed and they have comparable sensitivity analysis by PCR-based display having an average of one to two days difference detected (Alzahrani *et al.*, 2009). Serologic analyses that identify exact antibody to HCV (anti-HCV) and molecular assays that detect viral nucleic acid these two classes are used for diagnosis and management of HCV infection. Ideal handling of hepatitis C yet come to improvement of antiviral drugs that are less toxic and more effective than the current standard of care. There is no current vaccine existing and accessible therapy's demonstration partial effectiveness of many HCV sick

patients (Piccol *et al.*, 2006).

In 1989 HCV was first accepted which originate to be accountable for maximum transfusion-associated non-B and non-A viral hepatitis (Madani *et al.*, 2008). The HCV disease is common, universal and expected worldwide occurrence of 3%, consequential in 170-200 million of HCV -infected person (Adinolfi *et al.*, 2013). The yearly pervasiveness increased from 65.5% before 2002 to 98.6%. On the whole frequency of HCV illnesses with HIV-tainted IDUs were 96.6% (Liu *et al.*, 2008). 2a, 2b and 2 subtypes in count to the internationally widespread, numerous new variants were branded and other separate instead of not as much of widespread subtypes 2r, 2d, 2m, 2e, 2i, 2j, and 2k (Li *et al.*, 2012). In developed countries in Europe and North America, some strains for genotype 3 (i.e. 3a and 3b) have spread worldwide mainly due to transmission via immigration and injection drug use, which are often seen (Lu *et al.*, 2013). There was too worldwide abundance of specific strains, a great deal, especially Genotype 1 within North. One of the latest records of HCV epidemics at an endoscopy center in Nevada in 2008 happened for the reason that linking recycling needles insecure injection and sharing of single-use of medicine in vessels among patients. Studies conducted on healthy general populations revealed the Hepatitis C zero prevalence in Pakistan, Zimbabwe and Turkey 5.3%, 7.7% and 2.2% respectively (Khuwaja *et al.*, 2008). In the North American, Western Australia and Europe are known to have a lower frequency (Hanafiah *et al.*, 2012).

In different regions of Asia, which transitive lasting prevalent exchange particular HCV diagnosis 3 subtypes have been entirely original (Lu *et al.*, 2013). In the United States, Hepatitis C virus is the best public long-lasting blood-borne infection being estimation of 8,000 to 10,000 deaths each year over the next 20 years, this figure is probable to increase substantially (Pybus *et al.*, 2009). In the overall population China is measured as a comparatively great prevalent part of HCV contagion, with an expected incidence frequency of 3.2 % (Tang *et al.*, 2013). In Iran study directed between blood donors that among frequency of HCV infection was actually less around in 2002 which was 0.12%. In a developed nation in the world, Japan has the maximum degree of hepatocellular carcinoma. In 1995 hepatocellular carcinoma developed the third prominent reason of sarcoma death. Yearly liver cancer death rate of 32,000 is predictable to increase above the following 10 years (Pokorski, 2001). The sero prevalence associated with the overall population in Iran is very high (Alavian, 2009). The expected frequency of antibodies to HCV in the Asia-Pacific region varies from 5.6% in Thailand to 0.3% in New Zealand, 3-5% In Japan, Taiwan, Vietnam, and Middle East. Mainly in certain nations of Asia, especially Japan where it is currently wide spread than long-lasting hepatitis B virus disease, HCV illness is one of the best important reasons of universal cirrhosis (Yu and

Chuang, 2008). The objective of this organized analysis is to describe the HCV epidemiology in selected countries in Asia, Egypt and Australia like in a geographic zone occupied by above 40% of the worldwide individuals. The medical literature as well as government or other institutional and published studies reports from China, Australia, India, Egypt, Korea, Japan, Saudi Arabia, Pakistan, Thailand Taiwan, Vietnam and Syria were studied in demand to deliver a complete summary for identification of HCV epidemiology along with identifying regions that necessitate more examination and study (Sievert *et al.*, 2011). Most of the reported studies from India seem to suggest a north south division that is genotype 3 predominates in the north, east and west India, whereas genotype 1 is commoner in south India (Mukhopadhyaya, 2008)

In Pakistan HCV outbreaks at a disturbing speed have been reported. According to different studies, the occurrence of HCV infections between diverse categories (exclusive of constant liver infection, patients) was 0.4-31.9% in Punjab, 4-6% in Sindh province, 1.5% in Quetta region, 5.31% in Islamabad, Gilgit Baltistan with 25.7% and 1.1-9% in the Khyber Pakhtoonkhwa province (Anwar *et al.*, 2013). The hepatitis C Virus incidence frequency varies between the four provinces of Pakistan (Ilyas *et al.* 2011). In nearby countries Nepal have 1%, Afghanistan have 1.1%, China have 1%, India have 0.66%, Myanmar, have 2.5% and Iran with 0.87% hepatitis C infection. In Pakistan the HCV zero-frequency information is considered as upper as more than 4.7% varying from 0.4% to 33.7% (Attaullah *et al.*, 2011). In Jhang Vehari, Okara, Attock, Mandi Bhauddin, Islamabad, Gujranwala, Rahim Yar Khan and Mianwali regions of Punjab area have a great occurrence of HBV and HCV infection. A different minor reading shows that hepatitis C incidence in Pakistan show important differences in zones of different nation (ILYAS *et al.*, 2011). The hepatitis C infection mostly due to virus genotype 3 in Pakistan, within the state's rate of 76.88% in Sindh, 68.94 % in the Punjab, in Balochistan 60.71%, and 0.58% in Khyber PakhtoonKhwa (Attaullah *et al.* 2011). On the spreading of HCV only a rare record of trainings exists from Sindh and Punjab of Pakistan's provinces. In Khyber Pakhtoonkhawa (KPK) the occurrence of many HCV genotypes is newly described in one training in which 1a, 1b, 3a as well as 3b HCV genotypes are frequently found in many portions of KPK between these genotypes 3a frequently exists. In KPK learning about molecular genotyping of HCV widespread is lacking. So, this study was led to discover the molecular epidemiology of many subtypes and HCV genotypes present in the Swat area of KPK (Inamullah *et al.*, 2011).

2 MATERIALS AND METHODS

Study Area

Swat is the province of the Khyber - Pakhtunkhwa, Pakistan, located north of Islamabad, area of swat is 5037

square kilometers about 300 km from the middle of a public area is located between 72°05, 00" -72°50, 00" E and 34°30, 00" -35°50, 00" N. A greeting to the latest information access in 1999, the region has 142,910 (48.5% female, 51.5% males) or 1.3 million families, 348 of the individuals per square kilometer. 99.7% of the population are Muslim and usual household size is 8.8 people and Population growth rate is 3.4%. Literacy rate deteriorated significantly in rural regions than in urban regions. Female's knowledge level is 13.5% and male knowledge level is 43.2%. The Swat's population is composed of various kinds and social groups, including Mians, Pirachas, Pathans, Yousafzai and Gujars, Kohistanis. There is a Pashto Conversation (Pathans, Mians, Yousafzai and Pirachas (Qasim *et al.*, 2013). River Swat is an important river in Khyber - Pakhtunkhwa, flowing from different area and eventually enters into the Kabul River in Nissata (Yousafzai *et al.* 2013). The whole forest of Swat covered 497,969 acres of pine species. The regional headquarters of Swat is Saidu Sharif, but the main town is Mingora region. Saidu Sharif is situated 131 km distance from the Peshawar, the provincial capital, and turned to the northeast, and from Islamabad (Bangash, 2010). Complete highways within the Swat area had been associated with 634km. (Report by Socioeconomic Baseline and Displacement Impact. 2010).

The actual Swat area hosts a number of plants and creatures, such as organic vegetation as well as therapeutic herbal treatments for example bonefish as well as hen-bane, as well as birds like the duck, chakor, partridge, pheasant as well as gold hen, and animal like markhor, the actual nationwide animals associated with Pakistan. Complete forest land included within Swat had been 497, 969 acres by 2007-2008, composed of mainly pine types, for example chairs, kail, spruce as well as fir (Report by Socio economic Baseline and Displacement Impact. 2010). Typical yearly rainfall runs type 800-1200 mm. Moisture differs through no less than 40% within April in order to no more than 85% within the July month (Nafees *et al.*, 2008). The warmest month is July optimum as well as minimal heat associated with 33°C as well as 16°C, respectively. The coldest month is January along with imply optimum as well as minimal heat associated with 11°C as well as -2°C, respectively (Report by Swat valley. 2012). The education percentage is actually 7.5% and 22.5% within urban while 6- 3% within rural region (Hamayun *et al.*, 2006) Within the area, Swat the amount of primary, High, middle and as well as higher Secondary schools tend to be 1017, 65, 69 as well as 10 respectively. The female primary, High, middle as well as higher secondary schools is tending to be 601, 17, 29 as well as 1 respectively (District Census Statement, 1998). There are 2 large private hospitals the Saidu Sharif medical center as well as a Middle Medical

center (Khattak *et al.*, 2008).

SECONDARY DATA

Secondary data were obtained by reading books, magazines, newspaper, research paper, different article about the HCV, journals; data were also obtained from different site like Google, YouTube, and Facebook and from television. Secondary data are also by reading magazine and newspaper (Nelson *et al.*, 2011).

FIELD WORK

In field work data was collected by using various techniques, e.g. questioner is used, laboratory and hospital were visited and interview was conducted different people.

QUESTIONNAIR

A structured questionnaire was filled by each individual which include age, gender, HCV patient in the family, surgery, dental treatment, blood transfusion, anti HCV vaccination, past viral infection, drug history, recent medication, a genetic disease in the family, living conditions and occupation to collect information from the people (Nelson *et al.*, 2011).

INTERVEIW

Data were collected in the form of interview from the people of Tehsil Babozai Dist.; Swat. Various questions were being asked from the people about the prevalence of HCV in the area.

CRITIRIA FOR SAMPLES INCLUSION

The people living in unhygienic condition with poor diet, ageless than 15 years, and overcrowded were included in this study. This area was selected because there was no epidemiological picture of HCV prevalence reported previously in this area. (Memon, 2011).

SAMPLE COLLECTION

Sample was collected by using 70 % ethanol soaked cotton to disinfect the epidermis where the vein was clear and easy for blood collection. The region above the elbow was tight with a belt wrapped around it. The syringe needle was injected into the vein and about 3-4 ml of blood was taken and was carefully removed. After the serum separation two drops of serum and one drop of buffer (supplied with the kit) was put onto serological strips. The reading was recorded after five minutes.

SAMPLE SIZE

A total of 223 individuals belongs to 9 union councils of Tehsil Babozi were included in this study.

DATA COLLECTION

The statistical technique of data collection was done by simple random sampling. By using statistical formula.

$$\text{Sample interval} = N/n$$

Where N is the total population of the area and n is total sample taken from that area

Data was collected from different Union council of Tehsil Babozi on the base of the population. A structured questionnaire was filled by each individual which include age, gender, HCV patient in family, surgery, dental treatment, blood transfusion, anti HCV

vaccination, past viral infection, drug history, recent medication, a genetic disease in the family, living conditions and occupation. All the samples were tested in the laboratory to find out the percentage of positive cases. Method was used to analyze the data. The percentage was computed for categorical variables like age group, gender and total percentage (Memon. 2011).

SAMPLE HANDLING, TRANSPORT AND STORAGE

Sample was collected from different site. After the blood collected in the syringe it was transferred into an EDTA tube and was placed in ice box with -20 centigrade before performing serological test. The blood was transferred in the diagnostic laboratory where the tubes were centrifuged at 10,000 RPM for 10 minutes (Awan *et al.*, 2012).

3 RESULTS AND DISCUSSION

STUDY SITE

A study was conducted in tehsil Babozi district Swat, which includes nine Union councils. The total population of the study area is 278401 of which 223 samples were taken on a population based from a different site in the area. Sample sites contain different site or Union council having a different population of each Union council from which sample is taken according to their population based.

SEROLOGICAL DIAGNOSIS

After 5 minutes in lab diagnosis the results were noted either positive or negative on the strips. As illustrated in the figure 4.2 below. In this study, various factors were kept in mind like surgery, age, gender, weight, blood transfusion, dental treatment, past viral infection, any disease in the family, and occupation.

GENDER

We included both the genders in our study to find out the prevalence gender wise. Of 223 individuals 169 males and 53 females were analyzed. According to this study prevalence of HCV in males was (1.78%) and (5.66%) in females. In which females were more infected as compared to males.

According to the study, females were more HCV prevalent than males which may be due to less awareness about HCV, less education, not using prescribed drugs.

Study was conducted regarding to HCV prevalence on gender wise results show that No statistically significant difference was found between males and females or between locations (Suliman *et al.*, 1995). The distribution of HCV sex related revealed more male patients than females. The highest prevalence was found in men having Hepatitis C infection (4%) while in females, there was a relatively low prevalence of Hepatitis C (1.1%) (Ali *et al.*, 2007). HCV Seroprevalence between hospitals founded overall population was resolute. The study residents contained the persons attending a tertiary care hospital in Faisalabad and Pakistan. There was no statistically important alteration in the fraction of

individuals who were positive in situation of females and males. This study also indicates a greater occurrence level of HCV infection in the grown up age individual (Nafees *et al.*, 2007). The patients include females and males with age individual among 17 to 82 an age with 37 years. Entire patients divided for HCV Ab and were positive for HCV Ab which comprises both females and males and indication positive for infection (Shah and Dar, 2004). Gender-wise occurrence of HCV infection was assessed in male and in females while the possibility trends were somewhat greater among males of all age individuals than females, statistically there was no important difference in gender. Gender-wise prevalence of HCV discovered no major difference in males and females (Anwar *et al.*, 2013)

AGE

The samples were collected from individuals related to different age groups. Study include both male and female which divided the into different age categories i.e. 15_15, 16_25, 26_35 and so on up to 105. Prevalence of HCV is (1.6 %) in b/w 15_26 age group, (1.05%) in 26_35 age, (2.7%) in 36_45 age, (4%) in 46_55 age, and (6.25%) in 56_65 age group. The other age groups have no HCV positive case in this study

The results showed that high prevalence occurs in old age people above 50 years. It may be due to weak immune response to pathogen and other age link diseases

The result showed that there was statistically imperative increasing possibility of anti-HCV prevalence with increasing age (Suliman *et al.*, 1995). Another study was conducted on HCV prevalence result show the prevalence of HCV was very rare in patients with age 15 years or below, while in the case of older age group the high HCV frequency was recorded (Ali *et al.*, 2011). A study was conducted on different age group among them the highest prevalence was observed in the age groups 20-29 years. In age groups above 40 years a decrease in the levels of active HCV prevalence was observed (Hussain *et al.*, 2013). The first hazard issue in the fixed model was patient's age. Its constant confined positive significance. This showed that with the rise of 1 year of the patient's age the infection of hepatitis C will be enlarged 1.035 times, providing that all other issues are expected to be constant. As one year rise does not offer any major alteration, so inspected the change later 20 years. This recommended that with a rise of 20 years of age the hazard of Hepatitis C disease develops dual (Ghias and Pervaiz. 2009). HCV occurrence was originated to be directly related to the age issue, i.e. greater the age greater was the HCV occurrence. (Awan *et al.*, 2012).

BLOOD TRANSFUSSION

We included blood transfused individuals were also included in this study. Out of 223 individuals 215 (96.4%), 6 2.7 % were blood transfused, who showed no HCV positive case presentations. Results show that

blood transfusion has no effect on HCV prevalence in the selected area. It may be due to proper screening of blood before transfusion and proper health care along with better management of hospital.

Study was conducted on the risk factor of HCV blood transfusion study result show that before routine blood donor screening, fresh blood was demonstrated to be a risk factor for infection of HCV (Vogt *et al.*, 2003). Another study was carried out for HCV infection prevalence on patient to the donor during blood transfusion. Which shows that being HCV is a blood-borne disease exposure of skin with blood and direct contact with blood was the main way of transmission of HCV from patient to provider (Henderson, 2003).

SHARE NEEDLES

Share needle were also include as a risk factor in the study out of 223 individual 3 person 1.3% share needle result showed that there was no HCV positive case in the study who share needles.

The result showed that share needles are not risk factor for HCV in this area due to the sterilization of instrument before using. Most people were not sharing needle vary rare person share needles, but not a risk factor for HCV in that individual.

A Study conducted on HCV risk because of factor share needle, that Hepatitis C is a blood-borne infection that is transmitted via transfusion or needle stick, due to which the health care workers are occupationally at the risk of HCV diffusion from ill patients (Alavi and Hajiani, 2010). Another study regarding to HCV show that it has been well-recognized that transmission of HCV can occur in a health care situation. The risk is mainly with needle stick accidents involving hollow-bore needles (Franciscus, 2013). A study was conducted on HCV prevalence which include hazard feature i.e share needle, being a blood-borne disease transferred professionally by transfusion and by needle sharing, containing spread from an infected individual to staff, to other patient to, and from ill workers to patients (Henderson, 2003).

ORGAN TRANSPLANTATION

Out of 223 individual, 220 (98.7%) individual had no transplanted transplanted organ and 2 (0.9%) out of 223 individual has organ transplanted, but study show that organ transplantation had no relation with HCV because no positive HCV individual are present in them and HCV positive result is 0.

A recent study was conducted on the prevalence of HCV and different risk factor where study HCV prevalence which include those individuals who transplanted organ according to the study organ transplantation have no relation to HCV prevalence due to the special care of HCV-infected organs or tissues which are the risk factor of chronic HCV infection.

Study was conducted on HCV risk factor like organ transplantation before donor screening, organ like Heart, kidney or liver from infectious donors to the organ

recipient also carried a high risk of transmitting HCV infection. Limited studies of recipients of transplanted tissue have implicated transmission of HCV only from no irradiated bone tissue of unselected donors. As with blood-donor screening, use of anti-HCV-negative organ and tissue donors has virtually eliminated risks for HCV transmission from transplantation (Atlanta, 1998). Another study was conducted in United State on HCV risk factor organ transplantation results show that rare cases of inadvertent HCV transmission via organ or tissue transplantation continue to occur. Among transplant recipients who receive HCV-infected organs or tissues, the risk of developing chronic HCV infection is high. With the advent of more accurate testing methods for donors, the risk of HCV transmission in this setting has markedly declined (HCV Epidemiology in the United States, 2014).

OCCUPATION

The respondents were having different occupations. Prevalence of HCV related to occupation according to this survey was (6.38%) in house wives, (5.5%) in farmer, were 2.63% in shop keeper and (3.33%) in student. The people related to other occupation are not affected.

According to our study prevalence was more common in house wives it may be due to unsubscribe drug use, pregnancy, more surgery, sharing instrument and less education. HCV prevalence also high in farmer due to exposure to risk factors of HCV. People belong to another occupation were not affected in this area, it may be due to high health care and proper management against HCV.

When costs were evaluated according to jobs, results showed that indirect costs for farmers were significantly higher than for housewives, retired persons, students and workers, Hospital, treatment, and total costs, however, did not differ significantly by occupation (Karahasanoglu *et al.*, 2013). HCV Prevalence was initiated in persons, whom linked to numerous professions. Risk factor for transmission of HCV in the health maintenance situation strong point exists, comprising transmission from infected patients to staff. It transmits from infected person to patient and from infected worker to patient (Henderson, 2003).

DENTAL TREATMENT

Like other risk factors, dental treatment was also considered in the study. According to questionnaire, (9.5%) individuals were exposed to dental treatment out of which (0.899% were HCV positive which indicates that dental treatment as a major risk factor for HCV.

Rate of HCV in Pakistan has increase because of shortage of medically qualified and scientifically trained health care workers, especially dentists. The prevalence of the disease is influenced by numerous factors which may be able to modulate its onset. HCV-RNA has been detected in saliva and in salivary glands from patients with sialadenitis. Most HCV patients have higher HCV- RNA levels in their gingival sulcus than in their saliva. HCV-

RNA is found in a toothbrushes used by hepatitis C patients. This fact could be a theoretical risk of infection by sharing these objects by their household members. So like surgery, dental treatment was also taken as a risk factor for HCV. According to data from questionnaire, 21 (9.5%) individuals were exposed to dental treatment in which 2 (0.889%) were HCV positive. Like other risk factors, dental treatment was also considered in our study. According to questionnaire 9.5% individuals were exposed to dental treatment out of which 0.899% were HCV positive which indicates that dental treatment as a major risk factor for HCV.

The occurrence of HCV-RNA in the saliva provides a basis for saliva as a probable source of HCV infection. Contamination of toothbrush has been demonstrated with HCV-RNA used by hepatitis C patients, hence the dentist were in a high risk of this disease due to the processes and apparatuses of dental management (Henderson. 2003). Anti-HCV seroprevalence was greatly larger among cases with dental removal than their counter control individual. Dental removal action as a menace influence for HCV infection.(Kubaisy *et al.*,2014)

SURGERY

A total of 223 individuals were analyzed keeping in mind the risk factor of surgery. Among 223 respondents 33 (4.8%) have done surgery in which no individual were HCV positive

According to our study result, no surgery patient was HCV positive it may due to hospital are well equipped for blood screening and there was a proper procedure for sterilization of surgical instruments and a high care during surgery about HCV transmission.

Incidence of HCV in patients with cardiac surgery had visible anti-HCV antibodies it is menaced issues for HCV infection. The entire number of blood products per patient, entire number of operations, getting fresh blood, grown up age could be recognized as the chief risk influences for infection (Vogt *et al.*, 2003). Patients who stayed for cataract surgery were positive for HCV antibodies. In fewer than 60 years of age females were added while in above 60 years of age females and males were similarly positive for anti-antibodies (Mahmood and Iqbal. 2008). Major surgery may contribute towards the HCV transmission. The hospitals in the Khyber Pukhtunkhwa province of Pakistan are not well equipped for blood screening and there is no proper procedure for sterilization due to many reasons like a burden on patients and sometimes no awareness about HCV transmission (Ali, 2011)

LIVER DISEASES

Among all respondents 7 (3.1%) respondents had liver diseases like jaundice when were a question about it and 215 (96.4%) were having no liver disease. According to the study, 0.05% have been reported with HCV positive which have liver disease.

HCV prevalence occurs in various regions, according to

a study HCV was found in different regions from non-endemic to a high endemic region, but according to this there was no liver disease in HCV positive individuals.

Study dealing with the occurrence of hepatitis C between patients with liver diseases was establishes. Liver diseases comprised hepatocellular carcinoma, cirrhosis, long-lasting liver disease and prolonged active hepatitis (Umar *et al.*, 2010). Respondents were quantifiable for the liver histology training and maximum patients infected with HCV genotype 1 and were males. In the liver histology training, important fibrosis and Necro inflammatory action were existing in patients (Bochud *et al.*, 2012). Long-lasting HCV was the main cause of hepatocellular carcinoma (HCC) cirrhosis, and end-stage liver infection necessitating liver replacement in the United States (Yee *et al.*, 2012).

PAST VIRAL INFECTION

According to the study out of 223 individual 1289(57.4%) have no viral infection in the past and 94 (42.2%) person were effected from viral infection in the past, the result of HCV positive related fast viral infection was 2.12% out of 94 individual 2 % were HCV positive show that HCV infection was related to past viral infection.

Information in patients with long-lasting viral hepatitis was analyzed. Secondary, hospital, management and whole incomes were suggestively greater for patients with long-lasting hepatitis B than for hepatitis B virus haulers and patients with long-lasting hepatitis C (Karahasanoglu, 2013). There are no unswerving analysts for spontaneous determination of HCV disease and important fraction of individuals unprotected with HCV grows determined infections that developed for long-lasting liver disease. An interesting method for management of severe HCV and inhibit the growth of long-lasting hepatitis. Some scientific, legal action presented that the handling of hepatitis C infection through the severe stage is related with great continued virological reaction amounts reaching among 75% to 100%. While there is a dominant agreement that involvement through the severe stage was related to enhance viral extinction, applicable medical inquiries have continued unanswered by medical judgments. Optimization of treatment for severe hepatitis C infection and documentation of analysts of SVR signify an actual challenge (Kamal, 2008).

DISEASE IN FAMILY

When the respondents were asked about having an inherited disease in family, then it was found that out of 223 individual 211 (94%) have no family disease and 11 (4.9%) individual have family disease.

HCV infection positivity occurred latterly through chance due to bloodstream aids, testing with respect to endoscopic or therapeutic approaches, hospitalizations as well as analysis related with family memberships connected with HCV-positive victims. Inside these sorts of sufferers, the specific measurement related to HCV then an infection can't be observed. Totally no

differences within histologically, demographics, as well as virological purposes had been observed in concerning these kinds of victims and individuals beside with known hazard elements with respect to bloodstream advertising (HCV Epidemiology in the United States. 2014).

4 CONCLUSION & RECOMMENDATIONS

The recent study indicated that HCV was more prevalent in females (5.66%) than males (1.78%). The majority of the cases were reported in household wives and farmers, from peripheral areas of Swat, where people are lack of education of health. The positive cases incidence is high in old people having an age of above 45 years. The solid reason of the high incidence of HCV was lack of proper blood screening, use of sterilize instrument, reuse of intravenous strings in local health care centers and hospitals and razors in barber shops.

To combat HCV in this area, there is a need of awareness complains and proper check and balance in health care units and hospital of swat. Proper education for females and take care in a barber instrument like razors, scissor, and hospitalize instrument should be sterilized before use. There is also need of proper management program about the awareness of HCV in this area.

5 APPENDICES

6 ACKNOWLEDGEMENT

Every honor is due to Allah Almighty. The supreme, the ubiquitous, the compassionate, the most merciful and the beneficent, Who knows the hidden facts of universe and we do not encompass anything of His knowledge except as He wills, His throne extends over the heavens and the earth and Who blessed me with the ability to do this work and thanks to the Holy Prophet Hazrat Muhammad (Peace Be Upon Him) and His AAL, Who has enabled me to know my Creator and lead me to the right path and save me to astray from the faithful tract, without His teachings and perfect life I was nothing but he leads this dirt-made nonentity to the entity of success.

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