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Correspondence

Dr. Imran Ansari
Associate Professor, Department of Pediatrics
Patan Academy of Health Sciences,
Lalitpur, Nepal
Email: imranansari@pahs.edu.np

Peer Reviewed by:

Dr. Nabees Man Singh Pradhan
Patan Academy of Health Sciences
Email: nabeespradhan@pahs.edu.np

Dr. Jay N Shah
Patan Academy of Health Sciences
Email: drjaywufei@gmail.com

Hepatitis B and HIV in Children and Pregnant Ladies at Patan Hospital

Imran Ansari

Associate Professor, Department of Pediatrics, Patan Academy of Health Sciences, Lalitpur, Nepal

ABSTRACT

Introduction: The primary objective of this study was to find the prevalence of Hepatitis B and HIV infections in children and pregnant ladies visiting Patan Hospital. The secondary objective was to investigate how these individuals may have got infected, the clinical presentation and outcome.

Methods: Laboratory records of all individuals tested for Hepatitis B and HIV between 2006 July to 2011 Aug were included. The charts were reviewed for history and clinical findings

Results: Out of 44,958 individuals who were tested, 229 were positive. The prevalence of HIV was 0.2% and HBV 0.3% and both was 0.01% (5). The numbers of children under age of 15 and of pregnant ladies were 13 and 32 respectively. Risk factors identified in 40 adult patients were: intravenous drug use, multiple sex partners, working abroad and long distance drivers. Twenty-seven patients died, all with HIV. Of the 32 pregnant ladies 31 were discovered by routine testing. All the babies born were healthy. Fever, cough and breathing difficulty were the most common presenting features. Ten were treated for pneumonia and 3 for TB. Parents of 5 HIV-infected infants also had the same infection themselves. There was no death among children.

Conclusions: The prevalence of HBV and HIV was low. HBV was a 'hidden' infection, discovered on routine testing of asymptomatic pregnant ladies. Almost all children got these infections through vertical transmission.

Keywords: HBV, HIV, infection, seroprevalence

Plain Language Summary

This study was conducted to see prevalence of Hepatitis B and HIV in pregnant ladies and children at Patan Hospital, Nepal. Charts were reviewed. Prevalence of both was found to be very low.

INTRODUCTIONS

Viruses responsible for Hepatitis B and HIV infections are transmitted through sexual intercourse, blood transfusion and vertically from mother to fetus. Health personals may get infected if universal precautions are not practiced.

An estimated 75,000 (16,262 confirmed) people are living with HIV/AIDS in Nepal.¹ There is lack of data about the magnitude of this problem among patients visiting Patan Hospital. Data and knowledge on this issue will motivate health professionals to comply with institutional plans and policy of universal precaution.

This aim of this study was to find out overall HIV and HBV infections in patients coming to Patan Hospital, their clinical presentation, and outcome and to investigate how they may have got infected.

METHODS

It was a hospital based cross sectional, descriptive study. Laboratory records of all individuals tested for Hepatitis B and HIV infections between July 2006 to Jul 2011 were included in the study. Hospital numbers of all the positive results were noted to retrieve patient files from the record section of the hospital. Relevant findings, like presenting complaint, risk behavior, physical findings and outcome were studied. Approval for the study was taken from hospital authority.

RESULTS

A total of 44,958 individuals were tested for both Hepatitis B and HIV in the five year study period. Of them 229 (0.51%) were positive; 136 (0.3%) for Hepatitis B, 88 for HIV and 5 (0.01%) for both.

Table 1. Individual and co-infection of Hepatitis B and HIV in male and female patients

	Male	Female	Total
HBsAg	76	58	134
HIV	56	34	90
HBsAg & HIV	3	2	5
Total	135	94	229

Out of total infected individuals 153 (66.8%) were in the active age group of 26 to 49 years. Infected children up to 14 years of age were 13 (5.7%); 11 HIV and two HBsAg positive. There was no co-infection in the pediatric population. Pregnant ladies were 32 (14%); 29 HBsAg, two HIV and one both.

Table 2. Racial distribution of HBsAg and HIV positive cases

Race	Number positive	% of total
Mongolian	71	31.0
Newar	44	19.3
Chhetri	32	14.0
Dalit	27	11.8
Brahmin	25	10.9
Tharu	6	2.6
Madheshi	6	2.6
Muslim	6	2.6
Others	12	5.2
Total	229	100

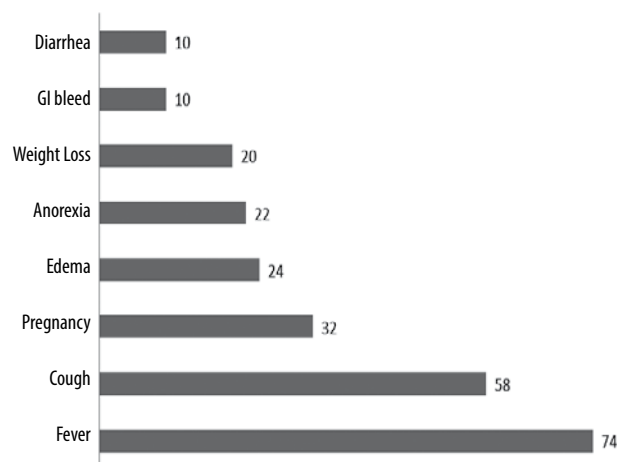


Figure 1. Presenting complaints of patients with Hepatitis B and HIV *Many patients had more than one of the stated symptoms, so the sum of the numbers shown in this diagram exceeds total number of patients.

Overall, fever in 74 (32.3%), cough in 58 (25.3%) were common presenting complaints (Figure 1) and 48 (21.8%) patients had both of these symptoms. In 32 (14%) pregnant ladies the infections were discovered during routine ante-natal investigation. Tuberculosis was detected in 61 (28%) patients. Among 14 children, fever in 10 (71.4%), cough in 8 (57.1%) and breathing difficulty in 5 (35.7%) were the common complaints. Ten were treated for pneumonia and three for disseminated TB. Three children had oral thrush.

Risk factors could be identified in only 40 (17.5%) cases and among these, intravenous drug use was 16 (40%) and patients with multiple sex partners, working or worked abroad, and long distance drivers were each 8 (20%).

In order to find the source or spread, spouses of adult and parents of children were screened. Total of 16 instances of

spouse-testing were documented, 12 in patients infected with HIV and 4 in those with the HBsAg. Half of those tested were positive (7 HIV, 1 HBsAg). Eleven patients had other members of the family (sibs, parents) also infected with same virus as the index case (10 HBsAg, 1 HIV). Mothers of two and both parents of one HIV infected infant tested positive. Both parents of another child had died of AIDS. Father of one child worked abroad as driver in a hotel and that of another was getting antiretroviral treatment from Shaheed Shukra Raj Tropical Hospital, Teku, Nepal. One mother of an HIV infected child refused to undergo screening test.

During study period 48 (21%) patients improved and were discharged, 20 (9%) left against medical advice. There were 27 (12%) mortality, all were HIV infected which amounts to 30.7% (27 of 88) case fatality for HIV. Thirty one patients with HIV were referred to Teku Hospital for further management. There was no death in the HBsAg group.

Of the 32 pregnant ladies who were HBsAg positive, 23 (72%) delivered by vaginal route, six underwent caesarian section (one had twin) and three went to deliver at some other facility. All the babies born to these infected mothers were healthy and weighed between 2850 g and 3900 g. There was no fetal loss in the present pregnancy but 2 of them had history of abortions in the past.

DISCUSSIONS

Overall sero-prevalence in 44958 patients tested was 229 (0.5%); of which 136 (0.3%) were Hepatitis B positive, 88 (0.2%) HIV and 5 (0.011%) both is comparable with the findings four years ago in 2009 in Kathmandu in which 21,716 units of blood donated for transfusion were found infected with HBsAg in 0.47% and 0.21% with HIV.² Another study from medical college in Western Nepal had high sero-prevalence of 3.4% of HIV³ which could be due to higher risk factors in that areas and needs in-depth research. The co-infection rate of HBV and HBsAg (0.011%) in our study is lower than what Ghimire P et al⁴ found (0.033%) in their research in 'blood donors'. This is an important finding for further analysis to see whether the donors were individuals donating blood to full fill their financial need for high-risk life style.

Males 135 (59%) were affected more than females in this study similar to findings of Ashish et al², in contrast to Paudel BN⁵ who observed a female predominance probably due to different target group.

Similar to other studies,^{2,5} two-thirds (153) of the sero-positive patients in present study were sexually and economically active age groups of 25 to 49 years old. All

13 (6%) children under 15 years of age were victims of mother to child transmission (MTCT).

The people of Mongolian race constituted one third (71; 31%) of the infected in our study, which could be due to more male members of this race are in security jobs in India and other countries, being away from family for long periods, and engaging in unsafe sexual activities may increase the risk of infections. A WHO document of 2010 has also reported high prevalence of these infections in the tribal population of India.⁶

Most common reasons for the patients to seek medical advice was cough in 74 (32%), fever in 58 (25%) and both in 48 (21%). These findings are similar to those of Siddiqui MH⁷ who found fever (59.6%) and cough (28.8%) as major presenting complaints in their patients in Karachi, Pakistan. Also, 64 (28%) of them had tuberculosis is significant finding due to compromised immune defenses in HIV patients.

In 40 cases there were identifiable risk factors; intravenous drug use (16), multiple sex partners (8), working abroad (8) and long distance drivers (8). All of these behaviors/professions are well known for their relationship with the two infections under study. The reason for the majority of the cases with no known risk factor may be due to the sensitive nature of and the social stigma attached to these conditions.

Since HBV and HIV can spread to the sex partner, only 16 instances of spouses agreed for testing of whom 8 were positive. It can be assumed that more would have been discovered had there been wider coverage of investigations. Other family members (siblings, parents) were found to have infected in 11 instances, possibly from the common source, i.e. parent. Eight of the 13 children tested positive had direct or indirect evidence of MTCT.

The overall mortality rate of 12% and HIV case fatality rate of 29% in this series is higher than 4.3% mortality reported by Paudel BN⁸ from Seti Zonal Hospital Nepal which could be due to more serious or critical pool of patients coming to Patan Hospital for tertiary level care. The study may have missed the infections in window period.

CONCLUSIONS

The overall sero-prevalence of 0.2% HIV, 0.3% HBV and 0.01% both in individuals tested at Patan Hospital is low. This study reveals hidden infections in unsuspected pregnant women an importance of universal precautions. All children in this series had infections from their mothers through vertical transmission.

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