

Incidence of Hepatitis C in Different Age Groups and Socio Economic Status in Relation to Dietary Habits; A Hospital Based Study

Anam Manzoor, Asma Lodhi, Muhammad Adnan Sarwar*, Jawwad Hussain, Nighat Bhatti and Shazia Zahra

Abstract: Hepatitis C is an infectious disease which is caused by hepatitis C virus (HCV) infection. It causes the irritation or swelling of liver. The primary methods of its transmission include intravenous drugs use, blood transfusion and unsafe medical procedures. Hepatitis C disturbs the intake of food and its processing in the body which causes the deficiency of micro and macro nutrients. The purpose of this study was nutritional support of the patient, to determine the incidence of hepatitis C in different age and sexes, to assess the burden of disease in target population, and to determine the effect of dietary habits and life style on hepatitis C. Allied hospital Faisalabad was visited for one and a half month. 128 respondents were collected during this time period, and the data from them was collected by the help of already prepared questionnaire and it was processed by SPSS computer program. Chi-square test was applied to find the association. The salient findings of the study were: there were more males (53.9%) than females (46.1%) affected with hepatitis C. Most of the respondents (42.02%) were of the age between 31 to 40 years. Majority of them (80.5%) were married. Majority of the respondents (65.6%) belongs to the low socio economic status, (25.05) were illiterate and (53.1%) belongs to rural area. There was a significant association between egg and meat eating habits and the respondent socioeconomic status. There was non-significant association between socioeconomic status of respondents and their wheat, rice, fruits, vegetables, yogurt, milk and salad eating habits.

Key Words: Incidence, Hepatitis C, Socio-economic Status, Dietary Habits, Hospitals Based Study.

Institute of Rural Home Economics, University of Agriculture, Faisalabad,

*Department of Medicine, Punjab Medical College, Allied/Civil Hospital, Faisalabad.

Department of Home Sciences, Government College University for Women, Faisalabad,

Department of Nutritional Sciences, Fatima Memorial Hospital, Lahore

***Corresponding Author E.mail:**
MAS (adnaan189@yahoo.com)

INTRODUCTION:

Hepatitis C is an infectious disease which is caused by hepatitis C virus (HCV) infection which causes irritation and swelling of liver. This virus is from the family Flaviviridae and it is RNA virus of plus strands [1]. According to a survey 200 million people worldwide are suffering from HCV, which is almost 3.3% of the total population of world [2]. It was noted that 50% to 80% of people are suffering from chronic hepatic disease which is caused by HVC. It was projected that 308,000 individuals suffering from liver cancer due to HCV and 785,000 individuals from cirrhosis are dying annually. 170 million people in Pakistan, which is an under developed country, have very poor nutritional status and low literacy rate. In 174 countries Pakistan was ranked 134th by human development index of United Nations. It was estimated that 10 million people in Pakistan are suffering from HCV [3]. 15% of total cases of hepatitis are suffering from acute symptoms [4]. Progress to chronic infection is in 80% of cases. Due to Hepatitis C 27% people develops cirrhosis and 25% develops hepatocellular carcinoma [5]. In developed underdeveloped countries; HCV is transferred through

blood transmission and medical treatments. There is 1.8% chance of getting infected with hepatitis C in individual who suffered from needle stick injury from the person who was HVC positive. Hepatitis C can be transferred through sexual activities [4]. Whereas, due to tattooing risk of hepatitis C virus is increased about two to three folds. HCV can be transferred through self-care equipment such as shaving items, tooth brushes, manicuring and Pedicuring items, which can be polluted with the blood. Pakistan is as under developed country in which shaving equipment and scissors are used repeatedly from one person to another without cleaning them. This is because mostly the barbers are not educated and they did not know that viral infections can be transmitted through these items [6]. Risk of hepatitis C transmission from the diseased mother to the baby less than 10%. As the malfunctioning liver grows up it shows possible complications in infected individuals and it also shows significant role of diet in the consequences of disease which cannot be over ruled [7]. The liver considerably affects nutritional status through role in the digestion, absorption and storage of vitamins, minerals, proteins, carbohydrates and fats. Hepatitis C disturbs the

intake of food and its processing in the body which causes the deficiency of macro nutrients. Role of poor nutrition in increasing liver failure due to the activity of viruses and increase in HCV is not known. Liver is primary organ which play important role in the metabolism of nutrients and damage to the liver significantly affects the dietary intake and total health status of body [8]. Aim of the study is nutritional support of the patient, check role of nutrition in hepatitis C controlling and encourages optimum state of health, inhibit or cure malnutrition or insufficiencies in certain nutrients and hypothetically delay the development of the disease. Normally, individuals suffering from hepatitis C do not require any specific nutritional modifications. If someone is diabetic or develops chronic hepatic disease or any other chronic disease such as celiac disease, it may require specific nutritional restrictions. Proteins, carbohydrates, fats, vitamins and minerals modifications can be designated in these conditions. Malnutrition study in HCV patients is still a problem and assessment of the nutritional status has been rarely performed. Malnutrition occurs generally in these patients so nutritional support is compulsory. When most of the liver cells have been damaged hepatic failure noticeable and the body become unable to sustain dietary balance, consume diet appropriately, synthesize blood proteins and decontaminate harmful materials. At the beginning of HCV infection nutritional deficiencies may not be significantly apparent. To encourage good health and better nutritional status, quality of life should be promoted as easy as possible.

Objectives: Objectives of present study are

- To determine the incidence of hepatitis C in different age and sexes.
- To assess the burden of disease in target population status.
- To determine the effect of dietary habits and life style on hepatitis c

MATERIALS AND METHODS:

Place of Study: The study was conducted in the Faisalabad District. To accomplish set objectives of the study Allied Hospital Faisalabad was between 10th of May to 24th of June 2015. Allied Hospital is tertiary care hospital at Faisalabad district level.

Sample Size: Allied hospital was visited for one and a half month and the data of patients suffering from hepatitis C was collected during this time period to see the incidence of this disease. A total of 128 patients were included and inclusion was dependent upon their positive reports for HCV as kept by them.

DATA COLLECTION TOOLS:

Pre-testing: Pre-testing helps to detect the mistakes in questionnaire. It was done on 5 respondents and after pre-testing some questions were added, rephrased and

modified.

Questionnaires: Relevant data was collected with the help of already prepared questionnaire that was served upon the patients included in this study.

Statistical Analysis: After completing the data collection, data was analyzed by SPSS-17 computer program.

RESULTS:

Data revealed that respondents of young age from 31-40 were majorly affected (Table 1). Data showed that most of the respondents were from low socio-economic status and this socio income group was more affected due to lack of awareness about the disease. (Table 2)

Chi-square value shows that there was a non-significant association between socio economic status of respondents and their wheat eating habits and they follow the instructions of their physician (Table 3). Chi-square value shows that there is a non-significant association between socio-economic status of respondents and their rice eating habits. Patients from every socio income group eat rice and follow the instruction of physician (Table 4).

Chi-square value shows that there is a non-significant association between socio-economic status of respondents and their milk drinking habits. That means respondents follow the instruction of their physician. Patients from every socio-economic group drink milk almost on daily basis (Table 5).

Chi-square value shows that there is a significant association meaning that respondents show violence against the instructions of their physicians because most of the patients belong to low income group and they were not able to bur eggs. Chi-square value shows that there is a highly significant association between socio-economic status of respondents and their meat eating habits that means respondents show violence against the instructions of their physicians.

Meat is very expensive and low income group cannot afford it (Table 7).

Chi-square shows that there is a non-significant association between socio-economic status of respondents and their fruits eating habits that means respondents follow the instructions of physicians and eat fruits (Table 8). Chi-square value shows that there is a non significant association between socio-economic status of respondents and their vegetable eating habits (Table 9).

DISCUSSION:

The prevalence level of Hepatitis C in Pakistan is too much high. The causative factor, Hepatitis C Virus, is usually spread through blood transfusion. It has been considered that safe transfusion of blood can limitize the spread of HCV. It is also understood that there are about 15% of the patients which go into spontaneous resolution

of the disease and get recovery through their self immune system. Different age groups respond different to the infectious agents while socioeconomic status is also responsible for indirect immune response to the disease causative agents. Usually low socioeconomic status populations show that there are two types of problems which aggravate the disease spread in that population. Unbalanced and low dietary habits are responsible for low immune response which is usually effective in 15% patients. The 2nd aspect is the lack of information about the disease, its spread and even its effect on the healthy liver. The fatal consequences of HCV infection are still not known in the low socioeconomic status that is the major cause of negligence ultimately easy spread of disease causing agent [9].

Pakistan health departments as well as the research centers has been working on the disease cure and treatment through different ways including conventional and alternative treatment ways. Despite of all the treatment efforts, the importance of prevention is still there [9,10].

Gender wise study on males was carried out in Rawalpindi hospital that was indicating the ratio of male gender HCV infections to female gender HCV infections

[10]. The study of different risk factors for the HCV infection was done in Rawalpindi hospitals that was an indicative of HCV risk factors [11]. Another study was carried out in Karachi hospitals on serotyping of HCV in children [12]. Factors affecting sero prevalence of HCV in blood donors was also studied in north west Pakistan [13].

Present study showed different relationships with socioeconomic status of population with HCV. The results of this study show that the parameters used in the study are easily accessible and should be considered in the further studies. However, the socioeconomic status of the patients is currently being investigated. Therefore, it is suggested that further survey of the said relationship should be done.

CONCLUSION:

There was a significant association between egg and meat eating habits and the respondent socioeconomic status. There was non-significant association between socioeconomic status of respondents and their wheat, rice, fruits, vegetables, yogurt, milk and salad eating habits.

REFERENCES

1. Lindenbach BD, Rice CM, Jorgen H, Flaviviridae T (2001). The viruses. In : Knipe DM, Howley PM, editions. Fields virology. Philadelphia Lippincott-Ravana Publication. 4(1) 991-1041.
2. Wands JR (2004). Prevention of hepatocellular carcinoma. The New Eng J Med;351(15):1567-1570.
3. Hamid S, Umar M, Alma A, Siddiqui A, Qureshi H, Butt J (2004). PSG consensus statement on management of hepatitis C virus infection 2003. Journal Pak Med Assoc;54(3):146-150.
4. Maheshwari A, Ray S, Thuluvath PJ (2008). Acute Hepatitis C. division of Gastroenterology and Hepatology, Johns Hopkins University School of Medicine, Baltimore USA;372(9635):321-232.
5. Alter, MJ (2007). Epidemiology of hepatitis C virus infection. World J Gastroenterol;13(17):2436-2441
6. Khaliq AA, Smego RA (2005). Barber shaving and blood borne disease transmission in developing countries. South Afr Med J;95(2):94-96
7. Lam NC, Gotsch PB, Langan RC (2010). Caring for pregnant women and newborns with hepatitis B or C. J Am Fam Phys;82(10):1225-1229
8. Anonumous (2003). Nutrition care canadian guidelines for health care providers endorsed by: Canadian Association for the Study of the liver, Canadian Association of Hematology, Nurses Canadian Hemophilia Society, Canadian Liver Foundation.
9. Idrees MA, Lal (2008). High prevalence of hepatitis C virus infection in the largest province of Pakistan. J Dig Dis;9(2):95-103.
10. Akhtar S, Moatter T (2002). Prevalence and risk factors for intrafamilial transmission of hepatitis C virus in Karachi, Pakistan. J Viral Hep;9(4):309-314.
11. Bari A, Akhtar S (2001). Risk factors for hepatitis C virus infection in male adults in Rawalpindi-Islamabad, Pakistan. Trop Med Int Health;6(9):732-738.
12. Jafri W, Jafri N (2006). Hepatitis B and C: prevalence and risk factors associated with seropositivity among children in Karachi, Pakistan. BMC Infect Dis;6(1):101.
13. Khattak MN, Akhtar S (2008). Factors influencing Hepatitis C virus sero-prevalence among blood donors in north west Pakistan. J Pub Health Pol;29(2):207-225.

**Incidence of Hepatitis C in Different Age Groups and Socio Economic Status in Relation to Dietary Habits;
A Hospital Based Study**

Table 1: Distribution of hepatitis-C in human subjects of different age groups

Age	Frequency	Percent (%)
10-20	6	4.7%
21-30	37	28.9%
31-40	54	42.2%
41-50	27	21.1%
51 to above	4	3.1%
Total	128	

Table 2: Percentage Distribution of respondents according to their socio-economic status

Socio- economic status	Frequency	Percent (%)
Low	84	65.6
Middle	38	29.7
High	6	4.7
Total	128	100.0

Table 3: Association between socio-economic status of respondents and their wheat eating habits

Wheat eating habits	Socio- economic status			
	Low	Middle	High	Total
Wheat daily count% within wheat	83 66.4%	36 28.8%	6 4.8%	125 100.0%
Alternate count% within wheat	0 0%	2 100.0%	0 0%	2 100.0%
Monthly count% within wheat	1 100.0%	0 0%	0 0%	1 100.0%
Total count% within wheat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 5.309df = 4

Signification = 0.2

Table 4: Association between socio-economic status of respondents and their rice eating habits

Rice eating habits	Socio- economic status			
	Low	Middle	High	Total
Rice daily count% within rice	2 40.0%	3 60.0%	0 0%	5 100.0%
Alternate count% within rice	7 38.9%	9 50.0%	2 11.1%	18 100.0%
Weekly count% within rice	42 68.9%	16 26.2%	4 25.0%	61 100.0%
Monthly count% within rice	11 68.8%	4 25.0%	1 6.3%	16 100.0%
Never count% within rice	22 78.6%	6 21.4%	0 0%	28 100.0%
Total count% within rice	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 11.575

df=8

Signification= 0.17

Table 5: Association between socio-economic status of respondents and their milk Drinking habits

Milk drinking habits	Socio- economic status			
	Low	Middle	High	Total
Milk daily count% within milk	62 62.0%	32 32.0%	6 6.0%	100 100.0%
Alternate count% within milk	7 77.8%	2 22.2%	0 0%	9 100.0%
Weekly count% within milk	1 50.0%	1 50.0%	0 0%	2 100.0%
Never count% within milk	14 82.4%	3 17.6%	0 0%	17 100.0%
Total count% within milk	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 4.339

df= 6

Signification = 0.6631

Table 6: Association between socio-economic status of respondents and their egg eating habits

Egg eating habits	Socio- economic status			
	Low	Middle	High	Total
Egg daily count% within egg	4 36.4%	6 54.5%	1 9.1%	11 100.0%
Alternate count% within egg	0 0%	6 85.7%	1 14.3%	7 100.0%
Weekly count% within egg	8 53.3%	6 40.0%	1 6.7%	15 100.0%
Daily count% within egg	9 81.8%	2 18.2%	0 0%	11 100.0%
Never count% within egg	63 75.0%	18 21.4%	3 3.6%	84 100.0%
Total count% within egg	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 23.283

df=8

Signification=0. 003

Table 7: Association between socio-economic status of respondents and their meat eating habits

Meat eating habits	Socio- economic status			
	Low	Middle	High	Total
Meat daily count% within meat	1 12.5%	3 37.5%	4 50.0%	8 100.0%
Alternate count% within meat	9 37.5%	13 54.2%	2 8.3%	24 100.0%
Weekly count% within meat	28 71.8 5	11 28.2%	0 0%	39 100.0%
Monthly count% within meat	12 66.7%	6 33.3%	0 0%	18 100.0%
Never count% within meat	34 87.2%	5 12.8%	0 0%	39 100.0%
Total count% within meat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 58.401

df=8

Signification=0. 00

Table 8: Association between socio-economic status of respondents and their fruit eating habits

Fruit eating habits	Socio- economic status			
	Low	Middle	High	Total
Meat daily count% within meat	38 55.1%	25 36.2%	6 8.7%	69 100.0%
Alternate count% within meat	20 90.9%	2 90.1%	0 0%	22 100.0%
Weekly count% within meat	15 71.8 5	6 28.6%	0 0%	21 100.0%
Monthly count% within meat	4 66.7%	2 33.3%	0 0%	06 100.0%
Never count% within meat	7 70.0%	3 30.0%	0 0%	10 100.0%
Total count% within meat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 12.757

df = 8

Signification=0. 120

Table 9: Association between socio-economic status of respondents and their vegetable eating habits

Vegetable eating habits	Socio- economic status			
	Low	Middle	High	Total
Meat Daily count% within Meat	46 55.1%	19 36.2%	4 8.7%	69 100.0%
Alternate count% within meat	30 62.5%	16 33.3%	2 4.2%	48 100.0%
Weekly count% within meat	2 66.7%	1 33.3%	0 0%	3 100.0%
Monthly count% within meat	1 100.0 %	0 0%	0 0%	1 100.0%
Never count% within meat	5 71.4%	2 28.6%	0 0%	7 100.0%
Total count% within meat	84 65.6%	38 29.7%	6 4.7%	128 100.0%

Chi square = 1.660

df = 84

Signification = 0. .990