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RESEARCH ARTICLE

SEXUAL TRANSMISSION IN HCV

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ABSTRACT

Introduction: Chronic hepatitis C Virus (HCV) infection is responsible for almost one third cases of cirrhosis which require liver transplantation as the definitive treatment which in developing country like India, is not easily accessible due to limited centres and specialists for the same. There are various routes of transmission for HCV, many of them are well documented but certain like sexual one requires more in depth researches for determining its exact contribution in transmission. **Aims and Objectives:** To determine the sexual transmission in HCV confirmed patients. **Materials & Methods:** It was prospective study conducted at Department of Medical Gastroenterology, Post Graduate Institute of Medical Sciences (PGIMS), Rohtak, over a period of ten years from 1st January, 2014 to 31st December, 2024. Out of ten thousand patients of Chronic hepatitis C who reported in department in last ten years duration, 800 patients pre therapy HCV RNA was not detected; hence they were excluded from the study. Out of the remaining 9200 patients, 200 patients never got their spouses checked for HCV infection, hence they were also excluded from the study. The remaining 9000 confirmed patients of Chronic hepatitis C in whom spouses got checked for HCV antibody and RNA test were included in the study. **Results:** Out of the 9000 patients in whom spouses were checked for HCV infection, 635 (7.05%) were found to be HCV positive and 8365 (92.95%) were HCV negative. **Conclusion:** The sexual route cannot be missed as an important route, especially in those who have other co-risk factors.

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INTRODUCTION

Hepatitis C virus has various modes of transmission, some are well established but others require further research. The most route is through large or repeated direct percutaneous exposures to infected blood which include blood transfusion and injection drug use (IDU). The previous studies have clearly found association between disease acquisition and a history six months prior to illness of blood transfusions, IDU, health care activities with frequent exposure to blood, personal contacts of hepatitis C patients, multiple sexual partners or low socioeconomic status [1,2]. The stringent screening for HCV before blood transfusion and organ transplant has led to significant decline in transmission of HCV through these routes. The use of nucleic acid amplification for screening of HCV by many blood banks have further decreased its transmission through blood transfusion. IDU has been important route for transmission of HCV since last many years, as it is more rapidly acquired after initiation of intravenous drug use [3] and rates of HCV among young injecting drug-users are four times higher than HIV infection [4]. Certain studies of IDU have reported prevalence of HCV up to 90% [5] with seroconversion rates of 10-20 percent per year of injecting [6,7] and duration of injecting being the most important risk factor of HCV infection in this population [8]. The issue of

sexual transmission of HCV requires more clarity because it has been proven that HCV can be transmitted sexually, but its efficiency, in comparison to other routes requires further continuous researches. The monogamous sex partners appear to be the safest in regard to HCV transmission, chances of same get increased in is very low according to most studies. However, the likelihood of sexual transmission of HCV is increased in various conditions like multiple sex partners, anal sex, sexually transmitted disease, HIV, sex during menstruation or whenever blood is present. Low prevalence is seen in household contacts of HCV patient. Care providers should take precautions like not sharing items like razorblades, toothbrushes, nail clippers and properly covering open cuts or wounds. Health care workers who are frequently exposed to blood products and tissues like pathologist, dentist or clinical departments are at risk of developing HCV infection. The anti-HCV seroconversion rate after incidental needlestick injury from an HCV-positive source is 1.8% (range 0%-7%). An Italian study reported it to be 0.31% [9]. Approximately 10% of patients in most epidemiological studies, however, were not able to pin point source of infection have no identifiable source of infection [10]. The less common source of infection includes vertical transmission, parenteral transmission from medical or dental procedures, intranasal cocaine use, tattooing or body piercing.

Aims and Objectives: To determine the sexual transmission in HCV confirmed patients.

MATERIAL AND METHODS

It was prospective study conducted at Department of Medical Gastroenterology, Post Graduate Institute of Medical Sciences (PGIMS), Rohtak, over a period of ten years from 1st January, 2014 to 31st December, 2024. Out of ten thousand patients of Chronic hepatitis C who reported in department in last ten years duration, 800 patients pre therapy HCV RNA was not detected; hence they were excluded from the study. Out of the remaining 9200 patients, 2000 patients never got their spouses checked for HCV infection, hence they were also excluded from the study. The remaining 9000 confirmed patients of Chronic hepatitis C in whom spouses got checked for HCV antibody and RNA test were included in the study.

Statistical Analysis: All the data was entered in Microsoft Excel and was analysed using SPSS 15.0 version.

RESULTS

Out of ten thousand patients of Chronic hepatitis C who reported in department in last ten years duration, 800 patients pre therapy HCV RNA was not detected; hence they were excluded from the study. Out of the remaining 9200 patients, 200 patients never got their spouses checked for HCV infection, hence they were also excluded from the study. The remaining 9000 confirmed patients of Chronic hepatitis C in whom spouses got checked for HCV antibody and RNA test were included in the study. In this final pool of 9000 patients, there was male predominance i.e. 6030 (67%) while females were only 2970 (33%). Majority of patients belonged to poor socio-economic status and had rural background i.e. 5850 patients (65%). The maximum number of patients belonged to younger age group i.e. from 20-40 yrs of age group i.e. 5040 (56%) with minimal representation at extreme of age group. Out of the 9000 patients in whom spouses were checked for HCV infection, 635 (7.05%) were found to be HCV positive and 8365 (92.95%) were HCV negative. None of these 635 positive spouses admitted for polygamous relationship or intravenous drug abuse and out of these only four patients had HBV & HCV co-infection.

fibrosan, indoor admission in wards etc. Moreover, as a well-planned policy, hepatitis C patients are given consultation and treatment on daily basis without any waiting period. The appointment of dedicated team which included consultant, peer view support, pharmacist and data operator played a vital role in making our model treatment centre as one of the high flow centres in India where on daily basis around forty new and old patients of HCV come for consultation. There is lot of thrust on counselling which includes testing especially of the spouses and family members of HCV patients. This team effort has led to good social bonding with the patients who developed full faith in the treating team. This familial bonding led to overcome the hurdle of illiteracy and rural background in majority of patients who were treated for HCV. Thus, we were able to convince majority of patients for getting tested their spouses for HCV infection. The significant prevalence of 7.05% sexual transmission as seen in our study is in contrast with previous studies [11-14]. Heterosexual transmission of HCV occurs in only <5% when parenteral risk exposures is excluded [11]. One more study based on genotype concordance showed the infrequent occurrence of sexual transmission of 0,06% in monogamous heterosexual couples [14]. The sexual issue is very delicate and ethical issue between the couple in which one is HCV reactive. We have learnt in last many years by interacting with such couples, there are lots of apprehension and fear in them regarding transmission of HCV by sexual route. Sometimes, it has led to denial of sexual relations between the couple and even in some cases temporary or permanent separation by way of divorce. It is usually recommended that no contraception is required in monogamous relationship in HCV but our study has shown prevalence in spouses of 7.05%. It is difficult to confirm that all these were due to sexual transmission or there was contribution of factor of close contact also. The point is that whether there is any loss in advising barrier contraception during HCV treatment which is for short duration of 12-24 weeks, thus we recommend that couples with HCV should be recommended for barrier contraceptives during full course of treatment and till achievement of 12 weeks SVR. The issue of HCV couples who fail to achieve SVR, requirement of barrier contraceptive should be decided on case-to-case basis. The HCV positive couples who want to complete family should not avoid barrier contraceptives, rest should prefer using barrier contraceptive but if they do not wish for the same, then should remain in strict monogamous relationship. A good bond

Table 1. Showing Sex, Geographical and Age Distribution in Study Group

Patients	Male	Female	Rural	Urban	20-40 yrs	40-60 yrs	60-80 yrs
9000 (100%)	6030 (67%)	2970 (33%)	5850 (65%)	3150 (35%)	5040 (56%)	3060 (34%)	900 (10%)

Table 2. Showing HCV Positivity in Spouses in Study Group

Total Number of Patients	HCV Positive Spouse	HCV Negative Spouse
9000	635 (7.05%)	8365 (92.95%)

Table 3. Showing Parameters in HCV Positive Spouses in Study Group

HCV Positive Spouse	Polygamous Relationship	Intravenous Drug abuser	HBV-HCV Co-infection
635	0 (0%)	0 (0%)	4 (0,62%)

DISCUSSION

In our department due to implementation of Jeevan Rekha Project & National Viral Hepatitis Control Program (NVHCP) through which there is provision of total free treatment including viral load and other routine tests, drugs, endoscopy,

between the treating team and the HCV couple is must for relieving all the fears and issues, especially sexual one. A presence of female staff in treating team is beneficial, as female patient share their problems more comfortably with the same sex member of the treating team. In our team, keeping this in mind we have trained female nursing officers who

perform Fibrosan, assist in doing endoscopy and do even psychological counselling of HCV positive females or whose husband are HCV positive. Our pharmacist is also female and not only distribute drugs but also do additional psychotherapy of patients. It is frequently seen that patient and their relatives due to strong fear of HCV infection, repeatedly try to allay their fears by asking same question to different team members, thus, correct and same answers have to be given by all team members, for mental solace of patient and other family members. This Malhotra's Ashi-Angel approach by our team has brought fruitful result which is evidenced by extra-ordinary compliance and SVR rate in our treated patients [15].

CONCLUSION

The sexual route cannot be missed as an important route, especially in those who have other co-risk factors. It is an ethical echo also, thus has to be dealt very cautiously in patient and corresponding spouse very softly and intelligently.

Limitation of Study: In the present study, majority of patients may have denied polygamous sexual relationships due to personal inhibition and it may have led to exact interpretation of result because such group of patients may have been labelled to be having other route of infection instead of sexual one.

Conflict of Interest: The authors declare that there was no conflict of interest and no funding was taken from any source to conduct this research.

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