



Hepatitis B Co - Infection in HIV AIDS Patients in Woldia, Ethiopia



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Abstract

Hepatitis B is one of liver infection resulting from the presence of viral agents. HIV infected individuals are more susceptible to hepatitis B viral infection as their disease progresses into AIDS. Now a day, Hepatitis B is present in HIV infected patients. The aim of this study was to investigate medical information and to get their perception regarding co-infection as well as to assess associated risk factors for Hepatitis B abnormalities among HIV positive patients in Woldia General Hospital, Ethiopia. The questionnaire form was filled up appropriately. They are also forward relevant characteristics. HIV-AIDS patients co-infected with Hepatitis B was studied. A total of 30 patients were included here. Different social groups were participated during in the time of the study. From the total study population, 46.7% (14) are males and 53.3% (16) are females. They have a variety of personal characteristics. Most of the 53% were illiterate and 43.33% survive in agricultural practice. The major associated risk factors facilitate for co-infection were unprotected sexual habit, screening with a variety of pathogens, sharing unsterilized personal types of equipment and illegal drug use. The basic point of reason had both weak immune system and low CD4 cell count was commented from respondents. To solve the problem first, free from unsecured sexual intercourse who had already Hepatitis B. Second, sterilizing equipment's. Lastly, avoiding illegal drug usage. In overall patients should have to get a vaccine. Finally, they had a good common understanding of medical aspects.

Keywords: (HBV) Hepatitis B Virus; HIV (Human Immunodeficiency Virus); AIDS (Acquired Immuno Deficiency Syndrome); Co-Infection; Risk Factor

Introduction

Hepatitis B is a disease caused by the hepatitis B virus that attacks the liver. The virus is responsible for the lifelong liver infection, liver cirrhosis, liver cancer and liver failure and subsequent death. HBV is the major health problem in different parts of the world. It is potential for morbidity and mortality in HIV patients due to both share uniform way of transmission pattern then the possibility of coinfection leads to high/more chronic [1-4]. HIV AIDS patients are sensitive for opportunistic infection and co-infection especially in Hepatitis B virus [5]. The presence of hepatitis B virus (HBV) in patients infected by the human immunodeficiency virus (HIV) leads to a higher incidence of liver disorders due to persistence and recurrence of HBV infection [6]. HIV/AIDS is one of the most crucial public health challenges, particularly in the low and middle-income region. In Ethiopia, the rate of transmission is increased from time to time because of the recent development of casual attitude towards sex, degradation of traditional and indigenous value. There have been no published papers reported in our hospital. In addition to this, there is no studies were conducted regarding hepatitis B virus coinfection in HIV AIDS patients in Woldia town up to yet. Therefore, bearing this in mind this study was conducted. The aim of the research is:

- To know clinical sign and symptoms of HIV AIDS patients coinfecting within the HBV.
- To explore the associated risk factors of HIV AIDS patients coinfecting within HBV.
- To identify the major reason for exposing/ screening of HIV AIDS patients coinfecting with an opportunistic infection.
- To assess control and prevention mechanism for HIV positives not easily susceptible for HBV.

Material and Methods

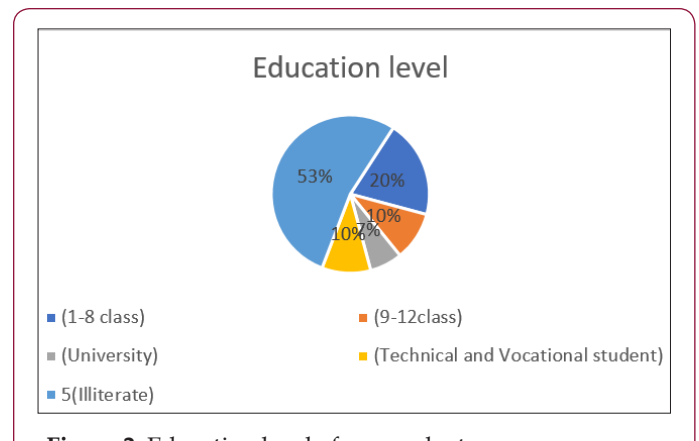
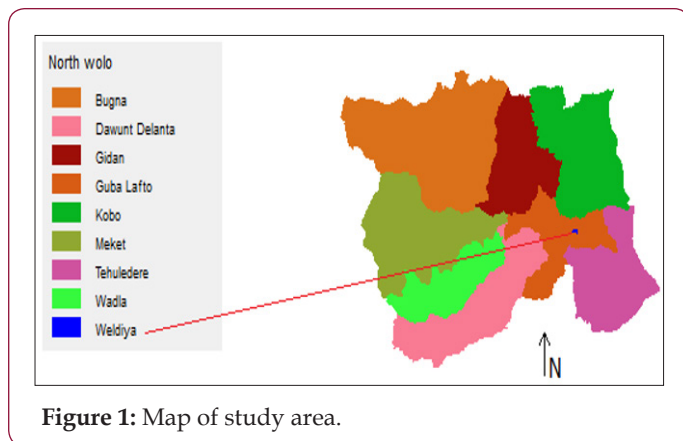
Description of the Study Area

Semien Wollo (North Wollo) is one of 10 zones of the Amhara Region of northern Ethiopia. It is bordered on the south by Debub Wollo (South Wollo), on the west by Debub Gondar (South Gondar), on the north by Wag Hemra, on the northeast by Tigray Region, and on the east by Afar Region; part of its southern border is defined by the Mille River (Table 1). It is located 521 kilometers away from Addis Ababa. The global positioning system coordinates of Woldia in terms of latitude and longitude indicate that 11°49' 59.99" N

and 39° 40' 59.99" E respectively (Figure 1). The elevation is 2,112 46,139 people. Out of this 23, 000 are males and 23,139 are females meter above sea level. Woldia has an estimated total population of [7].

Table 1: Associated risk factors HIV - AIDS patients co-infected with hepatitis B.

Variable	Number (N)	Percentage (%) value
Screening with the opportunistic infection	2	6.66 %
Chewing chat, smoking cigarette and drinking alcohol	2	6.66%
Unprotected sexual intercourse with a single and multi-sexual partner	5	16.66%
Abnormal and illegal drug use that is taking the drug over recommended doze	4	13.33%
Using and sharing unsterilized personal equipment's (contaminated needles) for ear piercing and tattooing	4	13.33%
Vertical transmission	2	6.66%
Unsafe blood transfusion	2	6.66%
Malnutrition	1	3.33%
Low socioeconomic status	1	3.33%
Contacted with secreted body substances (compounds) together	4	13.33%
Immunity system destruction due to HIV from time to time	3	10%



Sampling Technique

Purposive sampling technique was applied and used for the selection and inclusion of representative HIV-AIDS patients co-infected with Hepatitis B, who already attended in Woldia General Hospital.

Sample Size

For this paper, 30 individuals or else informants were selected for the study of HIV patients co-infected with Hepatitis B. Due to financial constraints, lack of adequate resource and a shortage of study time interval the sample size become minimized.

Study Population

All necessary data were taken /acquired from patients visited in hospital and different social groups who inhabitants in the area (Figure 2) and (Table 2). HIV-positive individuals were seen at Hospital they actively participate. The subjects recruited for this study were confirmed HIV/AIDS patients, presenting with HBV complications. The duration of HIV/AIDS infection showed that those with prolonged AIDS. All HIV patients already tested for the presence of HBV and also the final screening result showed that positive.

Table 2: Sign and Symptoms for HIV ADIS patient's co infected with hepatitis B.

Variable	Number(N)	Percentage (%) value
Body weight loss	4	13.33 %
Color change of eye (jaundice)	3	10 %
Variable body temperature	1	3.33 %
Diarrhea	2	6.66 %
Right upper quadrant pain and pain in liver body organ	3	10 %
Vomiting	1	3.33 %
Fever	1	3.33 %
Chills	1	3.33 %
Weakness of body and swelling part of body or tiredness	4	13.33 %
Nausea	2	6.66 %
Headache	2	6.66 %

Loss of appetite	1	3.33 %
Enlargement of liver, cirrhosis and liver cancer eventually develop	4	13.33 %

Study Design

A Hospital based cross-sectional study design was conducted among HIV AIDS patients who visited the hospital from January up to July 2015, in Woldia town, Ethiopia. The selection of Woldia town had been based on the accessibility, easy for transportation, a high number of people live together and the presence of a general hospital that provides health care for the society.

Data Type and Data Source

The mechanism of gathering data was accomplished/supported in qualitative data type. Furthermore, primary data were sourced/obtained from respondents/hospitalized patients.

Data Collection Technique

The primary (demographic, socio-economical and epidemiological) data were collected directly from patients who will for the interview and forward enough information about the listed research objective. Focus group discussion was constructed. Then, participants were interviewed by using a semi-structured questionnaire, in a local Amharic next translate to the English language (Figure 3) and (Table 3). Open and closed-ended type questionnaire was prepared/developed and distributed to the study sample population. Finally, relevant medical and behavioral data were collected. All section of the questionnaire was pre-tested before finalization.

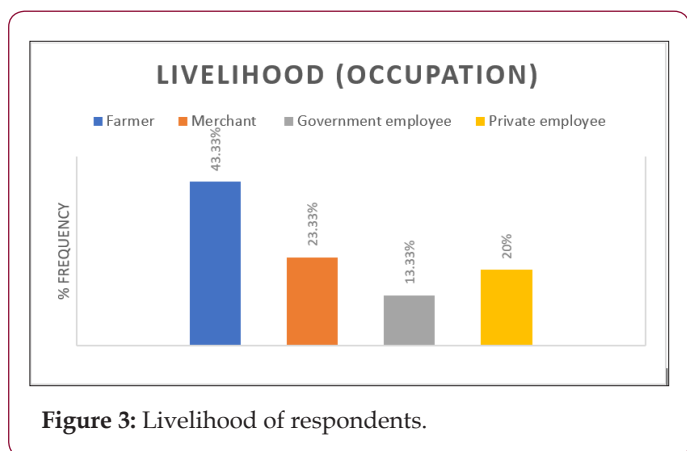


Figure 3: Livelihood of respondents.

Table 3: Prevention and control mechanism for HIV AIDS patient's not to be co-infected with hepatitis B.

Variable	Number(N)	Percentage (%) value
Avoiding blood and other body fluid close contact with infected person	3	10 %
Keeping personal hygiene and environmental sanitation	3	10 %
Stopping excess alcohol consumption	2	6.66 %
Using a condom, introducing one to one mechanism for sexual intercourse or implement sexual abstinence	4	13.33 %
Using wisely given drug by physicians	5	16.66 %

Sterilizing contaminated foodstuff completely	3	10 %
Do not share personal equipment's	6	20 %
Stopping the participation in sexual intercourse with many infected partner	4	13.33 %

Statistical Analysis

Data was checked for its completeness before the analysis was done. Then, all necessary data were organized, entered and analyzed by using SPSS V 20.0. Descriptive statistics (mean and percentages) method were used/applied to characterize study subjects. The way of presentation and interpretation of the data was made and explained in a form of a table, graph, pictogram and percentage value.

Ethical Consideration

Ethical clearance was taken from Woldia General Hospital medical directorate office. Full permission was allowed to conduct the research then all participants were informed about the objective and procedure profoundly. Privacy and confidentiality well maintained. Each questionnaire was numerically coded without any personal identification. Later, our consent result was presented to physicians working at the hospital to check up against the relevancy of clinical based data.

Result

Socio-Demographic Profile (Characteristics) of Individuals

A total of thirty study populations (potential candidates) are selected and clustered into five groups. One group at least hold ten study individuals. Then hot discussion lesson continued, and they also provide all necessary relevant response (characteristics). The research outcome indicated that out of the 46.7% (14) are males and 53.3% (16) are females. The mean age size of patients was 33±1years included here. The marital status of patients 36.66% (11) of the population is married, 46.66% (14) is single and also the remaining 16.66% (5) is divorce. Based on research finding, All HIV AIDS subjects are co-infected with HBV and they are used as a source of information. All respondents also have a common understanding about the causative agent which is already virus. Economic status of respondents on the basis of monthly and annually generated income 6.66% (2) participants are grouped in first class, 20% (6) respondents are clustered in medium class and 73.33% (22) of individuals are found in third class (live in under poverty level).

The reason for co-infection within HBV based on informant consensus 20% (6) were told us/ announced within brief description: lack of well-organized acquired and innate immunity system, 43.33% (13) were explained white blood cells and CD4 cell gradually become very low. The last 36.66% (11) were forward the detailed explanation that HIV is developing immunity system problem which leads to immunity function become retarded. At that moment cannot effective in HBV prevention.

Discussion

HBV infection had negative impacts on the history of HIV seropositive. Both HBV and HIV are viruses that share certain epidemiological characteristics such as risk populations and transmission routes. The risk of chronic hepatitis B is higher in co-infected HIV patients. HIV/HBV co-infected patients showed worse clinical and immunological features [8]. The majority of the participants in the current study were women (53.3%). The predominance of women in the present study outcome was correlated already reported in previous time [9]. The finding that HIV seropositivity leads to increased prevalence of HB. The prevalence of HB seropositivity increased with deteriorating immune status reflected by lower CD4+ cell counts. Increasing prevalence of HBeAg with worsening HIV-induced immunosuppression. Reasons for getting opportunistic infection also related to CD4 cell count decline gradually. This finding was consistent with other studies done on related title [9-11]

The main possible factors for co-infection rate leads (brings) to high: Smoking, blood transfusion, alcohol consumption, sharing razor for tattooing, injecting drug use, unsafe injection, unusual drug addiction, unsafe homo and hero-sexual habit (lifestyles), unsafe surgical history, tooth extraction and low CD4 count are baseline characteristics and also supported with many coherent studies in different place [3, 4, 6, 8, 12-16]. In the current study, all respondents have knowledge toward prevention practices on HBV. Responses to preventive/ protective measures are frequently washing hands, used protective instruments, sterilizing equipment's, disinfecting materials and participating in the vaccination program. This finding has resembled with the previous study from Northwest Ethiopia and India that reported a good knowledge of the study participants on HBV infection [17,18]. The present study survey showed that HBV-infected patients had different socio-demographic characteristics. Based on the finding of this study, major clinical manifestations such as fever, fatigue, loss of appetite, jaundice, rash, joint pain, and headache were confirmed with other papers also [19,20].

Conclusion

Hepatitis B is one of the leading causes of acute and chronic in HIV/ AIDS-infected patients in Woldia town. Thus, the patients can get immediate treatment and needs intensive care in order to prevent them from health devastation. Generally, in our study, many possible risk factors had explored and identified for respective/ contributive opportunistic infections.

Recommendation

Researchers should be initiated to do more investigation regarding sero- prevalence of HIV positive individuals. For North Wollo administrative zone to develop, provide and manage treatment options as well as creating public awareness campaign against HIV/AIDS and its opportunistic infections frequently.

Acknowledgment

The research paper submitted to the department of biology the partial fulfillment of requirements degree of science in Biology.

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