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Case Report

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A CASE REPORT ON NEUROBRUCELLOSIS AND MENINGOENCEPHALITIS

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ABSTRACT

Brucellosis is a highly contagious zoonotic infection caused by infected animals or close contact with their secretions or by ingestion of unpasteurized milk or uncooked meat. This disease is caused by a gram-negative bacteria called Brucella which can spread disease from animals to human. Meningoencephalitis is an infection or inflammation of the meninges and brain. A patient with a past history of neurobrucellosis and meningoencephalitis came to the hospital with the chief complaints of fever, altered sensorium, joint pains, vomiting for 5 days. By the neurological investigations, it was evaluated that the patient had neurobrucellosis with meningoencephalitis. Treatment was given based on the patient condition. Medication errors were seen in the case and interventions was done to provide a rational and safe therapy.

KEYWORDS: Brucellosis, meningoencephalitis, patient counseling, medication errors, intervention.

INTRODUCTION

Brucellosis is a contagious infectious disease[1] caused by several different strains of Brucella bacteria. This bacteria is transmitted from animals to humans by ingestion through direct contact with an infected animal, infected food products, through cuts or inhalation of aerosols. The disease has been known by various names including Mediterranean fever, Malta fever, gastric remittent fever undulant fever.[2] The causal relationship between the organism and disease came to know for the first time in 1887 by David Bruce.[3] Brucellosis is a zoonotic infection whereas Neurobrucellosis is an uncommon complication of this infection that may develop at any stage of the disease. Symptoms include profuse sweating, joint and muscle pain, back pain, poor appetite and abdominal pain. It has the highest prevalence in Mediterranean countries and is increasingly recognized in India, Pakistan and other countries.

Around five lakh new cases are reported annually worldwide but brucellosis is clearly underreported.[4] Meningoencephalitis is a medical condition which causes both meningitis (inflammation or infection of meninges) and encephalitis (inflammation or infection of the brain). The inflammation may be caused by viruses, bacteria, protozoa or other microorganisms.[5] The most common symptoms seen in meningoencephalitis are fever, headache, neck stiffness, confusion, altered consciousness, vomiting and inability to tolerate loud noises, hallucinations and seizures.[6] Brucellosis and meningoencephalitis both continues to be a major hurdle to the health, worldwide. So precautions and early diagnosis, treatment must be taken.

CASE REPORT

A 46 years gentlemen came to the hospital (RIMS, Kadapa) with a history of fever, vomiting, joint pains, altered sensorium for 5 days. At the time of admission, the patient was conscious and coherent. On physical examination the temperature was 98.6^0F, B.P was 100/70mHg, CVS-S1, S2+, Pulse rate-100bpm, P/A-soft. His past medical history revealed that he was not a known hypertensive or diabetic. But, he had diagnosed as having Brucellosis. Past medication history revealed that he had "Neurobrucellosis with meningoencephalitis" 1 week ago. As the patient was negligible on medication the same symptoms aroused. Hence, the patient was admitted to the General medicine department, MM-I ward and the following symptomatic treatment was started.

IVF-1 pint normal saline, 1 pint RL, Injection Ceftriaxone 1gm/IV/BD, Inj. Streptomycin, IM/OD, Inj. Pantop 40mg/OD, T. Doxycycline 100mg/BD, T. Rifampicin 600mg/OD, Injection Tramadol 100mg/BD

was prescribed. Medication errors were identified and reported to the prescriber. In the prescription Inj. Streptomycin, IM/OD was written without the dose and the correct dose is 750mg, Inj. Pantop 40mg/OD was written instead of Tablet Pantop 40mg/PO/OD and T. Doxycycline 100mg/BD was written instead of Capsule. Doxycycline 100mg/PO/BD, The dose of Rifampicin written in the prescription was T. Rifampicin 600mg/OD but the actual dose is 450 mg. The route of administration for Injection Tramadol 100mg/BD was not written. It is intended to be given IM and the medication error (Tablet Rifampicin) is changed to Cap. Rifampicin 450mg/PO/OD.

On day - 2, vitals were monitored. BP was 120/80mmHg, PR: 78bpm, CVS: S_1S_2 +, P/A: Soft. The patient was conscious, coherent and the doctor advises to continue the same treatment. On day - 3, the patient was conscious, PR: 82bpm, BP:110/80mmHg, CVS: S_1S_2 +, P/A: Soft and the following treatment was given.

IVF-1 pint normal saline, Inj. Ceftriaxone 1gm/IV/BD, Inj. Streptomycin 750mg/IM/OD, T. Pantop 40mg/OD, Cap. Doxycycline 100mg/PO/BD, Cap. Rifampicin 600mg/OD, Injection Tramadol 100mg/BD was prescribed.

On day - 4, the patient was conscious, coherent, moderately built and he was progressively recovering. The Pulse rate was 88bpm, BP: 120/80 mmHg, CVS: S_1S_2 +, P/A : Soft. So, the following treatment was given. Injection Ceftriaxone 1gm/IV/BD, Inj. Streptomycin, 750mg/IM/OD, T. Pantop 40mg/PO/OD, Cap. Doxycycline 100mg/PO/BD, Cap. Rifampicin 450mg/PO/OD was prescribed. IVF- 1 pint RL was stopped and Tablet Pyridoxine 10mg/PO/OD was added to the above treatment.

On day- 5 the vitals were normal, PR: 80bpm regular normal volume, BP:130/80mmHg, CVS: S_1S_2 +, P/ A: Soft, CNS-Conscious, oriented, RS: B/L NVBS+, HMF-Normal, Speech- Normal. The patient was recovering. So, he gets discharged with the following medications.

1. Injection Ceftriaxone 1gm/IV/BD for 6 weeks.
2. Inj. Streptomycin, 750mg/IM/OD for 6 weeks.
3. Cap. Doxycycline 100mg/PO/BD for 6 months.
4. Cap. Rifampicin 450mg/PO/OD for 6 months.

The patient was advised to come for follow up after 6 weeks.

DISCUSSION

Neurobrucellosis occurs in 5–10% of cases of brucellosis and mostly affects the central (CNS) or peripheral nervous system (PNS).[7] The manifestations are diffuse encephalopathy/meningoencephalitis, inflammatory peripheral neuritis/radiculitis, inflammatory demyelinating syndromes, papilledema or papillitis without other focal features, meningomyelitis, posterior fossa syndromes, and neuropsychiatric syndromes.[8,10]

A 46 years old patient got admitted to the Rajiv Gandhi Medical Science (RIMS, Kadapa) with the chief complaints of fever, altered sensorium, vomiting for 5 days. At the time of admission, he was conscious and coherent. The temperature was 98.6^0F and vitals were normal. His past medical history revealed that he was not a known hypertensive or diabetic. But, he had Brucellosis in the past. He was diagnosed in Nimhas hospital. Complete blood test, LFT, RFT, RBS, CT scan brain has been advised by the prescriber and the diagnostic reports showed Albumin: 3.28gm/dl (3.5-5.5g/dl), Globulin: 2.6 g/dl (2-3.5g/dl), Total Protein : 5.92 (6-8.3g/dl), Alkaline Phosphate: 73 IU/l (44-147 IU/l), SGOT: 18.1 Units/liter (5-40 U/l), SGPT: 16.1 (7-56 U/l), Total Bilirubin : 0.56mg/dl (Up to 1mg/dl), Sodium : 137.3 m.eq/l (135-155), Potassium: 3.45meq/l (3.5-5.5), Chlorides: 107.3m.eq/l (95-106). CT scan of the brain was suggestive of diffuse meningeal enhancement. CSF culture was positive for "Brucella". By the blood test and Neurological examination, it was confirmed that the patient was having "Neurobrucellosis with meningoencephalitis". He underwent the treatment of Brucellosis. They had given a prophylactic regimen and discharged the patient with the following medications.

1. Injection Ceftriaxone 1gm/IV/BD for 6 weeks.
2. Inj. Streptomycin, 750mg/IM/OD for 6 weeks.
3. Cap. Doxycycline 100mg/PO/BD for 6 months.
4. Cap. Rifampicin 450mg/PO/OD for 6 months.

The patient was advised to come for follow up after 6 weeks.

As the patient was negligible on medication, he got a fever, vomiting, joint pains, altered sensorium after a week. Later he was admitted to RIMS Kadapa.

Based on the past medication history the symptomatic treatment was started at RIMS. During ward rounds medication errors were identified in the prescription, promptly interventions were done to rectify the errors. The medication errors were reported to the prescriber, rectified and necessary changes were done. Consequently, a rational therapy was provided to the patient. The patient gets recovered and discharged with the rational treatment.

CONCLUSION

In this study, we made an attempt to bring awareness of medication errors, drug-related problems among the health care professionals, nurses and the patients. Medication errors seen during ward rounds were reported, rectified and documented. Interventions were done to provide a rational therapy. Patient counseling was given on the lifestyle modification, regarding disease and medication. The patient was advised to do

not stop the medication without consulting the doctor and if he experiences any adverse drug reactions contact the doctor immediately.

There is a need to create awareness levels of medication errors among the health care professionals as they directly affect the patient's health. There is a need for a clinical pharmacist in every hospital or healthcare system to minimize the prescription errors and provide safe and rational therapy.

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