

A CASE REPORT OF CLINICAL ADVERSE EVENTS OF TELBIVUDINE IN HEPATITIS B PATIENTS

Manmohan Singhal¹, Dhaval Patel¹, Pankaj shah²

¹School of Pharmaceutical Sciences, Jaipur National University, Jaipur, Rajasthan, India

²Institute of kidney disease and research center, Civil hospital, Ahmedabad, Gujarat, India

Email: manu_mpharm@yahoo.co.in

Summary

In present study, clinical adverse event of telbivudine was analysed in hepatitis b patients. Clinical data were collected from hepatitis b patients that presented with serious adverse reactions to telbivudine. We examined 100 patients of hepatitis b who were treated with telbivudine in i.k.d.r.c, civil hospital, Ahmedabad from January 2009 to February 2011, out of these twenty patients had used other nucleoside analogues in past. The main adverse reactions were myalgia, fatigue, acidity, back pain, joint pain cough, and weakness. The hepatitis b was seen more in the 20 to 40 year of age. The male was more prone to hepatitis b than the female. The adverse reactions were related to telbivudine, but the biological mechanism of the reaction is not clear. Combination therapy with interferon or other nucleoside analogues may increase the risk of adverse reaction.

Keywords: Adverse drug reaction, Hepatitis B, Nucleoside analogue, Telbivudine

Introduction

Hepatitis is a general term meaning inflammation of the liver and can be caused by a variety of different viruses such as hepatitis A, B, C, D and E. Hepatitis B is a serious and common infectious disease of the liver. Hepatitis B virus (HBV) infection is a significant health problem worldwide. The hepatitis B virus is a DNA virus, meaning that its genetic material is made up of deoxyribonucleic acids. It belongs to a family of viruses known as Hepadnaviridae. The virus is primarily found in the liver but is also present in the blood and certain body fluids.¹ Of the 6 billion worldwide populations, an estimated 2 billion have been infected by HBV.² It is estimated that 350-400 million people have chronic hepatitis B (CHB) infection.³ There is clear epidemiologic evidence that chronic HBV infection can result in the development of hepatocellular carcinoma (HCC) and cirrhosis.^{4,5} Approximately 15%-40% of HBV carriers develop cirrhosis, liver failure, and HCC: worldwide, more than 50% of primary HCC is related to chronic HBV infection.⁶ Each year, 500 000 deaths are expected because of complications related to hepatitis B.⁷

In India nearly 3%-4% of the population is infected by the virus, and chronic hepatitis B constitutes more than 50% of the chronic hepatitis cases in the country.⁸ The prevalence ranges from 1.1% to 12.2% with maximum incidence in Madhya Pradesh, Gujarat, Arunachal Pradesh and South India and least in Kashmir and Kerala.⁹ There is peak prevalence after the second decade of life. Most (90%) of these HBV infected subjects are HBeAg negative; the majority (80%) have normal ALT.¹⁰ The prevalence of HBeAg among asymptomatic HBsAg positive persons varies from 9%-20%.¹¹ Telbivudine is used for chronic (long term) hepatitis B infection (swelling of the liver caused by a virus) in people who may also show signs of liver damage. Telbivudine is in a class of medications called nucleoside analogues which acts as, competitive inhibition of viral reverse transcriptase (DNA polymerase). It works by preventing viral cells from multiplying in the body and infecting new liver cells. Since it came on the market in October, 2006, it has been a new option for the treating of chronic hepatitis B, because it significantly suppresses hepatitis B virus (HBV) replication.^{12,13}

Materials and Methods

Subjects

In present study we examined 100 patients who were treated with telbivudine for hepatitis B at an inpatients and outpatient department of i.k.d.r.c, civil hospital, ahmedabad, from January, 2009 to February 2011.

Methods

A retrospective method was employed to analyze the medical records of the all patients, including: general information, medicine history, telbivudine treatment, dosage, combined medication, time of occurrence of adverse events and clinical features of adverse reactions as well as results of laboratory tests, such as routine blood analysis, liver function, and kidney function.

Results and Discussion

In present study a randomized observation study on 100 patients of hepatitis b was conducted who were treated with the telbivudine and examined for clinical adverse events. These patients were selected with the inclusion criteria only. All the patients successfully completed the telbivudine therapy. There were no cases of the discontinuation of the therapy. In this study a total of 100 patients of hepatitis b were recruited, out of them 65 were male and 35 were female patients. Figure 1 shows the gender distribution of telbivudine therapy.

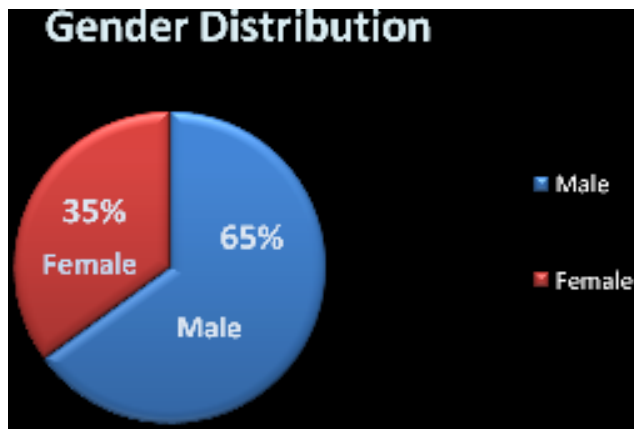


Figure 1: Pie chart showing gender distribution of the telbivudine therapy

We studied the sex and age distribution of hepatitis b patients which is shown in table 1. It was observed that male of the age group of 21-40 year were more prone to hepatitis b, while elder peoples (between the age 60-80 year) were less prone to hepatitis b. In female we observed that hepatitis b infection is mostly occur in the age of 21- 40 year while other age group female are relatively resistance to hepatitis b infection.

Table 1: Age distribution with sex of patients in telbivudine therapy

Age in year	Male (%)	Female (%)	Overall (%)
21-30	21 (32.07)	08 (22.85)	29 (29.0)
31-40	15 (23.07)	12 (34.28)	27 (27.0)
41-50	11 (16.92)	05 (14.28)	16 (16.0)
51-60	10 (15.38)	06 (17.14)	16 (16.0)
61-70	06 (9.23)	03 (8.57)	09 (9.0)
71-80	02 (3.07)	01 (2.85)	03 (3.0)
Total	65 (100.0)	35 (100.0)	100 (100.0)

Out of the 100 patients, total 12 patients were found with the kidney transplantation along with the hepatitis b. Out of the 100 patients 20 patients were previously treated with the other drugs of the hepatitis b but due to reactivation or resistance of the virus to drug, they became hepatitis b positive again. So they were treated with the telbivudine to overcome resistance.

During the study we found various types of side effect which are shown in table 2. Fatigue was the most common side effect of nucleoside analogue therapy. Telbivudine also produced fatigue in 14% patients within the four to five months of telbivudine therapy. Back pain (14%), joint pain (13%), acidity (13%) and headache (16%) are also commonly observed side effects of telbivudine therapy.

Table 2: Adverse events and time of adverse events after the telbivudine treatment

No.	Adverse events	Telbivudine therapy	Approx time of adverse events after the initiation of telbivudine therapy
		No. of patients (%)	
1	Fatigue	14 (14.0)	four –five months
2	Headache	16 (16.0)	two-three weeks
3	Diarrhea	05 (5.0)	one-two months
4	Upper abdominal pain	06 (6.0)	five –six months
5	Nausea	08 (8.0)	two-three weeks
6	Pyrexia	06 (6.0)	one –two weeks
7	Skin rash	04 (6.0)	six-seven months
8	Back pain	14 (14.0)	three- four months
9	Dizziness	05 (5.0)	several weeks
10	Myalgia	04 (4.0)	three-four month
11	Insomnia	05 (5.0)	several weeks
12	Pruritus	03 (3.0)	one month
13	Acne	02 (2.0)	three month
14	Dyspepsia	02 (2.0)	two week
15	Vomiting	07 (7.0)	several weeks
16	Joint pain (Arthralgia)	13 (13.0)	seven-eight months
17	Weakness	06 (6.0)	two- three months
18	Acidity	13 (13.0)	three-four weeks
19	Nasopharyngitis	04 (4.0)	two-three months
20	Anorexia	02 (2.0)	three week
21	Dry mouth	02 (2.0)	two week
22	Sore throat	05 (5.0)	two-three week
23	Menstruation irregularity	01 (1.0)	Four month
24	Cough	07 (7.0)	two-three months
25	Nasal discharge	02 (2.0)	two-three week

Other side effects like upper abdominal pain, nausea, pyrexia, cough, vomiting and weakness are also associated with telbivudine in 6-10% of patients. Diarrhea, skin rash, dizziness, myalgia, insomnia, pruritus, acne, sore throat, nasopharyngitis, menstruation irregularity, nasal discharge, dyspepsia, anorexia and dry mouth may also occur in fewer patients (less than 5%) with telbivudine.

Conclusion

In present study, age distribution and adverse events of telbivudine was studied in i.k.d.r.c, civil hospital, Ahmedabad. We observed that male was more prone to hepatitis b than female. Patients of the age of twenty one to forty year were most susceptible to hepatitis b. The most common side effect of telbivudine were fatigue, headache, joint pain, back pain and acidity.

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