



PAULUS SUGIANTO <paulus.sugianto@fk.unair.ac.id>

Author New Submission Acknowledgement letter: apjtm_968_22

1 pesan

Asian Pacific Journal of Tropical Medicine <editor@apjtm.org>
Kepada: paulus.sugianto@fk.unair.ac.id

24 Oktober 2022 pukul 22.20

Dear Dr Dr. Paulus Sugianto,

Asian Pacific Journal of Tropical Medicine has received your manuscript entitled "Long-Term Albendazole Therapy for Diffuse Parenchymal Neurocysticercosis in Immunocompetent Patient with Complete Resolution: A Case Reports " for consideration for publication. The reference number for this manuscript is "apjtm_968_22". Kindly quote this in future correspondences related to this manuscript.

The manuscript is being reviewed for possible publication with the understanding that it is being submitted to ONE journal at a time and has NOT been published, simultaneously submitted, or already accepted for publication elsewhere either as a whole or in a part.

Online submission of this article implies that the corresponding author has written consent from all the contributors to act as the corresponding author.

The co-authors are requested to send their agreement response on the **Digital Copyright** sent via a link to their associated emails, within 1 week of submission. The status can be viewed in the 'Manuscript Information page' from the submitting author's area. The decision about the manuscript will be conveyed only on receipt of the agreement on copyright form received from all contributors.

High-resolution images are required at the time of acceptance, you should be notified separately for the same if images uploaded by you are not of printable quality.

The Editors will review the submitted manuscript initially. If found suitable, it will follow a double-blinded peer review. We aim to finish this review process within a short time frame, at the end of which a decision on the suitability or otherwise of the manuscript will be conveyed to you via this system.

During this process, you are free to check the progress of the manuscript through various phases from our online manuscript processing site <https://review.jow.medknow.com/apjtm>.

We thank you for submitting your valuable work to the Asian Pacific Journal of Tropical Medicine.

Yours sincerely,

Editorial Team

Asian Pacific Journal of Tropical Medicine



PAULUS SUGIANTO <paulus.sugianto@fk.unair.ac.id>

Manuscript for revision: apjtm_968_22

1 pesan

Asian Pacific Journal of Tropical Medicine <editor@apjtm.org>
Kepada: paulus.sugianto@fk.unair.ac.id

5 Desember 2022 pukul 15.04

Dear Dr Sugianto,

With reference to your manuscript apjtm_968_22 entitled Long-Term Albendazole Therapy for Diffuse Parenchymal Neurocysticercosis in Immunocompetent Patient with Complete Resolution: A Case Reports , please review the comments of the referees from our site <https://review.jow.medknow.com/apjtm>. The manuscript would be reconsidered after requisite modifications as per the comments and instructions provided by the journal.

If you wish to continue with the publication process, kindly make the changes according to the comments and upload the revised manuscript along with clarifications for all the comments clearly indicating the areas where the changes have been made.

Do check the FAQ regarding replying to the comments and uploading a file. The template of point-by-point comments files for the reviewers, is available in your dashboard under the 'Downloads' menu option.

The journal allows two weeks for the revision of the manuscript. If we do not hear from you within this period, we will consider it as your decision to withdraw your article from publication. Please also note that the submission of the revised article does not guarantee its final acceptance by the journal.

We thank you for submitting your valuable research work to Asian Pacific Journal of Tropical Medicine.

With warm personal regards,

Editorial Team

Asian Pacific Journal of Tropical Medicine



PAULUS SUGIANTO <paulus.sugianto@fk.unair.ac.id>

apjtm Manuscript for revision: apjtm_968_22 Completion date is nearing

1 pesan

Asian Pacific Journal of Tropical Medicine <editor@apjtm.org>

22 November 2022 pukul 05.22

Kepada: paulus.sugianto@fk.unair.ac.id

Dear Dr Sugianto,

This mail is with reference to your manuscript 'apjtm_968_22' entitled Long-Term Albendazole Therapy for Diffuse Parenchymal Neurocysticercosis in Immunocompetent Patient with Complete Resolution: A Case Reports , which was sent to you some time back for revision.

We have not received the modified manuscript to date. If we do not hear from you within the due date Dec 1, 2022 12:00:00 AM, we will consider it your non-desire to continue the article with us.

Details are available at the manuscript management site <https://review.jow.medknow.com/apjtm>. Kindly log in as Author.

Thanking you

Editorial Team

Asian Pacific Journal of Tropical Medicine



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8 Januari 2023 pukul 12.52

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 3. Please proofread the article carefully throughout the whole text (including spelling mistakes, space, punctuation, italics, grammatical mistakes, abbreviations etc) and highlight all the revisions on PDF file directly if there is any. Any careless mistakes will result in a rejection of the article.
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8 Januari 2023 pukul 18.04

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Thank you for taking the time to revise our manuscript. We still proofread the manuscript, but for the revision should we just highlight and put on the comments, or adjust the correction and send back by ms. word?.

Grateful for your attention

[Kutipan teks disembunyikan]

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response :

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-surename has been highlight with yellow color

-affiliation : we add comma, it should be :

Department of Neurology, Faculty of Medicine - Universitas Airlangga

-corresponding information : already correct

-authors' contributions section are correct

question 2

Please verify the the data and results of this paper and make sure the units, data and all other contents are correct.

response :

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question 3.

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response:

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question 4.

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response:

citation [2] should be added in discussion on the second sentence :

In developing tropical countries such as Indonesia, Tuerculosis is endemic [2].


Then, we attach the manuscript that has been given highlights and comments from the author and the team

Thank you for your attention

Best Regards

Author and team

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11 Januari 2023 pukul 12.48

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发件人: PAULUS SUGIANTO <paulus.sugianto@fk.unair.ac.id>

发送时间: 2023年1月8日(星期日) 23:07

收件人: (zq) apjtm2008_4 <apjtm2008_4@aliyun.com>

主 题: Re: Proof of apjtm_968_22

[Kutipan teks disembunyikan]

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12 Januari 2023 pukul 06.16

Dear Asian Pacific Journal of Tropical Medicine

We gratefully received a letter from you. We confirm that there's no revisions or addition.

Thank you for your time to help us

Best regards

Paulus Sugianto and team

[Kutipan teks disembunyikan]



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Revise request for apjtm_968_22

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16 Desember 2022 pukul 10.56

Dear author,

Thanks for your submission and patience to wait for the decision.

Before making the final decision, please response to all the comments, make revisions directly on the attached files (Please do not change the format including any space, since we have already edited for typesetting if the aricle is accepted) and highlight all the changes for tracking (EVEN AN ADDED SPACE HAS TO BE HIGHLIGHTED ALSO).

We will make the final decision after receiving your revisions.

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19 Desember 2022 pukul 08.46

Dear Asian Pacific Journal of Tropical Medicine

We apologize for just reading the following message. But are we still given the opportunity to provide our revisions and feedback?

[Kutipan teks disembunyikan]

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19 Desember 2022 pukul 08.56

Dear author,

Thanks for your reply. Yes, you can send the revised file via this email. One more issue, please note that authors' names under the article title (make sure given name is put ahead, with surname followed. Highlight the surnames.)

Looking forward to your reply.

Best regards

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发件人: PAULUS SUGIANTO <paulus.sugianto@fk.unair.ac.id>

发送时间: 2022年12月19日(星期一) 09:46

收件人: apjtm2008_4 <apjtm2008_4@aliyun.com>

主 题: Re: Revise request for apjtm_968_22

[Kutipan teks disembunyikan]

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19 Desember 2022 pukul 09.20

Dear Asian Pacific Journal of Tropical Medicine

Noted with thanks.

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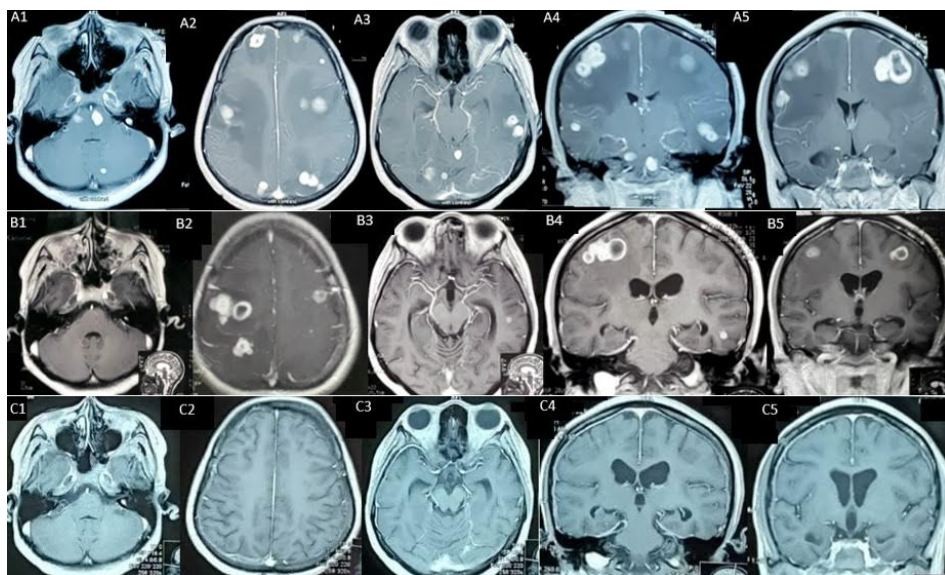
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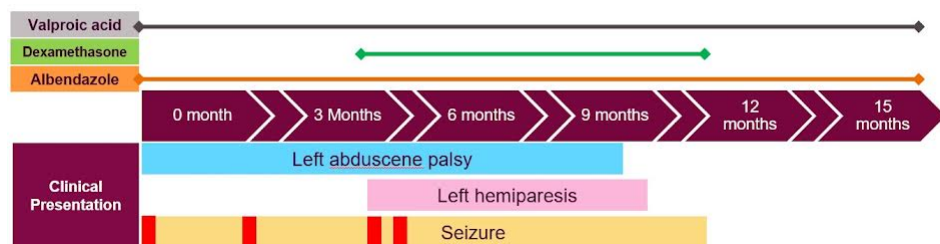
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Timeline of Treatment and Clinical Course



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22 Desember 2022 pukul 13.54

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8 Januari 2023 pukul 18.04

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response :

-given name is already put ahead with surname followed

-surname has been highlight with yellow color

-affiliation : we add comma, it should be :

Department of Neurology, Faculty of Medicine - Universitas Airlangga

-corresponding information : already correct

-authors' contributions section are correct

question 2

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response :

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question 3.

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response:

there are no more correction

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Text citation [2] is missing. Please add [2] in the correct place.

Please reply via this email Before Jan 10 Beijing time for further process. Thank you.

response:

citation [2] should be added in discussion on the second sentence :

In developing tropical countries such as Indonesia, Tuerculosis is endemic [2].


Then, we attach the manuscript that has been given highlights and comments from the author and the team

Thank you for your attention

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Author and team

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11 Januari 2023 pukul 12.48

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发件人: PAULUS SUGIANTO <paulus.sugianto@fk.unair.ac.id>

发送时间: 2023年1月8日(星期日) 23:07

收件人: (zq) apjtm2008_4 <apjtm2008_4@aliyun.com>

主 题: Re: Proof of apjtm_968_22

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12 Januari 2023 pukul 06.16

Dear Asian Pacific Journal of Tropical Medicine

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Thank you for your time to help us

Best regards

Paulus Sugianto and team

[Kutipan teks disembunyikan]



Case Report

Asian Pacific Journal of Tropical Medicine

apjtm.org



doi:

Impact Factor: 3.041

Long-term albendazole therapy for diffuse parenchymal neurocysticercosis in immunocompetent patient with complete resolution: A case report

Paulus Sugianto[✉], Abdulloh Machin, Wardah Rahmatul Islamiyah, Cindy Cecilia

Department of Neurology Faculty of Medicine Universitas Airlangga / Dr. Soetomo General-Hospital, Surabaya, Indonesia

ABSTRACT

Rationale: Neurocysticercosis (NCC) is a neglected tropical disease caused by the larvae of *Taenia solium*. Delays in diagnosis and treatment could cause significant disability. Brain contrast CT or MRI will demonstrate an enhancing lesion in the brain parenchyma. This infection may occur in immunocompetent patients. Combined with dexamethasone and other symptomatic treatment, anthelmintic therapy could provide a better clinical outcome. We present a case of diffuse parenchymal NCC mimicking tuberculous meningitis in an immunocompetent patient.

Patient concerns: A 24-year-old immunocompetent woman with serial focal to generalized seizure, left body weakness, left abducens palsy, chronic cough, and body weight loss. She came from an area which was unlikely to have contact with *Taenia solium*.

Diagnosis: Diffuse parenchymal NCC.

Intervention: Valproic acid, dexamethasone and 15 months of albendazole therapy.

Outcome: Complete recovery without any neurological sequelae.

Lessons: Prolonged anthelmintic treatment may benefit NCC patients with multiple cerebral parenchymal lesions.

KEYWORDS: Albendazole; Corticosteroid; Neurocysticercosis; Prognosis; *Taenia solium*; Tuberculous meningitis

1. Introduction

Neurocysticercosis (NCC) is the most severe form of parasitic cysticercosis disease affecting the brain. The World Health Organization (WHO) states that NCC is a neglected tropical disease caused by ingesting *Taenia solium* from raw or undercooked meat and vegetables[1]. The prevalence rate of NCC in Asia ranges from 0.8% to 41.8%, depending on each country's socioeconomic culture, diet and hygiene. Thailand, Vietnam, and the Philippines have the highest prevalence[1]. Indonesia is an archipelago country with a total NCC prevalence from 1985 to 2006, which is 5.2%–

21.0%[1]. According to WHO, cysticercosis leads to 2.8 million disability-adjusted life-years. The major manifestations are seizures, headaches, and focal neurological deficits. Anthelmintics, steroid, antiseizure drug, or surgical approach varies depending on the stage of the disease[3]. The prognosis for NCC is generally good, but in severe cases, it can lead to sequelae or death[4].

2. Case report

A 24-year-old immunocompetent woman was referred from secondary healthcare with serial right focal to secondary generalized seizure with suspicion of tuberculous meningoencephalitis.

The first seizure was noted five months before admission, with progressive headache, fever, chronic cough, and loss of body weight two months before the first seizure. Due to a lack of healthcare facilities, the patient was referred to a tertiary hospital for further diagnosis and treatment.

She was a local-born Muslim Indonesian lady who was currently a university student. She was living in a rural area in east Java. This housing residence was not near an agricultural or animal husbandry area. She had previously not traveled to the domestic or overseas area and had no contact with NCC patients or with similar symptoms. She has proper hygiene and no history of eating raw or undercooked porcine products. Her risk factor for getting NCC was eating raw vegetables. Her Housing area had a poor public water system, which is also a possible risk factor for getting NCC.

[✉]To whom correspondence may be addressed. E-mail: paulus.sugianto@fk.unair.ac.id
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How to cite this article: Sugianto P, Machin A, Islamiyah WR, Cecilia C. Long-term albendazole therapy for diffuse parenchymal neurocysticercosis in immunocompetent patient with complete resolution: A case report. Asian Pac J Trop Med 2022; 16(): –.

Article history: Received 26 October 2022 Revision 20 December 2022
Accepted Available online

On the examination, blood pressure was 110/80 mmHg, heart rate was 80 times per minut regular, and temperature 38.5 °C. Her previous body weight before the illness was 59 kg, and she was present with 39 kg on examination. Head and neck, lung, heart, and gastrointestinal examination were normal.

Neurological examination showed higher mental function and was normal with Glasgow Coma Scale (GCS) 456, no meningeal sign, and left abducens palsy. An additional laboratory test, tuberculosis screening such as acid-fast-bacillus test, faces examination, chest X-ray, and contrast brain-MRI were performed. Laboratory findings were slight leukopenia, increase in eosinophils, normal neutrophils, negative for HIV test, and normal CD4 levels. The tuberculosis test and feces examination were unremarkable. Head MRI with contrast showed multiple vesicular cystic lesions throughout the brain parenchyma. The largest size was length 1.65 cm and width 1.73 cm which was hypointense on T1W1 hyperintensity T2W1, accompanied by leptomeningeal enhancement with scolex appearance. This result was consistent with active neurocysticercosis

(Figure 1A). Electroencephalogram (EEG) revealed epileptogenicity on the left temporo-occipital. The patient received valproic acid 500 mg twice daily, folic acid, and albendazole 400 mg/day for 15 months.

The patient was re-admitted to the emergency room 4 months after initial treatment due to status epilepticus, decreased consciousness, left hemiparesis, and increased intracranial pressure (ICP). A brain CT scan showed massive brain edema. Dexamethasone 10 mg intravenously, continued by 5 mg three times daily, was administered for five days. She was discharged with oral dexamethasone and tapered off for 2 months. Left hemiparesis and abducens palsy was improving with GCS 15. Albendazole continued until 15 months. The patient has gained 27 kg with left abducens palsy, and hemiparesis was resolved entirely after 11 months of initial treatment. The seizure was controlled after 13 months of anthelmintic treatment. Valproic acid tapered off when the EEG test showed no epileptogenicity after 2 years of therapy and no further clinical seizure. Treatment duration and timeline can be seen in Figure 2.

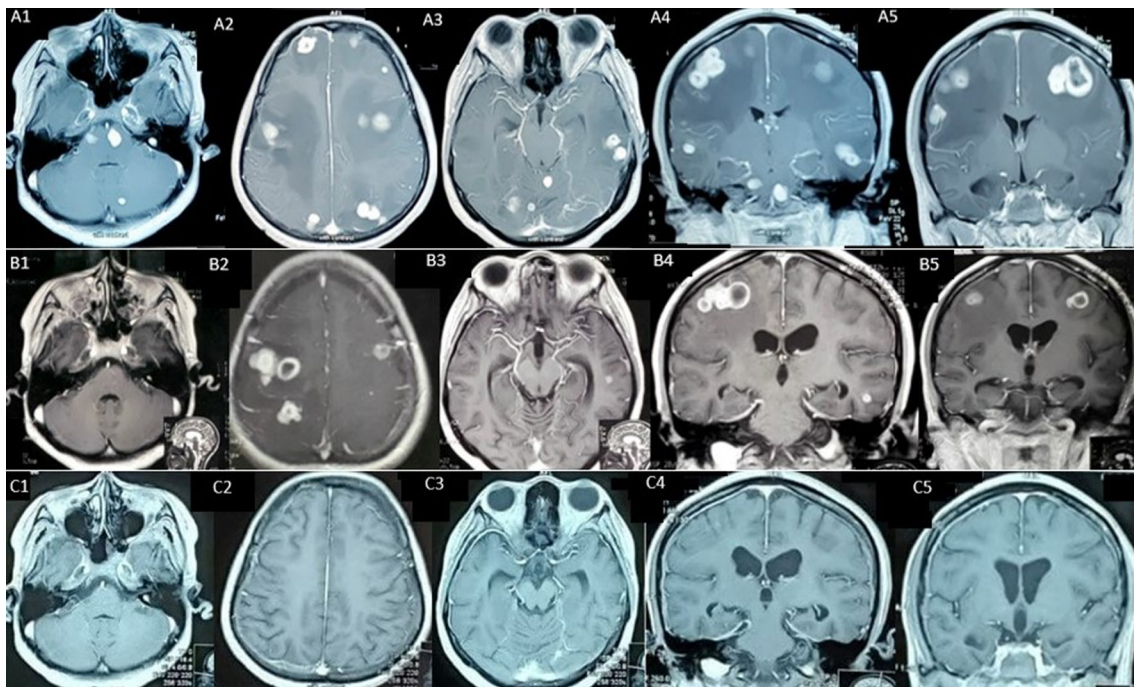


Figure 1. (A) A1-A5 initial head MRI with contrast showed multiple parenchymal cystic lesions with scolex. (B) B1-B5 head MRI with contrast after 6.5 months after initial treatment showed multiple parenchymal cystic lesions. (C) C1-C5 head MRI with contrast after 15 months of albendazole therapy showed almost diminished nodule.

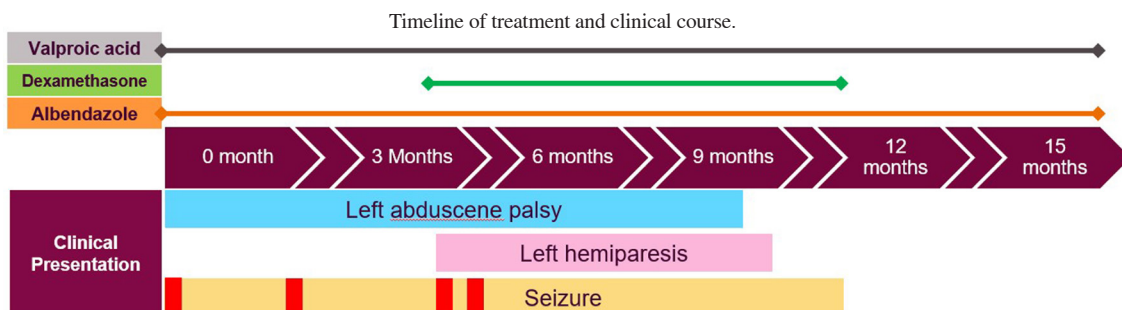


Figure 2. Timeline of treatment and clinical course. Steroids were given during the 4 months treatment period due to cerebral oedema and tapered off until 3 months. Left hemiparesis was present after 4 months, accompanied by a status epilepticus attack (shown by the red box colored).

3. Discussion

Clinical presentation of NCC might mimic other brains infectious diseases[5]. In developing tropical countries such as Indonesia, tuberculosis is endemic. Muslims, as the major population of Indonesia consisting of 87.2%, usually do not eat uncooked meat. Taeniasis is only prevalent in certain districts, such as Bali province, with the majority being Hindu, North Sulawesi and Papua. Therefore, she was suspected of having tuberculous meningoencephalitis[6,7]. Due to a lack of healthcare facility, she was referred to the nearest tertiary health center. Diagnosis of NCC was made after Del-Bruto criteria with the result of definite NCC. It met 1 absolute and 2 major criteria, multiple cystic lesions with scolex showed on MRI, which was highly suggestive of NCC, and cystic resolution after albendazole administration[3].

Anthelmintic therapy, oral albendazole, was initiated with a dose of 15 mg/kg/day. Monotherapy was chosen over dual antiparasitic treatment due to the risk of raised ICP. A study showed that dual antiparasitic therapy could lead to more parasitic cell death and a shorter resolution time. Single albendazole could reach the same result with a higher dose[3].

As the active cyst was still present on brain MRI, albendazole was continued for 15 months. Adverse reactions during treatment, such as headache, dizziness, transaminitis and urticaria, were not found. This adverse reaction was uncommon in monotherapy compared to dual therapy[3]. There is no standard recommendation on the duration of treatment, repeating antihelmintic therapy. Most cases depend on clinical and imaging data.

Studies suggest steroids can accelerate seizure control and cyst resolution[8,9]. Other studies have used this steroid as a priming 3 days before albendazole treatment to prevent a sudden inflammatory brain reaction. The duration and timing of steroid administration vary depending on the patient clinical presentation[8]. The patient was given dexamethasone during readmission in the Emergency Room. There was massive brain edema with increased ICP due to parasite inflammatory response. It was switched into an oral regimen and tapered until 3-month period. It was discontinued after the patient's neurological deficit improved. Long term steroids medication can cause opportunistic infections such as *Strongyloides stercoralis*, which is co-endemic with *Taenia solium* and *Mycobacterium tuberculosis*[8,10].

There were no seizures after 13 months of anthelmintic treatment and 500 mg of valproic acid twice daily. Epileptogenicity in EEG returned to normal 2 years after treatment, and the neurological deficit resolved after 11 months without any sequelae. The patient also gained 27 kg body weight.

Appropriate treatment and monitoring in cases of NCC can provide a good outcome. Long-term use of albendazole, in this case, did not give an adverse reaction and was still proven to be effective in treating severe NCC.

In conclusion, in countries where cysticercosis is endemic, diagnosis and screening for NCC in a low-probability individual still have to be considered. There are no absolute guidelines on NCC's duration and combination of antiparasitic treatment. Different doses and duration of therapy have been applied differently, and most cases are based on expert or individual recommendations. Further study should be carried out for the patient's benefit and safety.

Conflict of interest statement

The authors declare that there is no conflict of interests.

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Authors' contributions

PS conceptualized the global case. WRI and CC performed diagnostic tools. PS, AM and CC monitored and collected patient data. PS and AM analysed and interpreted the case. PS, AM and CC drafted the manuscript

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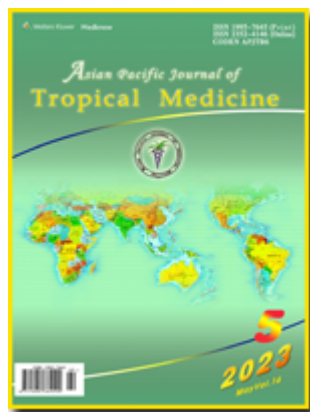


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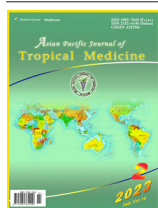
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Long-term albendazole therapy for diffuse parenchymal neurocysticercosis in an immunocompetent patient: A case report

Paulus Sugianto✉, Abdulloh Machin, Wardah Rahmatul Islamiyah, Cindy Cecilia

Department of Neurology, Faculty of Medicine–Universitas Airlangga / Dr. Soetomo General–Hospital, Surabaya, Indonesia

ABSTRACT

Rationale: Neurocysticercosis is a neglected tropical disease caused by the larvae of *Taenia solium* and may occur in immunocompetent people. We report a case of diffuse parenchymal neurocysticercosis mimicking tuberculous meningitis in an immunocompetent patient.

Patient concerns: A 24-year-old immunocompetent woman presented with serial focal to generalized seizure, left body weakness, left abducens palsy, chronic cough, and body weight loss. She came from an area where she was unlikely to have contact with *Taenia solium*.

Diagnosis: Diffuse parenchymal neurocysticercosis.

Intervention: Valproic acid, dexamethasone and 15 months of albendazole therapy.

Outcome: Complete recovery without any neurological sequelae.

Lessons: Prolonged anthelmintic treatment may benefit neurocysticercosis patients with multiple cerebral parenchymal lesions.

KEYWORDS: Albendazole; Corticosteroid; Neurocysticercosis; Prognosis; *Taenia solium*; Tuberculous meningitis

1. Introduction

Neurocysticercosis (NCC) is the most severe form of parasitic cysticercosis disease affecting the brain. The World Health Organization (WHO) states that NCC is a neglected tropical disease caused by ingesting *Taenia solium* from raw or undercooked meat and vegetables[1]. The prevalence rate of NCC in Asia ranges from 0.8% to 41.8%, depending on each country's socioeconomic culture, diet and hygiene. Thailand, Vietnam, and the Philippines have the highest prevalence[1]. Indonesia is an archipelago country with a total NCC prevalence from 1985 to 2006, which is 5.2%–21.0%[1]. According to WHO, cysticercosis leads to 2.8 million

disability-adjusted life-years. The major manifestations are seizures, headaches, and focal neurological deficits. Anthelmintics, steroid, antiseizure drug, or surgical approach varies depending on the stage of the disease[2]. The prognosis for NCC is generally good, but in severe cases, it can lead to sequelae or death[3].

2. Case report

A 24-year-old immunocompetent woman was referred from secondary healthcare with serial right focal to secondary generalized seizure with suspicion of tuberculous meningoencephalitis.

The first seizure was noted five months before admission, with progressive headache, fever, chronic cough, and loss of body weight two months before the first seizure. Due to a lack of healthcare facilities, the patient was referred to a tertiary hospital for further diagnosis and treatment.

She was a local-born Muslim Indonesian lady who was currently a university student. She was living in a rural area in east Java. This housing residence was not near an agricultural or animal husbandry area. She had previously not traveled to the domestic or overseas area and had no contact with NCC patients or with similar symptoms. She has proper hygiene and no history of eating raw or undercooked porcine products. Her risk factor for getting NCC was eating raw vegetables. Her Housing area had a poor public water system, which is also a possible risk factor for getting NCC.

✉To whom correspondence may be addressed. E-mail: paulus.sugianto@fk.unair.ac.id
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On the examination, blood pressure was 110/80 mmHg, heart rate was 80 times per minut regular, and temperature 38.5 °C. Her previous body weight before the illness was 59 kg, and she was present with 39 kg on examination. Head and neck, lung, heart, and gastrointestinal examination were normal.

Neurological examination showed higher mental function and was normal with Glasgow Coma Scale (GCS) 456, no meningeal sign, and left abducens palsy. An additional laboratory test, tuberculosis screening such as acid-fast-bacillus test, faces examination, chest X-ray, and contrast brain-MRI were performed. Laboratory findings were slight leukopenia, increase in eosinophils, normal neutrophils, negative for HIV test, and normal CD4 levels. The tuberculosis test and feces examination were unremarkable. Head MRI with contrast showed multiple vesicular cystic lesions throughout the brain parenchyma. The largest size was length 1.65 cm and width 1.73 cm which was hypointense on T1W1 hyperintensity T2W1, accompanied by leptomeningeal enhancement with scolex appearance. This result was consistent with active neurocysticercosis

(Figure 1A). Electroencephalogram (EEG) revealed epileptogenicity on the left temporo-occipital. The patient received valproic acid 500 mg twice daily, folic acid, and albendazole 400 mg/day for 15 months.

The patient was re-admitted to the emergency room 4 months after initial treatment due to status epilepticus, decreased consciousness, left hemiparesis, and increased intracranial pressure (ICP). A brain CT scan showed massive brain edema. Dexamethasone 10 mg intravenously, continued by 5 mg three times daily, was administered for five days. She was discharged with oral dexamethasone and tapered off for 2 months. Left hemiparesis and abducens palsy was improving with GCS 15. Albendazole continued until 15 months. The patient has gained 27 kg with left abducens palsy, and hemiparesis was resolved entirely after 11 months of initial treatment. The seizure was controlled after 13 months of anthelmintic treatment. Valproic acid tapered off when the EEG test showed no epileptogenicity after 2 years of therapy and no further clinical seizure. Treatment duration and timeline can be seen in Figure 2.

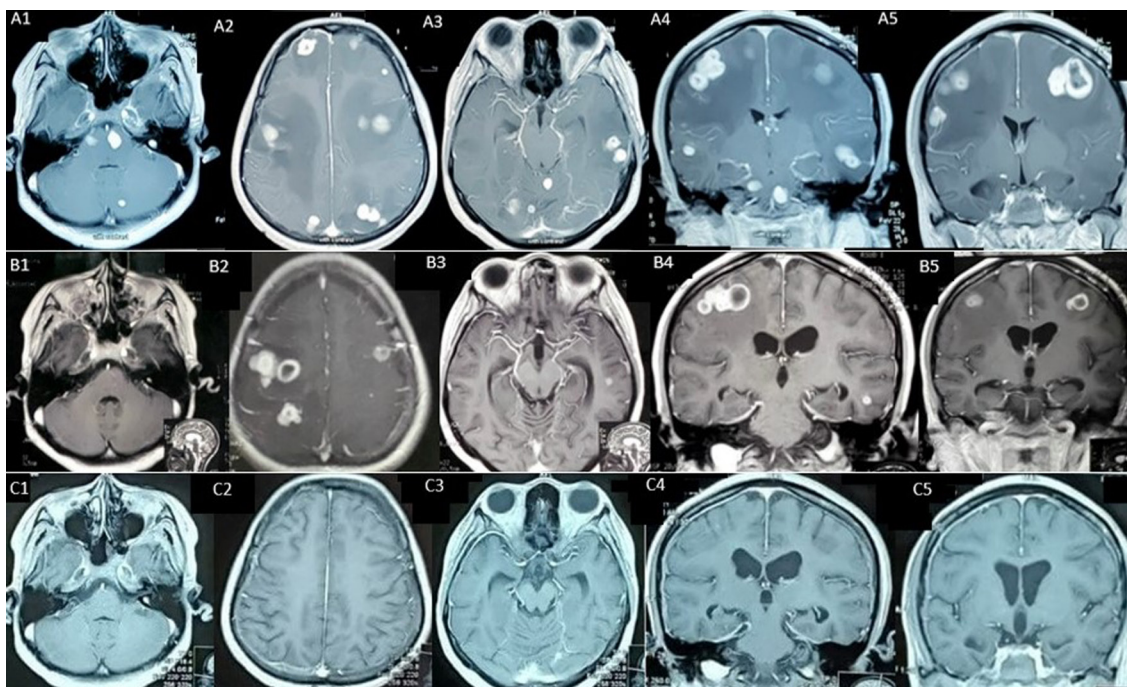


Figure 1. (A) A1-A5 initial head MRI with contrast showed multiple parenchymal cystic lesions with scolex. (B) B1-B5 head MRI with contrast after 6.5 months after initial treatment showed multiple parenchymal cystic lesions. (C) C1-C5 head MRI with contrast after 15 months of albendazole therapy showed almost diminished nodule.

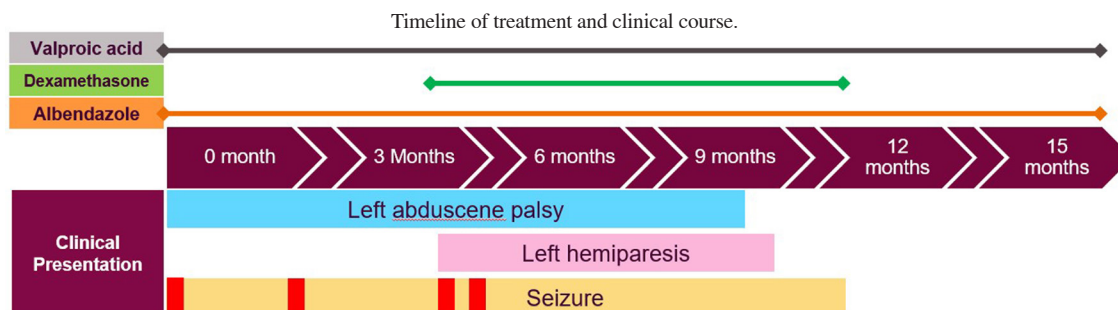


Figure 2. Timeline of treatment and clinical course. Steroids were given during the 4 months treatment period due to cerebral oedema and tapered off until 3 months. Left hemiparesis was present after 4 months, accompanied by a status epilepticus attack (shown by the red box colored).

3. Discussion

Clinical presentation of NCC might mimic other brains infectious diseases[4]. In developing tropical countries such as Indonesia, tuberculosis is endemic[5]. Muslims, as the major population of Indonesia consisting of 87.2%, usually do not eat uncooked meat. Taeniasis is only prevalent in certain districts, such as Bali province, with the majority being Hindu, North Sulawesi and Papua. Therefore, she was suspected of having tuberculous meningoencephalitis[6,7]. Due to a lack of healthcare facility, she was referred to the nearest tertiary health center. Diagnosis of NCC was made after Del-Bruto criteria with the result of definite NCC. It met 1 absolute and 2 major criteria, multiple cystic lesions with scolex showed on MRI, which was highly suggestive of NCC, and cystic resolution after albendazole administration[2].

Anthelmintic therapy, oral albendazole, was initiated with a dose of 15 mg/kg/day. Monotherapy was chosen over dual antiparasitic treatment due to the risk of raised ICP. A study showed that dual antiparasitic therapy could lead to more parasitic cell death and a shorter resolution time. Single albendazole could reach the same result with a higher dose[2].

As the active cyst was still present on brain MRI, albendazole was continued for 15 months. Adverse reactions during treatment, such as headache, dizziness, transaminitis and urticaria, were not found. This adverse reaction was uncommon in monotherapy compared to dual therapy[2]. There is no standard recommendation on the duration of treatment, repeating antihelmintic therapy. Most cases depend on clinical and imaging data.

Studies suggest steroids can accelerate seizure control and cyst resolution[8,9]. Other studies have used this steroid as a priming 3 days before albendazole treatment to prevent a sudden inflammatory brain reaction. The duration and timing of steroid administration vary depending on the patient clinical presentation[8]. The patient was given dexamethasone during readmission in the Emergency Room. There was massive brain edema with increased ICP due to parasite inflammatory response. It was switched into an oral regimen and tapered until 3-month period. It was discontinued after the patient's neurological deficit improved. Long term steroids medication can cause opportunistic infections such as *Strongyloides stercoralis*, which is co-endemic with *Taenia solium* and *Mycobacterium tuberculosis*[8,10].

There were no seizures after 13 months of anthelmintic treatment and 500 mg of valproic acid twice daily. Epileptogenicity in EEG returned to normal 2 years after treatment, and the neurological deficit resolved after 11 months without any sequelae. The patient also gained 27 kg body weight.

Appropriate treatment and monitoring in cases of NCC can provide a good outcome. Long-term use of albendazole, in this case, did not give an adverse reaction and was still proven to be effective in treating severe NCC.

In conclusion, in countries where cysticercosis is endemic, diagnosis and screening for NCC in a low-probability individual still have to be considered. There are no absolute guidelines on NCC's duration and combination of antiparasitic treatment. Different doses and duration of therapy have been applied differently, and most cases are based on expert or individual recommendations. Further study should be carried out for the patient's benefit and safety.

Conflict of interest statement

The authors declare that there is no conflict of interests.

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Authors' contributions

PS conceptualized the global case. WRI and CC performed diagnostic tools. PS, AM and CC monitored and collected patient data. PS and AM analysed and interpreted the case. PS, AM and CC drafted the manuscript.

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