

Pneumonia Co - Infection in HIV AIDS Patients in Woldia, Ethiopia

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Abstract

Pneumonia is one of respiratory track infection resulting from the presence of pathogenic microbial agents. HIV infected individuals are more susceptible to respiratory tract infections as their disease progresses in to AIDS. Now a day, Pneumonia is present in HIV infected patients.

The aim of this study was to investigate medical information and to get there perception regarding to co-infection as well as to assess associated risk factors for Pneumonia abnormalities among HIV positive patients in Woldia General Hospital, Ethiopia. Questionnaire form were filled up appropriately. They are also forward relevant characteristics. HIVAIDS patients co-infected with Pneumonia was studied. A total of 50 patients were included here. Different social groups were participated during the time of study. From the total study population 40% (20) are males and 60% (30) are females. They have variety of personal characteristics. Most of them 54% were illiterate and 48% survive in agricultural practice.

The major associated risk factors facilitate for co-infection were poor behavioral habit, and screening with variety of pathogens, low monthly income salary and survive in consistent poverty. The basic point of reason had both weak immunity system and low CD4 cell count were commented from respondents. To solve the problem first, free from oral contact who had already Pneumonia. Second, scale up daily nutritional status. Lastly, live in comfortable area to get fresh atmospheric air. In overall patients should have to get a vaccine. Finally, they had a good common understanding on medical aspects.

Key words: *Pneumonia; HIV (human immunodeficiency Virus); AIDS (acquired immunodeficiency syndrome); co-infection; Risk factor*

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Introduction

Pneumonia is one of respiratory track infection, the most causative agents are *Streptococcus pneumoniae*, *Candida albicans*, *Penicillium marneffeii*, *Penicillium*, *Mycobacterium*, *Cryptococcus neoformans*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Mycoplasma pneumoniae*, *pneumocystis jirouecii*, *Respiratory Syncytial virus* and so on. This pathogenic microorganisms are potential for alveoli are filled with pus and fluid which maker breathing pain full and limit oxygen in take. Opprtunistic infections are a major cause for

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lung infection and death in immunocompromised patients like HIV positive subjects [1-3]. AIDS is a kind of immunodeficiency disease, because HIV attacks body's immune T cells, which makes its function abnormal, and then patients' immune systems will gradually collapse. Then, human bodies will become susceptible to different types of diseases and a variety of pathogenic bacteria infections [4-9]. HIV/AIDS is one of the most crucial public health challenges, particularly in low and middle-income region. In Ethiopia the rate of transmission is increase time to time because of the recent development of casual attitude towards sex, degradation of traditional and indigenous value.

There has been no published papers reported in our hospital. In addition to this, There is no studies was conducted regarding to Pneumonia co-infection 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

1. To know clinical sign and symptoms of HIV AIDS patients coinfectd with in Pneumonia.
2. To explore associated risk factors of HIV AIDS patients coinfectd with in Pneumonia.
3. To identify the major reason for exposing/screenning of HIV AIDS patients coinfectd with many oportunistic infection.
4. To assess control and prevention mechanism for HIV positives not easily susceptible for Pneumonia.

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. It is located 521 kilometer 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. The elevation is 2,112 meter above sea level. Woldia has an estimated total population of 46,139 people. Out of this 23,000 are males and 23,139 are females [10]. (Figure 1)

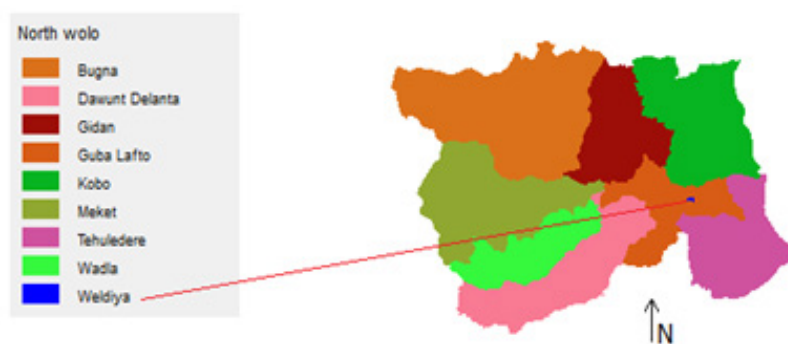


Figure 1: Map of study area.

Sampling technique

Purposive sampling technique were applied/used for the selection and inclusion of representative HIV AIDS patients co infected with Pneumonia, who already attended in Woldia General Hospital.

Sample size

For this paper, 50 individuals/informants were selected for the study of HIV patients co-infected with pneumonia. Due to financial constraints, lack of adequate resource and 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. HIV-positive individuals seen at Hospital they are actively participated. The subjects recruited for this study were confirmed HIV/AIDS patients, presenting with pneumonia complications. The duration of HIV/AIDS infection showed that those with prolonged AIDS. All HIV patients already tested for the presence of pneumonia and also the final screening result showed that positive.

Study design

A Hospital based cross sectional study design was conducted among HIV/AIDS patients who visited in 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, high number of people live together and the presence of general hospital that provide health care for the society.

Data type and data source

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

Data collection technique

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

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 table, graph, and pictogram and percentage value.

Ethical consideration

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

Result

Socio-Demographic Profile (Characteristics) Of Individuals

A total fifty study populations (potential candidates) are selected and clustered in to 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 them 40% (20) are males and 60% (30) are females. The mean age size of patients were 36 ± 1 years included here. The marital status of patients 20% (10) from the population is married, 48% (24) is single and also the remaining 32% (16) is divorce. Based on research finding, All HIV AIDS subjects had co - infected with pneumonia and they are used as a source of information. 64% (32) of the population is mentioned the causative agent of HIV AIDS and Pneumonia is virus and bacteria respectively. The remaining 36% (18) told us/noted the causative agent of HIV AIDS and Pneumonia is virus and fungus respectively. Economic status of respondents on the basis of monthly and annually generated income 8% (4) participants are grouped in first class, 24% (12) respondents are clustered in medium class and 68% (34) of individuals are found in third class (live in under poverty level). The reason for co - infected with pneumonia based on informant consensus 46% (23) were told us/announced with in brief description: HIV is one of the

cause for the death of white blood cells at that instant the ability to protection of body become decrease and 54% (27) were explained HIV AIDS patients' immunity response indicated (showed) that very low and weak CD₄ cell. Ultimately, they are highly sensitive to various opportunistic infections. (Figure 2 and 3)

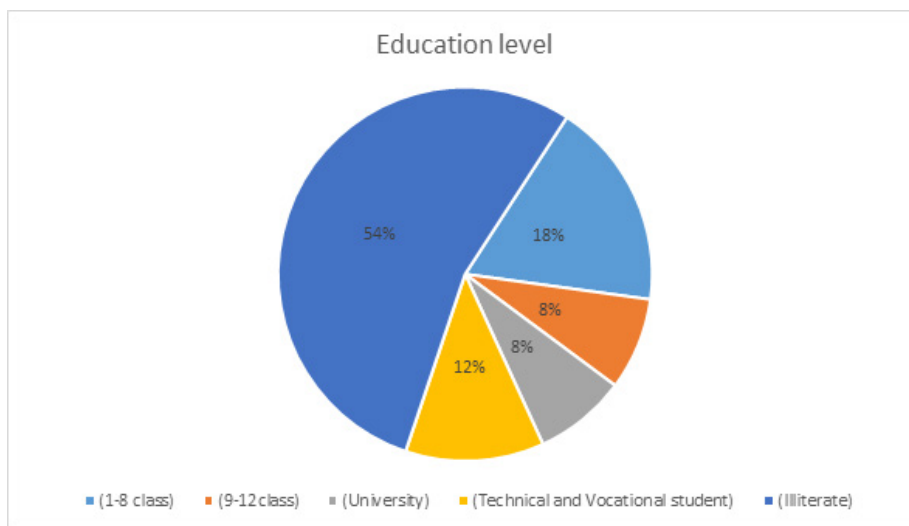


Figure 2: Education level of respondents.

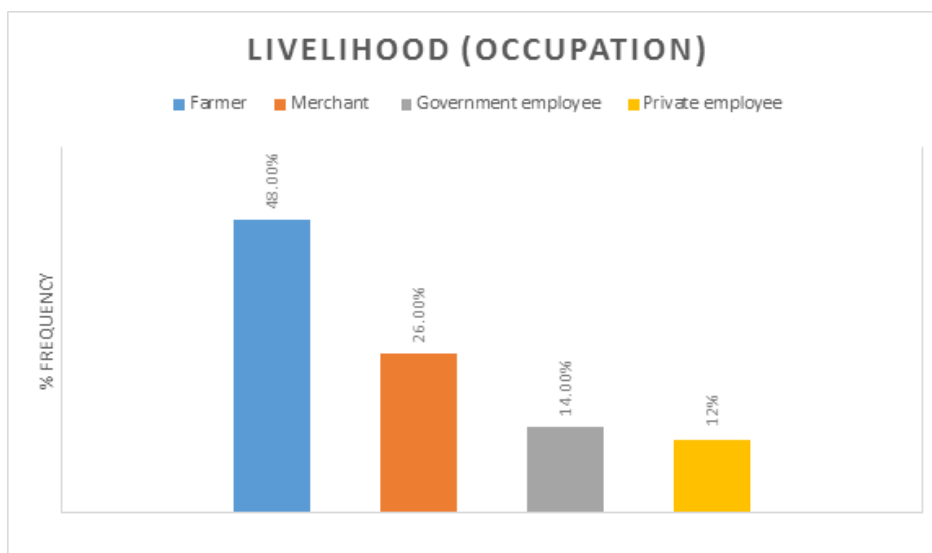


Figure 3: Livelihood of respondents.

Variables	Numbers (N)	Percentage (%) value
Low socio economic status	7	14%
Low academic level	3	6%
Poor environmental and personal sanitation	6	12%
In adequate feeding habit within quality and quantity in take food	6	12%
Malnutrition	4	8%

Live in overcrowded condition leads to increase risk of and illness	5	10%
Weak behavioral status which is a bad habit like excessive drinking alcohol, smoking cigarette and cannabis	6	12%
Exposed to different opportunistic infection and suffered with in many chronic health diseases	9	18%
Immunity system leads to decline	4	8%

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

Variables	Numbers (N)	Percentage (%) value
Cough	7	14%
Fever	6	12%
Chest pain	8	16%
Fatigue	5	10%
Loss of appetite and weight	9	18%
High breathing rate	6	12%
Abnormal breath sound and presence of sputum	9	18%

Table 2: Symptoms for HIV ADIS patient's co infected with pneumonia.

Variables	Numbers (N)	Percentage (%) value
Clearing smoking cigarettes and excessive alcohol usage habit	11	22%
Select suitable living environment	7	14%
Taking adequate high quality and quantity food. It is used to develop and increase the overall activity of immunity components that serve as a defense system	9	18%
Stay away from infected person like to be free from direct oral contact with someone who had pneumonia	14	28%
Obtaining rapid treatment in medication or vaccines	9	18%

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

Discussion

HIV/AIDS is one of the greatest challenges facing mankind globally and the leading cause for morbidity and mortality in Ethiopia. The study was demonstrated that secondary infections and other risk factors are prevalent in the immunocompromised patients due to HIV/AIDS. Immunocompromised patients especially HIV infected individuals had exposed for many kinds of opportunistic microbial pathogens. This finding agrees with other studies [1-3].

The most common clinical respiratory symptoms (like cough and chest pain) were mentioned in previous studies. In our study finding all patient's had weak behavioral features (like smoking cigarette habit) that might have exposed them for co- infections. The outcome of this research is in the line of other recent studies conducted in many time [1, 11-13].

HIV-infected patients were admitted for a higher burden/risk of developing pneumonia and other co-infections/morbidities. The reason behind this, due to low CD4-cell counts. This study was similar with studies conducted in different place [14,15].

HIV infected individuals are more susceptible to respiratory tract infections. Pneumonia is an immense problem among immunocompromised. Pneumonia can be eliminated in various ways. For example, live in free from overcrowded condition and encouraging

good hygiene in crowded homes. In another hand, avoiding oral contact because it can be transmitted in droplets out from the respiratory track. Vaccines also have significant role to protect them from a common causes of severe Pneumonia. It is essential for strengthen the body in all circumstance. This finding was consistent with other early studies done on related title [16,17].

Conclusion

Pneumonia is one of the leading cause of acute and chronic in HIV-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 this study many possible risk factors had explored and identified for respective/contributive opportunistic infections.

Recommendation

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

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Conflict of interest

No conflict of interest is declared.

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