Original Article

Prevalence of Hepatitis C Virus in Blood Donors

1. Saadat Parveen 2. Muhammad Ashraf 3. Muhammad Zafarullah

1. Classified Pathologist, CMH, Multan 2. Asstt. Prof. of Paeds Surgery, Children Hospital, Multan
3. Assoc. Prof. of Ophthalmology, NMC, Multan

ABSTRACT

Objective: To determine the prevalence of hepatitis C virus in healthy blood donors.
Study Design: A prospective descriptive study.
Place & duration: This study was conducted in the Pathology Department Combined Military Hospital, Multan within 3 years from 01-07-2007 to 30-06-2010.
Patients & method: A total of 18042 blood donors ranging from 18 – 55 years of age were screened for hepatitis C virus antibodies by ELISA method.
Results: Hepatitis C virus antibodies were positive in 602 (3.3%)
Conclusion: Seroprevalence of hepatitis C is high even in healthy young blood donors.
Keywords: Serological screening, Hepatitis C, Hematology.

INTRODUCTION

Since the discovery in 1989, hepatitis C virus (HCV) has been recognized as a major cause of chronic liver disease throughout the world. According to WHO report Seroprevalence of hepatitis C is 2% representing about 123 million people [(1)]. It is increasing day by day especially in under developed and developing countries. It is most common chronic blood born infection in USA [(2)]. As there is no vaccine and no post-exposure prophylxis for HCV, focus of primary prevention efforts should be safe blood supply after proper screening, safe injection practices and safety measures for health care providers.

PATIENTS AND METHODS

This study was carried out at Hematology section of Department of Pathology, Combined Military Hospital, Multan, for a period of three years from 01-07-2007 to 30-06-2010. All healthy blood donors coming for blood donation for their own patients, exchange of blood groups and volunteers of age between 18 – 55 years were included in study. Screening of all donors for hepatitis C, hepatitis B and human immunodeficiency virus by ELISA technique was performed. The sero positive persons were informed about it. Results were recorded at the end of study and record of hepatitis C positive cases was analyzed separately.

RESULTS

Screening of total number of 18042 donors between 18 – 55 years of age was performed. Out of them 16138 (90%) donors were males and 1804 (10%) donors were females. HCV positive cases were 602 (3.3%). WHO reported HCV prevalence in most populous nations as below:

Country	Sample size	HCV prevalence %
China	68000	3.2%
USA	21214	1.8%
Indonesia	7572	2.1%
Brazil	66414	1.1%
Pakistan	103858	4.0%
Present Study	**18042**	**3.3%**

Table No. 1: Male to Female Ratio in Screened Persons.

Male	Female
90%	10%

Table No. 2 Hepatitis C Prevalence in various age groups.

Age in year	Percentage
18-25	2.0%
25-35	3.6%
35-45	4.2%
45-55	2.5%

Table No. 3: Prevalence in Gender.

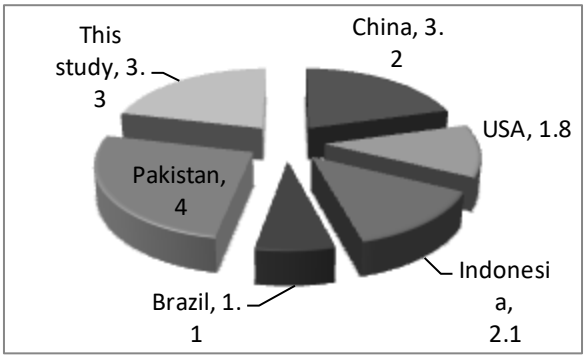
Male	Female
3.6%	2.8%

DISCUSSION

Hepatitis C is endemic in most parts of World. According to various studies its prevalence ranges from 0.4% to 14.4% in different parts of World [(3)]. It is more common in developing countries as compared to developed World [(4)]. According to local literature Seroprevalence of Anti HCV antibodies varies from 4% to 7% [(5,6)]. Incidence is increasing day by day. Studies from Karachi by Shirazi et, al [(7)] and Zubia et, al [(8)], is

even higher upto 9% and 11% respectively. According to WHO reports data on World Wide Prevalence of HCV, it is less common in less populated as Germany 0.6% [9], Canada 0.8% [10], France 1.1% [11] and Australia 1.1% [12]. Low rates are reported in populous though developed countries as USA 1.8% [13], Japan 2.3% [14], Italy 2.2% [15], China 3.2% [16], Indonesia 2.1% [17] Pakistan 6.5% [18] and Egypt has the highest reported rate of 22% [19].

Table No. 4: Comparison of Percentage in Various populations in the different countries.



RECOMMENDATIONS

On the basis of above mentioned facts, following measures are recommended.

- Public health education regarding hepatitis C, its risk factor, complications, mode of transmission, preventive measures and treatment of seropositive carriers.
- Every person should be discussed for hepatitis.
- Prevention & protection measures for health care providers.
- Use of disposable items. In case of non disposable separate equipments for seropositive cases and cleaning with anti viral chemicals after every use.
- Disposable items should be destroyed in incinerator.

CONCLUSION

Seroprevalence of hepatitis C is high and increasing day by day especially in developing and populous areas.
Protocol should be prepared preferably by Government and World Health Organizations for screening of every individual, protective and preventive measures and treatment of carriers.

REFERENCES

1. Perz JF, Farrington LA, Pecoraro C, Hutin YJF, Armstrong GL. Estumated global prevalence of hepatitis C virus infection, 42nd Annual Meeting of the Infections Diseases Society of America; 2004 Sept 30 – Oct 3; Boston MA, USA.
2. Colin WS, Lyn F, Miriam JA. Global epidemiology of hepatitis C virus infection. Lancet J of infec diseases 2005. 558 – 67.
3. Chaudhary A, Santra A, Chaudhary S, Dhali GK, Maity SG, et al. Hepatitis C virus infection in general population: A community based study in west Bengal India. Hepatology 2003; 37:802-9.
4. Aziz S, Memon A, Tily HI, Rasheed K, Jehangir K, Quraishy MS. Prevalence of HIV, Hepatitis B & C amongst health workers of Civil Hospital Karachi. J Pak Med Assoc 2003; 53:136-40.
5. Malik IA, Khan SA, Tariq WUZ. Hepatitis C virus in prespective: where do we stand, (editorial) J Coll Phys Surg Pak. 1996; 6(4)185-6.
6. Umer M, Bushra HT, Shuaib A, Anwar A, Shah NS. Spectrum of chronic liver disease due to HCV infection. J Coll Phys Surg Pak 1999; 9(4): 234-7.
7. Shirazi B, Jeffery AH, Kishwar M and Shahid Shamim M. Screening for hepatitis B & C in surgical patients. J Surg Pak (international) 2004; 9(4):10 – 13.
8. Zubia M, Masood J, Rehan AK etal. Screening for hepatitis B & C: A routine investigation Pak J Med Sci 2005; 21(4): 455-59.
9. Palizsch KD. Hottentrager B. Schlottmann K. et al. Prevalence of antibodies against hepatitis C virus in the adult German population. Eur J Gastroenterol Hepatol 1999;11: 1215 – 20.
10. Zou S. Tepper M, El Saddandy S. Prediction of hepatitis C burdenon Canada. Cun J Gustroenterol 2000; 14: 575-80.
11. Desenclos JC. Epidermiology of hepatitis C. Revue du Praticien 2000; 50: 1066-70.
12. Law MG, Dore GJ, Bath N, et al. Modelling hepatitis C virus incidence, prevalence, and long term sequelae in Australia, 2001. Int J Epidemiol 2003; 32: 717-724.
13. Alter MJ. Kruszon Moran D, Nainan OV, et al. The prevalence of hepatitis C virus infection in the United states, 1988 through 1994. N Engl J Med 1999; 341: 556-62.
14. Ohshima S. Komatsu M, Nakane K, et al. latrogenic GB virus C/ hepatitis G virus infection in an area endemic for hepatitis C virus. J Hosp Infect 2000; 44: 179-85.
15. Puro V, Petrosillo N, Ippolito G, Aloisi MS, Boumis E, Rava L. Occupational hepatitis C virus infection in Italian health care workers. AMJ Public Health 1995; 85: 1272-75.
16. Xia GL, CB, Cao HL, et al. Prevalence of hepatitis B and C virus infections in the general Chinese population: results from a nationwide cross-sectional seroepidemiologic study of hepatitis A, Hepatology Communications 1996; 5: 62-73

17. Sulaiman HA, Julitasari, Sie A, et al. Prevalence of hepatitis B and C viruses in healthy Indonesian blood donors. Trans R Soc Trop Med Hyg 1995; 89: 167-70.
18. Khattak ME, Salamat N, Bhatti FA, Qureshi TZ. Seroprevalence of hepatitis B, C and HIV in blood donors in northern Pakistan. J Pak Med Assoc 200; 52: 398-402.
19. Population Reference Bureau. Egypt datasheet. http://www.prb.org/TemplateTop.cfm?Sectin= Data_by_Country&template=/customsource/countryprofile/countryprofiledispaly.cfm&Country=268 (accessed July 25, 2005).

Address for Corresponding Author:
Saadat Parveen
236, Forte Colony Shershah Road,
Multan Cantt.
Cell: 0300-8639700