Turk J Gastroenterol 2009; 20 (2): 104-107

Awareness of hepatitis C virus transmission routes among patients, their household contacts and health care staff: Does perception match the reality?

Sağlık çalışanları, Hepatit C hastaları ve yakınları HCV'nin bulaşma yollarından ne kadar haberdar?

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Background/aims: *The worldwide seroprevalence of hepatitis C virus infection is around 3%. Since there is no effective vaccine, a major effort should be given to counselling both HCV-infected patients and those at risk of infection. Our aim was to determine the awareness of the transmission routes of hepatitis C virus in health care staff (HC staff), HCV-infected patients and their household contacts.* ***Methods:*** *A reliable and valid self-report inquiry consisting of 14 questions was completed by 397 HC staff (75 first-year, 75 last-year medical students, 89 dentists, 71 pharmacists, 87 nurses), 68 HCV-infected patients and 62 household contacts. All subjects were asked about the various modes of transmission of hepatitis C virus.* ***Results:*** *Ninety-seven percent of the HC staff, 85% of hepatitis C virus patients and 90% of household contacts were aware of the parenteral transmission of hepatitis C virus. Ninety percent of HC staff, 54% of hepatitis C virus patients and 66% of household contacts admitted the role of sexual transmission, with significant difference between the subgroups of HC staff ($p<0.05$). Fifteen percent of the first-year medical students did not consider sexual contact as a mode of transmission. Sharing personal items such as toothbrushes, razors and nail scissors were considered as risk factors for transmission by 94% of HC staff, 44% of hepatitis C virus patients and 71% of their household contacts. Skin contact, sharing clothes and using the same toilet were considered hazardous by 18%, 14% and 26% of the HC staff, respectively. Skin contact and using the same toilet were considered as risk factors (and/or were unknown) by 30% and 44% of the hepatitis C virus patients and by 36% and 51% of the household contacts, respectively.* ***Conclusions:*** *Transmission of hepatitis C virus by blood and blood products was better recognized in all groups tested, but the other means of infection were either overestimated (skin contact, sharing toilet and clothes) or under-recognized (blood-contaminated objects). More vigorous education programs are needed to increase awareness of hepatitis C virus in various risk groups in our country.*

Key words: C virus, transmission routes, health care staff, household contacts

Amaç: *Dünyada HCV seroprevalansı %3 civarındadır. HCV'ye karşı etkin bir aşı olmadığından bulaşmanın önlenmesi önem taşır. Bu çalışmanın amacı önemli bir toplum sorunu olan HCV enfeksiyonu ve bulaş yolları konusunda HCV hastalarının, hasta yakınlarının ve sağlık çalışanlarının ne kadar haberdar olduklarını araştırmaktır.* ***Yöntem:*** *Bu çalışma, anket aracılığı ile veri toplanan tanımlayıcı bir araştırmadır. Çalışmaya 397 sağlık çalışanı (75 tıp fakültesi 1. sınıf, 75 6. sınıf öğrencisi, 89 diş hekimi, 71 eczacı, 87 hemşire), 68 HCV hastası, 62 HCV' li hasta ile aynı evde yaşayan hasta yakını katılmıştır. Katılımcılara HCV'nin bulaşma yollarıyla ilgili sorular yönlendirilmiştir.* ***Bulgular:*** *Sağlık çalışanlarının %97'si, HCV'li hastaların %85'i ve hasta yakınlarının %90'ı HCV'nin parenteral bulaş riskinin farkındaydı. Sağlık çalışanlarının %90'ı, HCV'li hastaların %54'ü, yakınlarının ise %66'sı cinsel yolla hastalık bulaşma riskinden haberdardı. Sağlık çalışanlarının alt grupları arasında cinsel yolla bulaşın bilinmesi konusunda farklılık vardı ($p<0,05$). Tıp fakültesi 1. sınıf öğrencilerinin %15'i cinsel ilişkiyi bulaşma yolu olarak düşünmemekteydi. Diş fırçası, tıraş bıçağı ve tırnak makasının ortak kullanımının bulaşma riski taşıdığı sağlık çalışanlarının %94'ü, hastaların %44'ü ve yakınlarının %71'i tarafından kabul edildi. Sağlık çalışanları cilt teması, ortak giysi kullanımı ve tuvaleti ortak kullanmakla HCV'nin bulaşabileceğini sırasıyla %18, %14, %26 oranında düşünmekteydi. Cilt teması ve aynı tuvaleti kullanmayı hastalar sırasıyla %30 ve %44 oranında, yakınları sırasıyla %36 ve %51 oranında risk faktörü olarak görmekteydi ve/veya bu konuda bir fikirlerinin olmadığını belirttiler.* ***Sonuç:*** *Kan ve kan ürünleri ile HCV'nin bulaşabileceğinden tüm gruplar haberdardı. Fakat diğer bulaş yolları ya gereksiz önleme yol açmakta (cilt teması, aynı tuvaleti kullanma, giysilerin ortak kullanımı gibi) ya da iyi bilinmemekteydi (kanla kontamine olmuş kesici aletler gibi). Sonuç olarak ülkemizde toplumun HCV'nin önemi ve bulaşma yollarıyla ilgili daha programlı bir eğitime ihtiyacı vardır.*

Anahtar kelimeler: HCV, bulaş yolları, sağlık çalışanları, hasta yakınları

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Manuscript received: 26.06.2008 **Accepted:** 03.04.2009

INTRODUCTION

The estimated global prevalence of hepatitis C virus (HCV) is around 3% (1, 2). In the next two decades, HCV is expected to increase two- or threefold in prevalence and hence to be the leading indication for liver transplantation (3, 4). While waiting for a safe and effective vaccine able to confer protection against HCV, a public health strategy to control hepatitis C requires implementation of primary prevention measures that reduce risks of acquiring/transmitting HCV infection. Screening for safe blood and blood products, use of disposable syringes and needles and implementation of universal precautions have dramatically reduced the risk of infection in the medical setting. Health education, counselling and testing of individuals at risk are the recommended strategies for controlling HCV infection (5). HCV-infected patients are advised not to donate blood, body organs, other tissues or semen and not to share toothbrushes, razors or other personal care articles that might be contaminated with the blood of sufferers (6). Our aim was to determine the awareness of the transmission routes of HCV in health care (HC) staff, HCV-infected patients and their household contacts.

MATERIALS AND METHODS

A reliable and valid self-report inquiry consisting of 14 questions was completed by 397 HC staff (75 first-year, 75 last-year medical students, 89 dentists, 71 pharmacists, 87 nurses), 68 HCV-infected patients and 62 household contacts. All subjects were asked about the various modes of transmission of HCV, and the statistical package SPSS (version 11. 0) was used for all statistical analysis.

RESULTS

Characteristics of the study population are summarized in Table 1.

Ninety-seven percent of the HC staff was aware of the transmission route by blood and blood products, and no significant difference was detected between the subgroups ($p>0.05$). Ninety percent of the HC staff was aware of the sexual transmission route, with a significant difference detected between the subgroups ($p<0.05$). Fifteen percent of the first-year medical students did not consider sexual contact as a mode of transmission. The use of the same toilet, skin contact and sharing clothes were considered as risk factors by 26%, 18% and 14% of the HC staff, respectively. Among HC staff, 94% were aware of the transmission route by sharing personal items such as toothbrushes, razors and nail scissors; no significant difference was detected between subgroups (Table 2). Blood and blood products, sexual contact and sharing sharp objects were not considered as risk factors (and/or were unknown) for HCV transmission by 15%, 46% and 56% of the HCV-infected patients, respectively. Skin contact, using the same toilet and eating from the same plate were considered as risk factors (and/or were unknown) by 30%, 44% and 11% of the HCV-infected patients, respectively (Table 2). Blood and blood products, sexual contact and sharing nail scissors or sharp objects were not considered as risk factors (and/or were unknown) for HCV transmission by 10%, 31% and 29% of household contacts of the HCV-infected patients, respectively. Skin contact, using the same toilet and eating from the same plate were considered as risk factors (and/or were unknown) by 36%, 51% and 28% of the household contacts of HCV-infected patients, respectively (Table 2). Eighty-nine percent of the dentists who responded to our inquiry reported they always asked their patients whether they had known HBV or HCV infection prior to beginning the procedure. Only 48.9% of the HCV-infected patients were aware of transmission by dental treatments. 56.4% of household contacts of the HCV patients reported they had been tested for HCV infection.

DISCUSSION

Viral hepatitis is almost as old as humans, at least as old as known human history. However, during

Table 1. Demographic characteristics of the study population

	n	Female / male	Age
First-year medical students	75	37/38	18 (16-20)
Last-year medical students	75	29/46	24 (23-27)
Dentists	89	41/48	34 (23-61)
Pharmacists	71	52/19	35 (21-62)
Nurses	87	87/0	28 (21-47)
HCV-infected patients	68	27/41	48 (28-75)
Household contacts of patients	62	35/27	37 (21-80)

Table 2. Awareness of health care staff, hepatitis C virus (HCV)-infected patients and their household contacts of HCV transmission routes

	Blood transfusion (%)	Sexual contact (%)	Using the same toilet (%)	Skin contact (%)	Using the same toothbrush, razor or nail scissors (%)
Health care staff					
(Yes)	97	90*	26	18	94
(Unknown)	2.7	8.2	26	32	6
HCV-infected patients					
(Yes)	85	54	10.3	13.2	44
(Unknown)	6	20	34	17.6	34
Household contacts					
(Yes)	90.3	66	21	17.7	71
(Unknown)	6.5	12.9	30	19	18

$p<0.05$: Fifteen percent of first-year medical students did not consider sexual contact as a mode of transmission.

the last 10 years, considerable changes have occurred regarding the epidemiology and natural history of the disease. The estimated global prevalence is around 3-5%, which means that there are 170 million people infected with HCV. The mortality figures are projected to show a two- to three-fold increase over the next two decades as HCV-infected patients have the potential to develop cirrhosis, which will make it the leading indication for liver transplantation. These data point to the importance of viral hepatitis C being a significant public health problem worldwide (7). Health education, counselling and testing of individuals at risk provide opportunities for controlling HCV infection (5). An article from Ludhiana (8) showed that information on the virology, clinical presentation, diagnostic tests, and management approaches was lacking among a substantial proportion of family physicians. According to this article, 76% of doctors were aware of the fact that HCV is parenterally transmitted and 18% of the doctors were still reusing needles and syringes (8). In our study, 97% of the HC staff was aware of the transmission route by blood and blood products. No significant difference was detected between the subgroups. On the other hand, sexual route was not accepted as a risk factor by 15% of the first-year medical students.

In the study of Coulon et al. (9), human immunodeficiency virus (HIV)-positive pregnant women who had HCV coinfection did not know about HCV transmission routes. From 1996 to 2000, there was an outbreak of HBV and HCV infection in a pediatric oncology ward in Latvia. Epidemiological investigation excluded a common source of infection and indicated that spread of infection was most likely due to inappropriate infection control measures in the ward (10).

In our study, awareness of HCV transmission routes and misperceptions regarding risks for transmission showed significant differences between groups and HC staff subgroups. Transmission by blood and blood products was better recognized in all groups tested. Sexual route was accepted as an important risk factor by HC staff apart from 15% of the first-year medical students, who might represent a relatively well-educated part of the normal population. Although the risk of sexual transmission of the virus is low in steady partners (11), this route of transmission may be totally ignored by the general population. A better recognition of sexual transmission was achieved in students with advancing years of medical education. Other means of transmission were either overestimated (skin contact, sharing toilet, clothes) or under-recognized (sharing of blood-contaminated personal items), especially by the patients and their household contacts. In order to control the spread of HCV in the general population, it is crucial to educate HCV patients and their household contacts, especially about the transmission routes. On the other hand, the lack of sufficient knowledge and dissemination of wrong information about the disease may give rise to unnecessary isolation, which can lead to depression and social stigma in chronically infected patients.

In conclusion, more vigorous education programs in all layers of the population and at all levels are needed to raise awareness of HCV in our population.

Acknowledgement: The authors thank the following medical students for their kind contribution to the study: Duygu Zeytinoglu, Saliha Sagnic, Saynur Taneroglu, Ilker Arer.

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