VOLUME - 9, ISSUE - 9, September - 2020 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

General Medicine

CRYPTOCOCCAL MENINGITIS : SUCCESSFULLY TREATED WITH LOPSOMAL AMPHOTERICIN B , FLUCYTOSINE AND SEPTRAN .

Abhishek Hanumant Khaire*

2nd Year Pharm D Student , Modern College Of Pharmacy , Nigdi , Pune -44
*Corresponding Author

Sumedha Anil Savane

2nd Year Pharm D Student , Modern College Of Pharmacy , Nigdi , Pune -44

ABSTRACT

Cryptococcal meningitis is an infection caused by yeast like fungus cryptococcus . The genus cryptococcus contains at least 39 species of yeast .most human infection due to cryptococcal neoformans .where as the infection with fungus cryptococcus is known as cryptococcosis. Which shows symptoms like severe headache , neck stiffness , fever , confusion and coma . Other symptoms may be respiratory secondary to pulmonary disease or dermatological lesion resembling molluscum in skin disease. In this MRI , CT and culture test is performed . Treatment is Amphotericin B and Flucytosine is used in combination and also liposomal amphotericin is used in this condition . Current case report of a 66 years old male patient presented with slurring of speech, not obeying , found to have tongue bite since (2-3 days) . The patient was successfully recovered by proper medication and patient counseling .

KEYWORDS :

INTRODUCTION :

Cryptococcus is an fungus found in the soil throughout the world. Sometimes these spores causes symptoms of a respiratory infection ,but other times there are no symptoms at all .However ,in people with weakened immune systems, the fungus can stay hidden in the body and later reactive , spreading to other part of the body and causing serious disease.

Cryptococcal meningitis :

An infection with the fungus cryptococcus is known as cryptococcosis , and it is a serious opportunistic infection among people with advanced HIV/AIDS . Cryptococcus is not contagious. Cryptococcus meningitis specifically occurs after cryptococcus has spread from the lung to the brain . Meningitis can also be caused by a variety of other organism , including bacteria , virus , and other fungi .Symptoms are dependent on site of infection .It include fever and Severe headache ,often without the characteristics symptom of meningism such as photophobia and neck stiffness. Raised intracranial pressure may be associated with nausea, vomiting , Nuchal rigidity , Focal Signs , confusion and coma . Other symptoms may be respiratory secondary to pulmonary disease or dermatological lesion resembling molluscum in skin disease.

The principal test is serum cryptococcal antigen which , if negative ,generally excludes disseminated disease . In the presence of a positive result , all patient should have a lumbar puncture for CSF culture after cerebral imaging with computed tomography (CT) or magnetic resonance imaging (MRI) . Manometry via lumbar puncture should be performed to exclude raised intra cranial pressure. Blood culture should also performed and if positive for cryptococcus , sensitivity testing may be performed . The India ink is intensive for low fungal burden . Other diagnosis is (LFA) lateral flow assay which rapidly detect cryptococcal polysaccharide capsule using gold –conjugated anti-cryptococcal monoclonal antibodies directed against cryptococcal neoformans.

Treatment consist of an induction phase and a maintenance phase . First –line treatment in the induction phase is intravenous liposomal formulation of amphotericin 4mg/kg/day (once daily dosing) plus intravenous flucytosine 100mg/kg/day (four times daily dosing) . This is continued for at 2 week or until CSF culture is negative for cryptococcus . loposomal amphotericin is the preferred formulation to reduce drug toxicity.

Case Report :

A 66 years old male came up with complaints of slurring of speech, not obeying , found to have tongue bite since (2-3 days).The patient had a history of Diabetic mellitus and Hypertension since 15 years and history of coronary artery bypass surgery (CABS) and aortic valve replacement (AVR) . Treatment was initiated in (2001) with ART , 2LE-zidovudine lamivudine, Metolar XR-12.5mg OD. MRI were done in 2020 which implied.

Brain MRI Report :

Small acute lacunar infarcts in right (RT) frontal lobe , diffuse cerebral and cerebral atrophy with chronic white matter changes.

The patient was given , Tab. Flu cytosine 500 mg (QID) (Antifungal) , Cap. Metolar XR 12.5 mg (OD) (Antihypertensive) ,Tab. Septran (OD) (Antibiotic) . His Blood pressure is 157/100 mm Hg. Pulse-97 b/m and Temperature is 97 ° F an MRI of brain was done diffuse cerebral and cerebellar atrophy with chronic white matter changes .

His CD4 count is 20 Cells / mm Cube , CSF shows budding of yeast cryptococcal meningitis and HD is stable .

On third day of admission the treatment was given ,Tab. Atorva 40 mg (OD) (Hyperlipidemic) , Tab. Ecospirin 150 mg (OD) (Anticoagulant) , Injection loposomal amphotericin (IV) 200 mg (OD) (Antiviral) and Injection Epilive 5 ml/500mg (IV) (BD) (Anticonvulsant) . His Blood pressure is 120/80 mm Hg, pulse rate is 80 beats/min, Temperature is 97 ° F and Respiratory rate is 22/min. and third days treatment was continue for 10 days.

DISCUSSION :

Cryptococcal meningitis is an infection caused by yeast like fungus cryptococcus . The genus cryptococcus contains at least 39 species of yeast .most human infection due to cryptococcal neoformans .where as the infection with fungus cryptococcus is known as cryptococcosis. Which shows symptoms like severe headache , neck stiffness , fever , confusion and coma .

TEST	NORMAL VALUE	LABE VALUE
HB	12-15 mg/l	9.9
RBC	4-5 mm/cmm	3.56
PCV	40-50%	29.6
MCV	75-95 fl	83.1
MCH	25-35 pg	27.8
MCHC	30-35g/dl	33.4
RDW	11.6-14.8%	17.9
TLC	4000-1000/cmm	2350
ANC	2000-7500/cmm	1780
ALC	1500-4000/cmm	450
AEC	40-400/cmm	30
AMC	200-800/cmm	90
ABC	0.1-100/cmm	0
Platelets	1,50,000-4,50,00/cmm	1,62,000

Other symptoms may be respiratory secondary to pulmonary disease or dermatological lesion resembling molluscum in skin disease.

mostly MRI , CT scan and other diagnosis performed like blood culture and CSF to detect the bacterial species at 37 ° C and also India ink test to diagnosed meningitis .where as lab report shows increase in RDW level and except platelet count ,MCV ,MCH and MCHC all are decreased Where Amphotericin B and Flucytosine is used in combination and also liposomal amphotericin is used in this condition .

CONCLUSION :

Cryptococcal meningitis is a fungal meningitis which has high morbidity and mortality. The diagnosis for cryptococcal meningitis is identifying cryptococcus in cerebrospinal fluid (CSF) , this is available in India ink as the sole means to diagnosis of meningitis . The India ink is intensive for low fungal burden . Other diagnosis is (LFA) lateral flow assay which rapidly detect cryptococcal polysaccharide capsule using gold –conjugated anti-cryptococcal monoclonal antibodies directed against cryptococcal neoformans.

In addition MRI ,CT scan , culture test in which cryptococcal neoformans from CSF on blood / sabouraud's agar at 35° C is confirmed through the demonstration od capsule growth on corn meal agar , further diagnosis like serotyping in which immuno-typing kits were used to diagnosed cryptococcal serotype . Where as accurate identification and better management help in this patient .

REFERENCE :

BOOKS :

1 Joseph dipero , pharmacotherapeutic a pathophysiologic approach , 4th edition , MC grew hills publication , pg . No. 1185-1188.
2 Jameson and Hauser ,"Harrison's principle of internal medicine", 10th edition , MC grew hills publication , pg. .no .1183-1185.
3 Roger walker and cate Whittlesea, "clinical pharmacy and Therapeutis",5th edition , pg. .no. 591 .
4 Cate Whittlesea , Karan Godson , Clinical pharmacy And Therapeutic , 6th edition , 2019 , page no . 709 .

ARTICALS :

1. Marian poley , MS, Richard koubek , MD, and Brian MC Gillen, MD , "cryptococcal meningitis in an Apparent Immuno competent patient", Journal of Investigative Medicine High impact case Reports , 2019, Apr.4.
2. Peter R Williamson, Joseph N Jarvis, Anil A Panackal, Matthew C Fisher, Sile F Molloy, Angela Loyse, Thomas S Harrison , "cryptococcal meningitis; epidemiology, Immunology, diagnosis and therapy", pub med Jan 13 (1):13-24.
3. Jason D Goldman, Michael E Vollmer, Andrew M Luks, "cryptococcosis in the immnuo competent patient", pub med 2010, nov;55(11) :1499-503.
4. Mahsa Abassi ; David R Boulware, and Joshua Rhein, "cryptococcal meningitis; Diagnosis and management update", current tropical medicine reports , PMC, 2016, Jun 1; 2(2):90-99.
5. P Satishchandra, T . Matthew, G . Gardre, S . Nagarathna, A . Chandramukhi, A . Mahadevan, SK . Shankar, "cryptococcal meningitis; clinical , diagnostic and therapeutic overviews" ;2007, volume 55; Issue 3, pg . No. 226-232.