Original Article

SEROPREVALENCE OF HEPATITIS-C CARRIERS AMONG CHILDREN BETWEEN 6 MONTHS TO 15 YEARS OF AGE IN DERA GHAZI KHAN

Muhammad Saleem Channer[*], Adeen Akram[**], Muhammad Arslan Saleem[***], Suffiyan Saleem[****]
[*]Associate Professor & Head of Community Medicine Department Ghazi Khan Medical College, Dera Ghazi Khan
[**]5th Year MBBS Student, Ghazi Khan Medical College Dera Ghazi Khan
[***]MBBS, Ex-House Officer, Bahawal Victoria Hospital, Bahawalpur
[****]BDS (de-Mont), FCPS-I, Post Graduate Resident Nishtar Institute of Dentistry, Multan

ABSTRACT:

OBJECTIVE: To find out the seroprevalence of viral hepatitis -C carriers among children in Dera Ghazi Khan.

DESIGN: An observational descriptive cross-sectional study.

SETTING: Dera Ghazi Khan urban slums and Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan.

SUBJECTS: Two hundred seventy-five children admitted to Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan and those in urban slums of Dera Ghazi Khan City.

MAIN OUTCOME MEASURES: Seroprevalence of viral hepatitis-C carriers.

RESULTS: Mean age of children in our study was 7.5 years. Males were 54%. The number of children detected as carriers of Hepatitis-C was 08 (2.9%). Out of 08 carriers, 04 had successfully completed their EPI schedule, 02 received incomplete vaccination while 02 carriers did not receive any EPI schedule vaccination. Just one seropositive case gave past history of jaundice in his early neonatal period for which he got exchange transfusion. Three of the carriers shared piercing of nose or ears by a common (contaminated) needle. There were no signs suggestive of chronic liver disease in any carrier.

CONCLUSION: Overall seroprevalence of viral hepatitis-C carriers in Dera Ghazi Khan is 2.90%. There is a large cohort of seronegative children. They need to be protected against Hepatitis-C virus infection through awareness campaigns.

KEY WORDS: Urban slums, seroprevalence, Hepatitis-C carriers, Anti-HCV, EPI.

INTRODUCTION:

Viral hepatitis-C is a big global public health problem, especially in the developing countries. One of the leading complications of this infection is the development of "Carrier State"

"Carrier" is a person who harbours the infectious agent (HCV here) in his body without himself suffering from signs and symptoms of the disease and is capable of transmitting the agent to others and therefore is the potential source of infection to the community[1].

The major sources of HCV infection are the infected blood or blood products; saliva; urine; semen and vaginal secretions. Carriers, in addition to being a risk of Hepatitis-C infection to other, are themselves at a higher risk to develop chronic liver disease and hepatoma[2].

One of the important serological markers for the detection of HCV carriers is the Anti-HCV

Corresponding Author:
Dr. Muhammad Saleem Channar
2-A, Faisal Block, Sajid Awan Town, Bahawalpur
Email : saleemchanner@yahoo.com
Cell # 0343-718004

antibody. The Anti-HCV carrier rate is 0.1 % in UK; 7% in Eastern Saudi Arabia and 15% in South East Asia[3]. In Pakistan, 3-4% of healthy subjects are Anti-HCV positive. In blood donors at Islamabad Pakistan, the prevalence rate is reported to be 7%[4].

Carrier rate is more common in immunocompromised persons; those receiving frequent blood transfusions (like thalassemia patients); drug addicts and patients with the Down Syndrome[5]. The only cost-effective remedy for children with viral hepatitis-C is prevention (since interferon is recommended for persons above18 years)[6].

Aim of the present study was to find out the prevalence of anti-HCV antibody carriers among pediatrics population in Dera Ghazi Khan Urban slums and those attending the Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan during the period from Mid Sep. 2014 to Mid Jan. 2015.

SUBJECTS AND METHODOLOGY:

STUDY DESIGN:

This was an observational cross-sectional study carried out in Urban Slums of Dera Ghazi Khan and in Paediatric Medicine unit in Teaching Hospital Dera Ghazi Khan.

STUDY POPULATION:

Keeping in view the available resources and feasibility, a sample of 276 children having ages between 6 months to 15 years was taken.

SAMPLING TECHNIQUE:

Non-probability quota sampling technique: A quota of 56 children from the Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan and 55 each from Urban slums in the East; West; North and South of Dera Ghazi Khan city was taken by a team of doctors working in Community Medicine Department in Ghazi Khan Medical College, Dera Ghazi Khan and Paediatric Medicine Ward in Teaching Hospital Dera Ghazi Khan.

MATERIAL:

In addition to collection of blood samples of children, the background information was also collected with the help of a preformed questionnaire. The samples were stored and transported while strictly maintaining the cold chain till these were delivered to the Microbiology Department in Ghazi Khan Medical College, Dera Ghazi Khan for testing them in batches by the latest (immunochromatography technique). Positive samples were further subjected to ELIZA test for confirmation.

RESULTS:

Sample size of the study population was 276 (n=276) children ranging between 6 months to 15 years of age. All belonged to the low and middle socio-economic classes of Urban slums. Of the total children studied, 149 (54%) were male and 127 (46%) females. Majority (42%) were between 6 months to 5 years of age (table-I).

TABLE –I *Age & Sex distribution of the children*

Age (in years)	Sex		Total	Percentage
	Male	Females		
0.6-5	64	52	116	42.00%
06-10	50	48	98	35.00%
11-15	35	27	62	23.00%
Total	**149**	**127**	**276**	**100%**

TABLE II *Seroprevalence of Hepatitis-C carriers*

Age (in years)	No. of cases		Total	Percentage
	Male	Female		
0.6-5	2	1	3	1.08%
06-10	2	1	3	1.08%
11-15	1	1	2	0.74%
Total	**5**	**3**	**8**	**2.90%**

*Results are significant at p-value = 0.05

The number of children detected as carriers of HCV was 08 (05 males and 03 females).

With an overall prevalence rate of 2.90% (08 out of 276) HCV carriers in different age groups is given in table-II. Three children (1.08%) were between ages 0.6-5 years; 03 (1.08%) were between 6-10 years and the remainder 02 (0.7%) were between 11-15 years of age.

Out of the eight positive confirmed carriers of HCV infection, 04 seropositive cases had successfully completed their EPI schedule, 02 had received no EPI schedule vaccination, while rest of the 02 carriers got incomplete vaccination against Hepatitis-B.

Merely, in one case, past history of jaundice in his early neonatal period was positive, for which he had undergone exchange transfusion. Three of the carriers, shared piercing of their noses or ears by a common (contaminated) needle. There were no signs suggestive of chronic liver disease in any carrier.

DISCUSSION:

Seroprevalence of Hepatitis – C Carriers in our study was 2.90% (8/276). This was quite comparable with earlier studies carried out in Pakistan[7,10]. In a hospital based study carried out at Lahore, the carriers rate of viral hepatitis-C infection was 2.93%[7]. Another survey conducted at national level in Pakistan the prevalence rate was found out to be 2.97%[8]. A study conducted recently at Children Hospital and the Institute of Child Health Lahore, the prevalence of HCV carrier was estimated to 2.04%[6]. However, the prevalence of HC carriers in adult population in a survey conducted at Bahawalpur was quite high i.e. 3.76%[2]. In our study, the carrier rate in both the sexes of children was almost similar and comparable to other studies conducted in Pakistan[6,10]. Established routes of HCV transmission include, perinatal mixing of the contaminated blood of the mother with that of the baby; tattooing with contaminated needles, transfusion of infected blood to healthy recipients; medication through parenteral routes with contaminated needle; through sexual contact; use of contaminated needles for piercing of the ears and noses of persons[9]. Perhaps carriers in our study most likely contracted infection perinatally and by sharing of contaminated needles.

In this study 268 children were seronegative and were therefore at higher risk for contracting Hepatitis-C infection. This huge cohort of seronegative children could be protected from getting Hepatitis-C infection by Health Education of masses. It is therefore recommended that awareness programs for Hepatitis-C may be further enhanced and intensified. Further research into this problem is need of the hour. Also intensification of creation of awareness campaigns about this fatal disease at mass level through mass media, seminars, symposia and walks is urgently needed.

REFERENCES:

1. K. Park. Text book of Preventive and Social Medicine, 22nd edition, M/s. Banarsidas Bhonot publishers, Jabal Pur, India, 2013;84:
2. Yousuf M. & Yousuf N. Seroprevalence of Hepatitis-C carriers among Healthcare workers. Pak Jour of Med Res, 2014;27:168.
3. Talukdar M.A. et al. Prevalence of Hepatitis-C carriers in males. Saudi Arabians J Infectious diseases, 2011;146:446.
4. Kazmi K, Ghafoor A & Burney M. Prevalence of HBs antigen among blood donors of Islamabad Pakistan. PJMR, 2012;24:181-3.
5. Robins S.F.,Cotron R.S. & Kumar V. Pathological basis of disease 8th edition Philadelphia. WB Saunders, 2010;904.

6. M.A. Khan et al. Seroprevalence of Hepatitis-C in children, Pakistan paediatric Journal. 2013;22(2):75-77.
7. H.I. Khan. A study of seroprevalence of Hepatitis-B & C in mothers and children in Lahore, Pakistan Paediatric Journal, 2012;20(4):163-66.
8. Agbootwala M. et al: hepatitis A, B. and C seroprevalence of Pakistan, Indian J. Paediatric, 2010;61(5):545-49.
9. Behrman, Kligmen, Arvin, Nelson Textbook of Paediatric; 17th edition WB Saunder Co-publishers Philadelphia, 2006:912.
10. Khan AA, Sarwar S. Response to combination therapy in Hepatitis virus C genotype 2 and 3. J Coll Physicians Surg Pak 2009

Submitted for publication: 22-10-2015

Accepted for publication: 20-02-2017

SR #	AUTHOR NAME	CONTRIBUTION
1	Muhammad Saleem Channer	Manuscript writing
2	Adeen Akram	Data collection
3	Muhammad Arsalan Saleem	Data analysis
4	Suffiyan Saleem	Manuscript editing, complition

IMAM ALI ONCE SAID TO HIS SON IMAM HASSAN, MY SON, LEARN FOUR THINGS FROM ME AND THROUGH THEM YOU WILL LEARN FOUR MORE. IF YOU KEEP THEM IN MIND YOUR ACTIONS WILL NOT BRING ANY HARM TO YOU: THE GREATEST WEALTH IS WISDOM; THE GREATEST POVERTY IS STUPIDITY; THE WORST UNSOCIABLENESS IS THAT OF VANITY AND SELF-GLORIFICATION; AND THE BEST NOBILITY OF DESCENT EXHIBITS ITSELF IN POLITENESS AND IN REFINEMENT OF MANNER. THE NEXT FOUR THINGS, MY SON, ARE: "DO NOT MAKE FRIENDSHIP WITH A FOOL BECAUSE WHEN HE WILL TRY TO DO YOU GOOD HE WILL DO YOU HARM; DO NOT MAKE A MISER YOUR FRIEND BECAUSE HE WILL RUN AWAY FROM YOU AT THE TIME OF YOUR DIRE NEED; DO NOT BE FRIENDLY WITH A VICIOUS AND WICKED PERSON BECAUSE HE WILL SELL YOU AND YOUR FRIENDSHIP AT THE CHEAPEST PRICE AND DO NOT MAKE FRIEND OF A LIAR BECAUSE LIKE A MIRAGE HE WILL MAKE YOU VISUALIZE VERY NEAR THE THINGS WHICH LIE AT A GREAT DISTANCE AND WILL MAKE YOU SEE AT THE GREAT DISTANCE THE THINGS WHICH ARE NEAR TO YOU".

Hazrat Ali (Karmulha Wajhay)