




Original Article

Sexual Dysfunction in HBV- Experience at Tertiary Care Centre of Northern India

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ABSTRACT

Introduction - Hepatitis B surface Antigen (HbsAg) positivity in the general population ranges from 1.1% to 12.2%, with an average prevalence of 3-4%. Based on some regional level studies, it is estimated that in India, approximately 40 million people are chronically infected with Hepatitis B. Chronic Hepatitis B (CHB) is highly associated with sexual dysfunction (SD), with a prevalence rate significantly higher than the general population. Men commonly experience erectile dysfunction (ED), premature ejaculation, and low libido, while women may experience reduced desire and arousal issues. SD often worsens with advanced liver fibrosis, cirrhosis, and related depression. Studies indicate 67.2% or higher of chronic hepatitis B patients experience erectile dysfunction (ED). Liver damage can reduce testosterone levels and impair blood circulation required for erections. Anxiety, depression, and stigma associated with a chronic, sexually transmissible illness are significant contributors to sexual dysfunction. Chronic liver disease can increase sex hormone-binding globulin (SHBG), which binds to testosterone, resulting in lower levels of free, biologically active testosterone. The risk of ED increases to over 70% in cases of cirrhosis. Treatment with phosphodiesterase type 5 inhibitors (e.g., Viagra) can be effective, though these are often underused. Managing liver health through proper treatment, avoiding alcohol, and regular checkups can improve overall health and, in some cases, sexual function.

Aim of study- To estimate prevalence of sexual dysfunction in Hepatitis B patients at tertiary care center of Northern India.

Material and Methods- This study was conducted at Medical Gastroenterology Department at PGIMS, Rohtak. It was a prospective study done over one year, from 01.04.2025 to 31.03.2026, during which 400 confirmed hepatitis B patients were enquired for any kind of sexual dysfunction. For better understanding 100 patients each of inactive carrier, chronic hepatitis on antiviral treatment, cirrhotic patient on antiviral treatment and acute hepatitis B patients were enrolled. All 400 HBV patients were males, in 20-50 yrs age group and were sexually active. Patient with past history of sexual dysfunction, anxiety, depression, diabetes mellitus, hypertension, hypothyroidism which can cause sexual dysfunction were not included in the study. Except for acute hepatitis B, rest all patients who were having HBV infection for at least three years were included in the study. All hepatitis B patients were confirmed on HbsAg on Enzyme linked immunosorbent assay (ELISA) test and HBV DNA Quantitative on Polymerase chain reaction test (PCR). The written informed consent was taken before enrollment in the study.

Observation and Results- Our department is Model treatment Center (MTC) under National Viral Hepatitis Control Program (NVHCP) and is one of the high flow centers in India. On daily basis, 8-10 new and 40 follow up patients of HBV come for consultation and till date 12,000 HBV patients have been enrolled in last twelve years in this program. On prospective analysis of 400 confirmed hepatitis B patients, all were males. Out of total pool of 400 HBV patients, 100 patients each of acute hepatitis B, inactive carrier, chronic hepatitis on antiviral treatment, cirrhotic

patient on antiviral treatment were enrolled. The sexual dysfunction was seen in 22% of acute hepatitis B patients, followed by 20% of cirrhotic, 18% of chronic hepatitis with significant fibrosis and 7% of Inactive carrier. Most common kind of sexual dysfunction was erectile dysfunction, followed by loss of libido and premature ejaculation.

Conclusion -The management of hepatitis B patients need broader approach and all of them should be evaluated not only from hepatic point of view but also for its extra hepatic impact, of which sexual evaluation is must. The sexual aspect is often missed by treating team as well as not shared by patients. In India, masculinity is attached to core of heart of males and majority do not accept and share with health professionals. Hence, good repo of doctor with patients will help in healthy discussion among them on this sensitive issue

Keywords: Loss of libido, Erectile impotence, Premature ejaculation, Hepatitis B, HbsAg, HBV DNA Quantitative.

INTRODUCTION

Globally Viral hepatitis is now recognized as a major public health challenge and it is estimated that 325 million people worldwide are living with chronic HBV or HCV infection. (1, 2) Viral hepatitis is increasingly being recognized as a public health problem in India and Hepatitis B surface Antigen (HbsAg) positivity in the general population ranges from 1.1% to 12.2%, with an average prevalence of 3-4%. Based on some regional level studies, it is estimated that in India, approximately 40 million people are chronically infected with Hepatitis B. (4) Chronic HBV infection accounts for 40% of Hepato-cellular Carcinoma (HCC) and 20-30% cases of cirrhosis in India. (3) Sexual dysfunction (SD) is a common, yet often overlooked, issue among patients with chronic hepatitis B (CHB), with studies indicating a prevalence ranging from 25.4% to nearly 50%. SD in CHB patients is frequently linked to reduced liver function, advanced fibrosis, and associated depression. The prevalence of SD increases as liver function declines (Child-Pugh B vs. A) and with the progression of liver fibrosis. Erectile dysfunction is a major component of sexual dysfunction in male patients with chronic hepatitis B, particularly in those with liver cirrhosis (HBV-LC), where the prevalence can be as high as 41.2%–76.4%. Depression is a key, treatable factor contributing to sexual dysfunction. Higher Fibrosis (FIB-4) scores and lower Child-Pugh scores are directly associated with worse sexual function. Presence of cirrhosis is a strong independent risk factor for sexual dysfunction. Sexual dysfunction in HBV patients leads to lower emotional satisfaction, increased depression, and a reduced quality of life. Fear of transmitting the virus through sexual activity can lead to emotional distance or the avoidance of intimacy between partners. Clinicians should screen for SD in patients with chronic HBV as part of comprehensive care. The effective management of depression and liver cirrhosis can help mitigate sexual dysfunction. A multidisciplinary approach involving hepatologists, urologists, and psychologists is beneficial for managing both the physical and psychological aspects of SD in these patients.

AIM OF STUDY

To estimate prevalence of sexual dysfunction in Hepatitis B patients at tertiary care center of Northern India.

MATERIAL AND METHODS

This study was conducted at Medical Gastroenterology Department at PGIMS, Rohtak. It was a prospective study done over one year, from 01.04.2025 to 31.03.2026, during which 400 confirmed hepatitis B patients were enquired for any kind of sexual dysfunction. For better understanding 100 patients each of inactive carrier, chronic hepatitis on antiviral treatment, cirrhotic patient on antiviral treatment and acute hepatitis B patients were enrolled. All 400 HBV patients were males, in 20-50 yrs age group and were sexually active. The males were intentionally selected, as taking sexual history is easier in them in comparison to females. Patient with past history of sexual dysfunction, anxiety, depression, diabetes mellitus, hypertension, hypothyroidism which can cause sexual dysfunction were not included in the study. Except for acute hepatitis B, rest all patients who were having HBV infection for at least three years or more were included in the study. All hepatitis B patients were confirmed on HbsAg on Enzyme linked immunosorbent assay (ELISA) test and HBV DNA Quantitative on Polymerase chain reaction test (PCR).

OBSERVATION AND RESULTS

Our department is Model treatment Center (MTC) under National Viral Hepatitis Control Program (NVHCP) and is one of the high flow centers in India. On daily basis, 8-10 new and 40 follow up patients of HBV come for consultation and till date 12,000 HBV patients have been enrolled in last twelve years in this program. On prospective analysis of 400 confirmed hepatitis B patients, all were males. Out of total pool of 400 HBV patients, 100 patients each of acute hepatitis B, inactive carrier, chronic hepatitis on antiviral treatment, cirrhotic patient on antiviral treatment were enrolled. The sexual dysfunction was seen in 22% of acute hepatitis B patients, followed by 20% of cirrhotic, 18% of chronic hepatitis with significant fibrosis and 7% of Inactive carrier. Most common kind of sexual dysfunction was loss of libido followed by erectile dysfunction and premature ejaculation. All acute hepatitis B patient had loss of libido. Out of 100 patients of

HBV related cirrhotic patients, sexual dysfunction was seen in 20 patients (20%) and out of them 16 (80%) had erectile impotence and 4 (20%) had loss of libido. In group of 100 patients of Chronic Hepatitis B with significant fibrosis- > F2 Fibrosis, total 18 patients (18%) had sexual dysfunction. In them majority 11 patients (61.11%) had erectile impotence, 5 (27.77%) had loss of libido and 2 (11.11%) suffered with premature ejaculation. In group of 100 patients of Chronic Hepatitis B-inactive carriers-F0-F1 Fibrosis, only 7 patients (7%) had sexual dysfunction. In them majority 5 patients (71.42%) had loss of libido and 2 (28.58%) had erectile impotence.

Table 1- Showing sexual dysfunction distribution in total pool of HBV Patients

Total HBV Patients	Males	Females	Sexual Dysfunction Present	Sexual Dysfunction Absent
400	400 (100%)	0 (0%)	67 (16.75%)	333(83.25%)

Table 2- Showing prevalence of sexual dysfunction in various groups of HBV Patients

Total HBV Patients	Acute Hepatitis B	Chronic Hepatitis-Inactive Carriers-F0-F1 Fibrosis	Chronic Hepatitis B- F2 -F3 Fibrosis-On antiviral treatment	HBV Related Cirrhosis- F4- On antiviral treatment
400	100	100	100	100
Sexual Dysfunction Present	22 (22%)	7 (7%)	18 (18%)	20 (20%)
Sexual Dysfunction Absent	78 (78%)	93 (93%)	82 (82%)	80 (80%)

Table 3- Showing types of sexual dysfunction in various groups of HBV Patients

Total HBV Patients with Sexual Dysfunction	Acute Hepatitis B	Chronic Hepatitis-Inactive Carriers-F0-F1 Fibrosis	Chronic Hepatitis B- F2 -F3 Fibrosis-On antiviral treatment	HBV Related Cirrhosis- F4- On antiviral treatment
67	22	7	18	20
Erectile Dysfunction	0	2	11	16
Loss of Libido	22	5	5	4
Premature Ejaculation	0	0	2	0

DISCUSSION

Hepatitis B infection is caused by HBV DNA (deoxyribonucleic acid) virus which belongs to Hepadnaviridae family and predominantly infect hepatocytes in their respective hosts. (5) HBV infection can be either acute or chronic and may range from asymptomatic infection or mild disease to severe or rarely fulminant hepatitis. (6) Acute hepatitis B is marked by acute inflammation and hepatocellular necrosis, with a case fatality rate of 0.5–1%. (7) Chronic hepatitis B infection is defined as persistent HBV infection, as evidenced by existence of HbsAg in the blood or serum for longer than six months, with or without associated active viral replication and indication of hepatocellular injury. (6) The risk of chronicity is more in neonates (90%) and young children (20-60%) than in infection that is acquired in adulthood (5%). (7,8) Chronic HBV infection remains inactive in majority but in rest it gradually led to fibrosis and ultimately end in cirrhosis, end-stage liver disease or H.C.C. (9) SD is defined as disturbances in sexual desire and the psychophysiological alterations that characterize the sexual response cycle, significantly contributing to interpersonal conflict and unhappiness. Female SD is mostly characterized by issues such as dyspareunia (pain during intercourse), diminished sexual desire, arousal difficulties, and orgasmic disorders. In contrast, male SD is predominantly characterized by erectile dysfunction (ED), premature ejaculation, and reduced sexual desire. (10,11) In one study, it was determined that the prevalence of ED and lower urinary tract symptoms were increased in hepatitis B patients. Patients with hepatitis B should be monitored for ED and evaluated for treatment. (12) It has been reported that SD is significantly impaired in patients with CHB and/or CHC. (13,14) However, the prevalence of SD in these patients was found to fluctuate greatly, ranging from 8.6% and 94.5% (13,14). This variability can be attributed to differences in the assessment methods for SD employed by various studies, as well as the characteristics of the patient populations. This inconsistency hampers future intervention studies aimed at accurately estimating the prevalence of SD. Furthermore, Ma et al. identified age and depression as independent factors contributing to ED in male patients with chronic viral hepatitis. (13) Our study clearly highlights, that sexual dysfunction does occur in HBV patients but in our geographical distribution prevalence was determined to be 16.75% which is much lower than reported in other studies. The overall most common sexual dysfunction noted was loss of libido, followed by erectile impotence. The reason for it can be that erectile impotence has two main reasons- one is depression associated with disease and other is hormonal alterations, leading to decreased testosterone levels which are mainly seen in advanced fibrosis and cirrhosis. But in our study group of 400, two hundred were acute hepatitis B and inactive carriers and other two hundred patients were on regular antiviral therapy, thus in them

either disease stage showed downward trend, as evidenced by decreasing fibroscan score or remain stabilized. Hence, as expected, less hormonal alterations may have occurred. By regular counselling of patient and family members and good bonding with them of treating team helped in decreasing fears and depression associated with illness. All these factors played role in decreasing prevalence of erectile impotence. The loss of libido was the only kind of sexual dysfunction noted in acute hepatitis B and erectile impotence was seen in none. It can be explained on basis that hormonal alterations leading to decreased testosterone levels are not expected in acute hepatitis B. The malaise, generalized fatigue, anorexia, vomiting can all lead to loss of libido in acute hepatitis B. The chronic hepatitis B inactive carrier stage patients had least prevalence of sexual dysfunction and in them also loss of libido was more commonly seen than erectile impotence because decreased testosterone levels leading to erectile impotence are less common in inactive carrier stage. In chronic hepatitis B patients with significant fibrosis, erectile dysfunction was most common followed by loss of libido and premature ejaculation, the last one was seen only in this group. Decreased testosterone level with increased fibrosis can explain erectile impotence in this group. The cirrhotic group had maximum prevalence of erectile impotence which is in alignment with other studies and is mainly due to decreased testosterone levels, the basis for which is decreased production of testosterone and increased production of sex binding globulin which causes less availability of free testosterone levels.

CONCLUSION

The management of hepatitis B patients need broader approach and all of them should be evaluated not only from hepatic point of view but also for its extra hepatic impact, of which sexual evaluation is must. The sexual aspect is often missed by treating team as well as not shared by patients. In India, masculinity is attached to core of heart of males and majority do not accept and share with health professionals. Hence, good repo of doctor with patients will help in healthy discussion among them on this sensitive issue. The good compliance on drugs, regular follow up, abstinence from alcohol, smoking and drugs leads to improvement or stabilization of disease. The good psychotherapy leads to removal of depression which is an important reason for causing sexual dysfunction.

Conflict of Interest- The authors have no conflicts of interest to declare. No financial support was taken for the same.

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