

Hiv Stage 4 With Pulmonary Tuberculosis, Collitis Tuberculosis, Oral Candidiasis, Wasting Syndrome, And Sensorineural Deafness: A Case Report

Fadel Fikri Suharto¹, Edwin Nugraha Fetriawan¹, Muhamad Satria Yudha Pratama¹, R. Yudistira Dwi Ananda¹, Zen Ahmad^{2*}, Raden Ayu Linda Andriani², Harun Hudari³

¹ Internal Medicine, Faculty of Medicine, Sriwijaya University, Palembang, Indonesia

² Pumonology Subdivision, Internal Medicine, Faculty of Medicine, Sriwijaya University, Palembang, Indonesia

³ Tropic Infection Disease Subdivision, Internal Medicine, Faculty of Medicine, Sriwijaya University, Palembang, Indonesia

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Corresponding author:

Zen Ahmad

E-mail address:

zenahmad@gmail.com

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ABSTRACT

Human immunodeficiency virus (HIV) is a retrovirus type virus that infects cells of the human immune system (especially CD4 positive T-cells and major components of the cellular immune system) and interferes with their function. This viral infection results in a continuous decline in the immune system, which will result in immune deficiency. People who are immune deficient/immunodeficiency become more susceptible to various types of infections. A 23 year male, a cafe employee, was admitted to hospital with complaints of weakness since 2 weeks before. He has productive cough for 3 weeks. He had decrease of food appetite, nauseas and vomiting. He had weight loss about 10 kg in the last 4 months. Patient had history of free sex, LGBT, since 2016 and history of hearing loss for 3 months. Laboratory finding showed rhonchi were found at the apex of the right and left lungs, Anti-HIV reactive and Absolute CD-4 count was 53 cell/uL, Gene Xpert MTB was detected, and Acid fast bacilli in stool is positive. Audiometry showed bilateral sensorineural deafness. Patient was diagnosed with HIV stage 4 with pulmonary tuberculosis, tuberculosis collitis, oral candidiasis, wasting syndrome, and sensorineural deafness.

1. Introduction

Human immunodeficiency virus (HIV) is a retrovirus type virus that infects cells of the human immune system (especially CD4 positive T-cells and major components of the cellular immune system) and interferes with their function. This viral infection results in a continuous decline in the immune system, which will result in immune deficiency. People who are immune deficient/immunodeficiency become more susceptible to various types of infections.¹

Tuberculosis is an opportunistic infection that

causes the highest mortality rate in people with HIV/AIDS. In Indonesia alone, the prevalence of TB-HIV coinfection has doubled from 2006 (0.7 million) to 2007 (1.37 million). The World Health Organization (WHO) estimates that one-third to one-half of people living with HIV/AIDS will have active tuberculosis.¹

Here we include an illustration case of a patient with HIV stage 4 with pulmonary tuberculosis, tuberculous colitis, oral candidiasis, wasting syndrome, and sensorineural deafness.

2. Case Presentation

Male, 23 years old, cafe employee, was treated with complaints of weakness for 2 weeks before admitted to hospital. Additional complaints of productive cough for 3 weeks before admitted to hospital, with productive cough, about ½ tablespoon per cough. He had decrease of food appetite, patient only ate 3 tablespoons of rice 3 times a day. Patient was nauseas and vomiting. Patient had weight loss about 10 kg in the last 4 months. Patient had history of free sex, LGBT, since 2016. History of hearing loss for 3 months ago.

From the physical examination, patient was conscious, blood pressure 110/70 mmHg, pulse 120 times per minute, respiratory rate 21 times per minute, temperature 36.5°C, BMI 17.6 kg/m² (underweight). On specific examination of the head, pale palpebral conjunctiva. Thorax examination, rhonchi were found at the apex of the right and left lungs. On extremities, acral and plantar was pallor.

From laboratory examination, Hb 4.7 g/dL, Platelets 120,000/uL, MCV 86.8 fl, MCH 28 pg, MCHC 32g/dL, Reticulocytes 3.70%, Calcium 6.7 mg/dL, SGOT 105 U/L, SGPT 54 U/L, Sodium 122 mEq/L, Potassium 3.4 mEq/L, Albumin 2.1 g/dL, blood sugar 107 mg/dL, Anti-HIV reactive. Absolute CD-4 count 53 cell/uL, Gene Xpert MTB was detected, Rifampicin resistance was not detected, Acid fast bacilli in stool is positive. Audiometry showed bilateral sensorineural deafness.

Patient was diagnosed with HIV Stage 4 with Pulmonary Tuberculosis, Tuberculosis Collitis, Oral Candidiasis, Wasting Syndrome, and Sensorineural Deafness.

Patient was treated with 1st category antituberculosis (2RHZE) drugs for 2 months and will be continued with (4RH) regiments. Antituberculosis was first administered for 2 weeks, then continued with antiretroviral (ARV) TLE (efavirenz 400 mg / lamivudine 300 mg / tenofovir disoproxil fumarate

300 mg) FDC. Author did this due to prevent immune reconstitution inflammatory syndrome (IRIS). The patient also treated with PRC transfusion, electrolyte correction, nutritional correction by giving a high-calorie liquid diet of 1900 kcal with a protein intake of 60 grams per day. Patient received a pair of hearing aid to correct his sensorineural deafness. During the treatment the patient experienced clinical improvement and the patient was discharged form hospital in a stable condition.

3. Discussion

Tuberculosis (TB) is a chronic infectious disease caused by the bacterium *Mycobacterium tuberculosis*. This bacterium is rod-shaped and is acid-fast, so it is often known as Acid-Fast Basil (AFB/BTA). Most TB bacteria are often found to infect the lung parenchyma and cause pulmonary TB, but these bacteria also have the ability to infect other organs of the body (extra-pulmonary TB) such as the pleura, lymph nodes, bones, and other extra-pulmonary organs.³

All suspected TB patients should undergo bacteriological examination to confirm TB disease. Bacteriological examination refers to examination of smears from biological preparations (sputum or other specimens), culture examination and identification of *M. tuberculosis* or rapid diagnostic methods that have received WHO recommendations. In areas with laboratories whose quality is monitored through an external quality monitoring system, smear positive pulmonary TB cases are confirmed based on the results of a positive smear examination, at least from one specimen. In areas where the quality of the laboratory is not monitored, the definition of a smear positive TB case is if there are at least two smear positive specimens. Figure 1 is the flow of Pulmonary TB algorithm in Indonesia.³

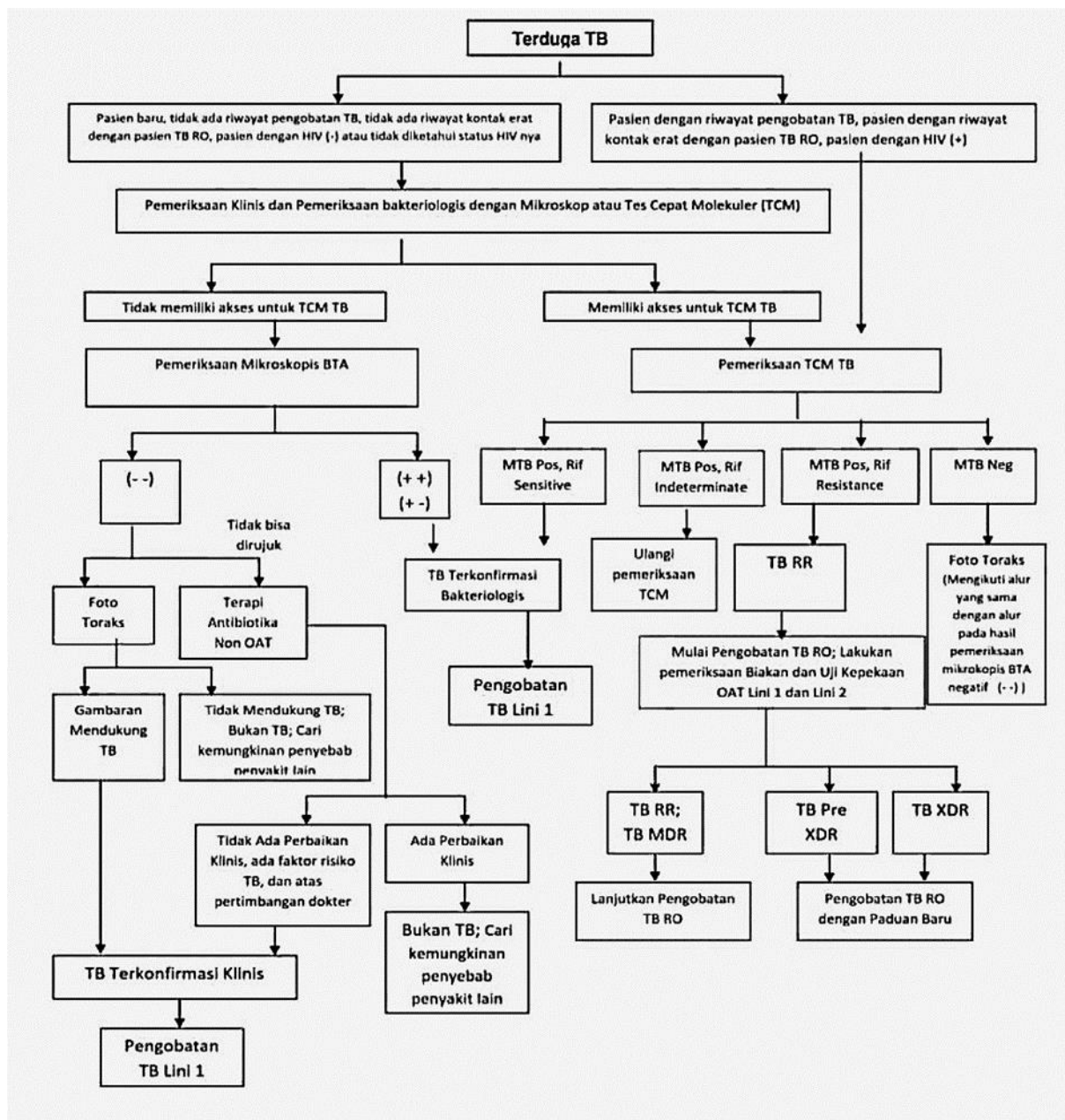


Figure 1. Flow of diagnosis of pulmonary tuberculosis.³

Patient was diagnosed with a new case of pulmonary TB bacteriologically confirmed and treated with Antituberculosis drug (ATD) 4 FDC (RHZE) 3 tablets for 2 months and will be continued with ATD 2FDC 3 tablets for 4 months later.

ARV therapy should be given to all HIV patients regardless of clinical stage and CD4 cell count. In HIV patients with TB, TB treatment is started first, then

followed by ARV treatment as soon as possible within the first 8 weeks of TB treatment. HIV patients with TB who are severely immunosuppressed (CD4 <50 cells/ μ L) should receive ARV therapy within the first 2 weeks of TB treatment.⁴

First-line ARV guidelines should consist of two nucleoside reverse-transcriptase inhibitors (NRTIs) plus a non-nucleoside reverse-transcriptase inhibitor (NNRTI)

or protease inhibitor (PI). Second-line ARV guidelines using a boosted-PI + combination of 2 NRTIs are recommended as the second-line therapy of choice for adults, adolescents, and children. In cases of first-line and second-line failure with NRTIs, NNRTIs and PIs such as in Indonesia, the next combination that can be given is a combination of INSTI and second-generation PIs, with or without additional NRTIs.⁴

Tuberculosis (TB) in the digestive tracts is one of the manifestations of extrapulmonary TB and constitutes 3-16% of all cases of extrapulmonary TB. This type of TB can attack the digestive tracts, peritoneum, mesenteric lymph nodes, liver, and spleen. About 66-75% of the digestive system is affected as a result of TB colitis. The intestine and peritoneum can be infected through mesenteric lymph nodes, infected fallopian tubes, direct spread from infected organs, and hematogenous spread. Direct infection of the intestinal wall is very likely to occur after drinking unpasteurized milk or ingestion of large quantities of bacilli from the pulmonary cavity. Reactivation from the body several years after hematogenous spread may occur.⁴

Pathogenesis of gastrointestinal TB can be divided into 4 mechanisms, namely swallowing infected sputum, hematogenous spread from active pulmonary processes or miliary TB, consuming contaminated milk or food and direct spread from surrounding organs. Infection may occur primarily in the gastrointestinal tract or secondary to other foci in the body.⁵

Therapy with standard anti-tuberculosis drugs has high efficacy in intestinal TB. Adherence to taking medication is the main key that determines the success of therapy. A study on gastrointestinal TB in India stated that if a strong clinical suspicion is found in an endemic area, patients can be given empiric therapy using anti-tuberculosis drugs (OAT). Another study conducted by Ramanathan et al concluded that justifying the initiation of antituberculosis drug therapy in endemic areas based on clinical suspicion and adequate response to therapy should be used as the basis for the diagnosis of gastrointestinal TB even though histopathological or microbiological confirmation is not possible.^{4,5}

Marshall JB, in a study on the duration of TB

treatment, stated that 6, 9, or 18 to 24 month therapy regimens all proved effective in the management of extrapulmonary TB. Systemic symptoms such as fever, anorexia, and weight loss may subside within 4 to 6 weeks, whereas gastrointestinal symptoms may take longer to recover.⁵

Patient was diagnosed with colitis TB, and treated like a new case of pulmonary TB bacteriologically confirmed, with ATD 4 FDC (RHZE) 3 tablets for 2 months and will be continued with ATD 2FDC (4RH) 3 tablets for 4 months.

Patients with HIV/AIDS experienced changes in conventional audiological examination, high-frequency audiometry, otoacoustic emission, decreased otoacoustic emission and auditory arousal potential, indicating involvement in the peripheral auditory pathway as well as in the central auditory pathway.⁶

There are several changes in the peripheral auditory pathways that predispose people with HIV/AIDS due to ototoxicity and the action of the virus or high viral loads. Due to the morphological arrangement of nerve fibers, they have the characteristics of hair cells and/or neurons, in responding specifically to certain frequencies, which is called tonotopy. In tonotopy, nerve fibers originating from the apex of the cochlea and forming the central region of the cochlear nerve are responsible for low-frequency transmission, whereas fibers originating from the base and forming the periphery of the nerve, are responsible for high-frequency transmission, suggesting that, at this time, it is not possible to know clearly about the causative agents of hearing loss in people with HIV/AIDS.^{7,8}

Definitive treatment for sensorineural deafness is the use of hearing aids. Some individuals with severe and very severe sensorineural hearing loss may be considered for surgical implantation of an electronic device behind the ear known as a cochlear implant that directly stimulates the auditory nerve.⁷⁻⁹

4. Conclusion

Management of patients with HIV/AIDS involves many experts and requires comprehensive and holistic

management so that patients can be managed properly and there is an increase in the quality of life of patients with HIV/AIDS.

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