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Research Article

A CROSS-SECTIONAL RESEARCH TO DETERMINE HBV & HCV PREVALENCE IN THE INDOOR & OUTDOOR PATIENTS IN COMPARISON WITH OTHER RESEARCH STUDIES¹Saira Khalid, ²Saba Irshad, ³Muhammad Hamid Chand¹Lahore General Hospital Lahore²Allied Hospital Faisalabad³Akhtar Saeed Trust Hospital EME Lahore**Abstract:**

Objective: We aimed to assess the Hepatitis "B" surface antigen frequency and the frequency of Hepatitis "C" antibodies in the patients who were presented at the hospital.

Subjects & Methods: Our cross-sectional research was carried out at Sir Ganga Ram Hospital, Lahore in the timeframe of February 2016 to July 2017 on a total of 16822 selected patients. Every patient was drained (3 mm) blood sample from venous, separation of serum was made and preserved in the refrigerator. Clinical tests were carried out to assess Anti-HCV antibodies and HBsAg with the help of ELISA Kit and documented every outcome.

Results: Total 16822 cases were studied in the research timeframe. The prevalence of Anti-HCV was 16.06%, HBsAg was 3.92% and (Anti-HCV + HBsAg) was 0.76% respectively. Male to the female frequency of HBsAg was respectively 1.45% and 2.46%; whereas, Anti-HCV positive antibodies in males and females was respectively 8.23% and 7.82%. Positive co-infection was observed in males as 0.45% and females as 0.30%. The overall proportion of male to female was respectively observed for HBsAg (1.5:1), Anti-HCV (1:1.08) and co-infection (1.2:1). HCV and HBsAg infected both males and females but the dominance of males was observed in our research outcomes.

Conclusion: Biases of the population was the major reason for Anti-HCV and HBsAg positive cases. There is an emergent need for the awareness development of Anti-HCV and HBsAg in the general and private sector hospitals.

Keywords: Antigen, Hepatitis "B" Virus (HBV), Hepatitis "C" Virus (HCV), Antibody and Co-infection.

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INTRODUCTION:

All over the world especially in Pakistan among various major health care issues, the incidence of HBV and HCV is also dominant [1]. These both viruses were isolated in 1963 and 1989 respectively [2, 3]. Majority of mortality and morbidity is caused by these two infections in the form of cirrhosis, liver disease and hepatocellular carcinoma [4].

HBV and HCV pose a serious threat all around the world [1]. Every year the count is increasing as HBV and HCV has affected 350 and 170 million respectively [3 – 6]. Every year the burden of this viral disease is increasing in Pakistan. According to the national health surveys of 2007 – 08 the HBV and HCV prevalence was reported respectively 2.5% and 4.9%. Every area and province are affected by HCV as its prevalence is reported in Baluchistan, KPK, Punjab and Sindh respectively 1.5%, 1.1%, 6.7% and 5% and HBV prevalence is reported in Baluchistan, KPK, Punjab and Sindh respectively 4.3%, 1.3%, 2.4% and 2.5% [7]. The disease has its own transmission factors which include blood transfusion, thalassemia, hemodialysis, contaminated syringes, barbers, unsafe sexual practices and tattooing [8]. Previously research studies have reported the prevalence of HBV and HCV respectively (3% – 10%) and (2% – 14%) [9 – 12].

Carrier rate in the general population about HBV and HCV is reported respectively (8% – 10%) and 6% [13 – 15]. This rate is higher than the reported rate of Africa, South Europe, North Europe & USA and Scandinavia & England respectively (1.7% – 5.2%), (0% – 1.9%), (0% – 1.6%) and (0% – 1.5%) [16 – 17].

The parental route is commonly involved in the transmission of infection. The high prevalence rate is reported in the general population about the seroprevalence. All those who opted for the management of disease were also in numbers and hospitalized as well. We aimed to assess Hepatitis “B” surface antigen frequency and the frequency of Hepatitis “C” antibodies in the patients who were presented at the hospital.

SUBJECTS AND METHODS:

Our cross-sectional research was carried out at Sir Ganga Ram Hospital, Lahore in the timeframe of February 2016 to July 2017 on a total of 16822 selected patients. Every patient was drained (3 mm) blood sample from venous, separation of serum was made and preserved in the refrigerator. Clinical tests were carried out to assess Anti-HCV antibodies and HBsAg with the help of ELISA Kit and documented every outcome.

RESULTS:

A total of 16822 patients who were studied at the Department of Microbiology had total 8871 males (52.73%) and 7951 females (47.27%). The proportion of indoor and outdoor patients was respectively 8264 indoor cases (49.10%) and 8564 outdoor cases (50.90%). An overall frequency of Anti-HCV, HBV, HBV and HCV coinfection was reported respectively 16.06%, 3.92% and 0.76%. HBV positive cases were reported respectively 2.46% in males and 1.45% I females with a dominance of the male population. Anti-HCV positive cases in males were 8.24% and 7.82% in females. HBV & HCV coinfecting male to female cases were respectively 0.46% and 0.30% with a ratio of (1.2:1). Detailed outcomes analysis has been carried out in the given tabular data.

Table – I: Gender Distribution (16822)

| Gender | Number | Percentage |
|--------|--------|------------|
| Male | 8871 | 52.73 |
| Female | 7951 | 47.26 |

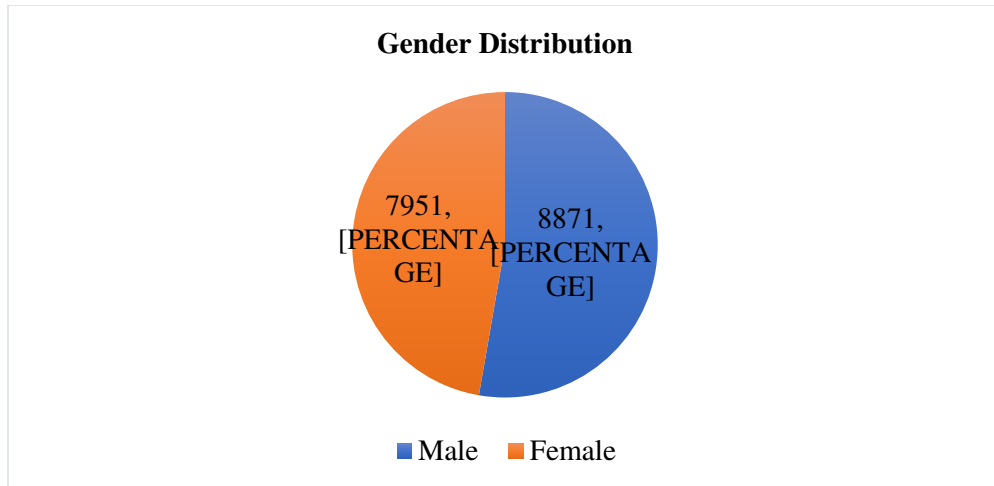
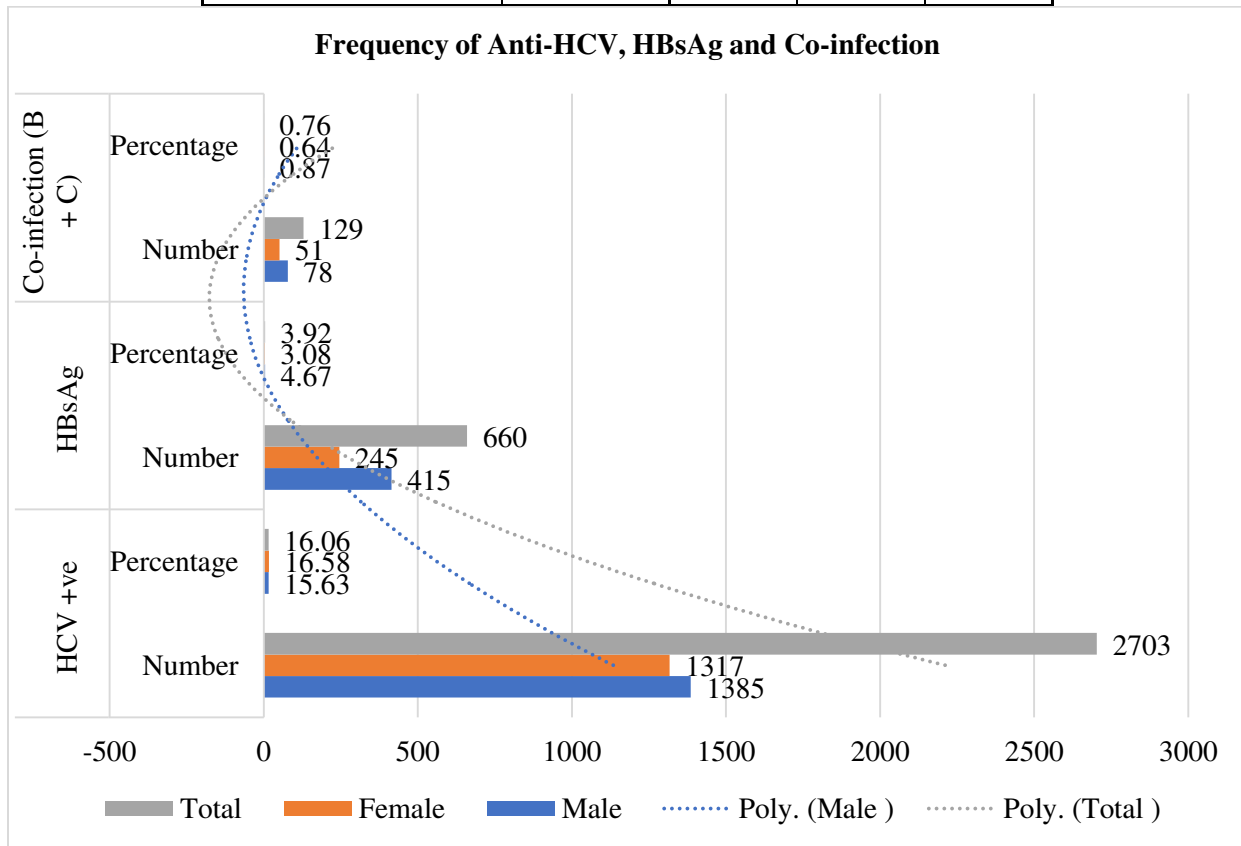


Table – II: Frequency of Anti-HCV, HBsAg and Co-infection

| Infection | | Male | Female | Total |
|----------------------|------------|-------|--------|-------|
| HCV +ve | Number | 1385 | 1317 | 2703 |
| | Percentage | 15.63 | 16.58 | 16.06 |
| HBsAg | Number | 415 | 245 | 660 |
| | Percentage | 4.67 | 3.08 | 3.92 |
| Co-infection (B + C) | Number | 78 | 51 | 129 |
| | Percentage | 0.87 | 0.64 | 0.76 |



DISCUSSION:

HBV and HCV are highly affecting Pakistani population and it varies from 4% – 25% among various settings of the population as presented in a seminar back in 2003 held at Karachi [18]. National surveys defined the rate of both infections in Pakistan [19]. As per the reports of WHO, Pakistan is in the intermediate zone about these both infections [20 – 21]. The higher prevalence rate was having been observed about HBV (3.92%) and HCV (16.06%). Cases of both infections were referred from indoor and outdoor patient's department. Variety of patients were reported from all over the country that included almost every province.

In a comparative analysis of various local studies, the HBV and HCV prevalence were reported respectively 5.9% and 12.8% [22]. Other authors have also reported Anti-HCV and HBsAg prevalence in respective ranges of (2% – 13.5%) and (3% – 5%) [23, 24]. A research study was held at national level and it studied the population of various provinces and reported HBsAg prevalence in AJK & Baluchistan, NWFP, Sindh and Punjab respectively 1.6%, 1.8%, 5% and 3.7%. Anti-HCV prevalence in Baluchistan, NWFP, Sindh and Punjab were respectively 1.7%, 0.9%, 4.1% and 1.9% [23]. Previously research studies have reported the prevalence of HBV and HCV respectively (3% – 10%) and (2% – 14%) [12]. We also compared our outcomes with other research studies which have been referred to in this research about the outcomes of HCV and HBV prevalence [25].

National surveys reported HCV and HBV prevalence about (0.1%) and (1.1%); whereas, in this research it was about (0.76%) [22]. These outcomes are of prime concern as the infections lead to higher rates of mortality and morbidity.

CONCLUSION:

Biases of the population were the major reason for Anti-HCV and HBsAg positive cases. There is an emergent need for the awareness development of Anti-HCV and HBsAg in the general and private sector hospitals. Awareness programs should aim at the staff working in the Liver transplant centres and gastrointestinal department. Mode of transmission and disease spread needs proper attention by the healthcare professionals. The spread of the disease is also to be curtailed at all levels. Preventive measurements and timely treatment can be helpful in the reduction of disease.

REFERENCES:

1. Lok AS, McMahon BJ. Chronic hepatitis B. *Hepatology* 2007; 45: 507-39.
2. WHO. *Weekly Epidemiology Rec* 2002; 77: 41.
3. Khan RAW, Ahmed W, Alam SE, Arif A. Screening of HBsAg and anti HCV from tertiary care, private and public sector hospitals. *Pak J Med Res* 2011; 50(1): 20-23.
4. Butt T, Amin MS. Seroprevalence of hepatitis B and C infections among young adult males in Pakistan. *Eastern Mediterr Health J* 2008;14: 791-7.
5. Waheed Y, Shafi T, Safi SZ, Qadri I. Hepatitis C virus in Pakistan: a systematic review of prevalence, genotypes and risk factors. *World J Gastroenterol* 2009; 15: 5647-53.
6. Abbas Z, Shazi L, Jafri W. Prevalence of hepatitis B in individuals screened during a country wide. *J Coll Physicians Surg Pak* 2006; 16: 495.
7. Idenex Pharmaceuticals -Hepatitis Fact Sheet 10/06. Available from: URL www.idenix.com/hepc/fact/Idenix_HCV_Background.pdf. Accessed on April 10, 2009.
8. Qureshi H, Bile KM, Jooma R, Alam SE, Afridi HUR. Prevalence of hepatitis B and C viral infection in Pakistan: findings of a national survey appealing for effective prevention and control measures. *Eastern Mediterr Health J* 2010; 16 (supp): S15-23.
9. Luby S. The relationship between therapeutic infections and high prevalence of Hepatitis C infection in Hafizabad, Pakistan. *Epidemiol infect* 1997; 119: 349 56.
10. Zuberi SJ. An overview of HBV/HCV in Pakistan. *Pakistan J Med Res* 1998; 37; S12.
11. Mujeeb SA, Amir K, Mehmood K. Seroprevalence of HBV, HCV and HIV infection among college going first time voluntary blood donors. *J Pak Med Assoc* 2000; 50: 269-70.
12. Asif N, Khokar N, Ilahi F. Seroprevalence of HBV, HCV and HIV infection among voluntary non-remunerated and replacement donors in Northern Pakistan. *Pak J Med Sci* 2004; 20: 24-8.
13. Khokar N, Gill ML, Malik GJ. General seroprevalence of hepatitis C and hepatitis B virus infection in population. *J Coll Physicians Surg Pak* 2004; 14: 534-6.
14. Zuberi SJ, Lodhi TZ, Samad F. Prevalence of HBsAg and antibody in healthy subjects and patients with liver disease. *J Pak Med Assoc* 1978; 28: 2-3.
15. Muhammad N, Jan AM. Frequency of hepatitis C infection in District Bunir (NWFP). *J Coll*

- Physicians Surg Pak 2005; 15: 11-4.
16. Khan H, Khan N, Niazi R, Adam T, Yaqoob A. Seroprevalence of hepatitis C in Pakistanis visiting and admitted at the Pakistan Institute of Medical Sciences, Islamabad. *J Surg* 2001;21: 22-6.
 17. Estaban JI, Estaban R. Hepatitis C virus antibodies among risk group in Spain. *Lancet* 1989; 11: 297-8.
 18. Anonymous. Prevalence of hepatitis C antibody carrier in blood donors. *Hepatology* 1992; 16: 547-8.
 19. Zuberi Z. Hepatitis B: Pakistani perspective; National Consensus conference on guidelines for hepatitis B and C, Karachi, August 2003.
 20. PMRC. Prevalence of hepatitis B & C in Pakistan, Islamabad. Pakistan Medical Research Council, 2008.
 21. Shah HN, Shabbir G. A review of published literature on hepatitis B & C prevalence in Pakistan. *J Coll Physicians Surg Pak* 2002; 12:368-71.
 22. Blumberg BS. Australia antigen and the biology of hepatitis B. *Science* 1977; 197: 17-25.
 23. Kuo G, Choo QL, Alter HJ, Gitnick GL, Redekar AG, Purcell RH, et al. An assay for circulating antibodies to a major etiologic virus of human non-A non-B hepatitis. *Science* 1989; 21: 362-4.
 24. Cusher A. Acute and chronic viral hepatitis. In: Chsheri A, Steele JC, Mossa AR, editors. *Essential surgical practice*. 5th ed. Oxford:2002, pp, 334-5.
 25. WHO. Hepatitis B. Fact sheet N° 204. Revised August 2008. Available from: URL: [<http://www.who.int/medicentre/factsheets/fs204/ne/>] Assessed on April 10, 2009.