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Case Report: Post Kala-Azar Dermal Leishmaniasis with History of Visceral Leishmaniasis

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ABSTRACT

The complication of visceral leishmaniasis is post-kala-azar dermal leishmaniasis (PKDL). PKDL typically occurs as a result of treatment failure or parasite resistance to treatment regimens, as well as poor patient follow-up. In the treatment of visceral leishmaniasis and post-kala-azar dermal leishmaniasis, Liposomal Amphotericin B is considering as first-line therapy. We're going to show you a case where Liposomal Amphotericin B was used to treat it.

Keywords: visceral leishmaniasis, post-kala-azar dermal leishmaniasis, PKDL, kala-azar

INTRODUCTION

Post-Kala azar Dermal Leishmaniasis (PKDL) is a visceral Leishmaniasis complication that appears as a macular, papular, or nodular rash on the forehead, upper arms, trunks, and other body parts and spread to other parts of the body depending on severity. Generally, PKDL can observe in India and Sudan with the causative organism *Leishmania donovani* parasite, which follows 50% of VL and 5-10% of PKDL cases. The interval of PKDL follows VL 2-3 years in India and 0-6 months in Sudan. Leishmania parasite transmits through the bite of the infected female phlebotomine sandfly, it Injects the infective stage (promastigotes) into the host body, considered as anthroponotic with humans as the only known infection reservoir. [1] PKDL characterized by the spread of skin lesions, hypopigmentation of macule, papules, nodules, over the trunk, and face could be is easily confused with different diseases such as vitiligo and leprosy. [2] Only 21 known species are the cause of a disease out of 54 species known in many countries, and 350 million are at risk of this infection. [3]

CASE

A 25 years female suffering from maculopapular, nodular lesions on the face and upper limbs for one month. She first noticed lesions on the chin, which spread to parts of the face and upper limbs. After a lesion appears on the face patient went to a local health care provider, he had referred to a tertiary hospital. She stated a history of visceral leishmaniasis, No family history of leishmaniasis, and other diseases. The patient had no history of smoking and alcohol consumption. After the physical examination, no abnormalities were found other than skin lesions, and lesions were non-itching.

Patient history	she had a history of VL treated with sodium stibogluconate.
Family history	No family history of leishmaniasis and other diseases
Social history	The patient does not have any social history of smoking and alcohol consumption
Physical Examinations	On the physical examination, no abnormalities were found other than skin lesions, lesions were no itching.
Clinical Examinations	rK 39 Skin biopsy Complete Blood Count HBsAg HCV Antibodies HIV(rapid test)

The patient was positive for the rk39 test; Skin samples were collected and send to the laboratory for biopsy. The patient was positive for Leishmania donovani in the biopsy, patients recommended for CBC, HBsAg, HCV antibodies, HIV test, the patients found to be negative for HBsAg, HCV antibodies test, HIV test.

HEMATOLOGICAL & BIOCHEMICAL INVESTIGATIONS:

Hematological reports revealed a total Red Blood Cell (RBC) of 4.24 Million cells/mcL, total White Blood Cells (WBC) of 2700 cells/microL with Neutrophils 66%, Lymphocytes 22%, Monocytes 7%, and Eosinophils 5%, Basophiles 0%, Platelet 3,43,000 cells/ microlitre Biochemical reports revealed total protein 6.80g/dl, Albumin 3.62g/dl, Globulin 3.18g/dl, Serum 1mg/dl, Blood urea 20.6mg/dl, Serum creatinine 0.6 mg/dl, SGOT/ASAT 38.9 U/L, SGPT/ALAT 32.0 U/L, Alkaline Phosphate 132/7 U/L. HBsAg 0.050, HCV antibodies 0.036

Hematology report

Test	Results	Reference range
Total protein	6.80	6-8.3g/dl
Albumin	3.62	3.2-5.5g/dl
Globulin	3.18	2.8-3.0g/dl
Serum bilirubin	1.00	Up to 1.10mg/dl
Blood urea	20.6	15-45mg/dl
Serum creatinine	0.6	0.6-1.1mg/dl
SGOT	38.9	Up to 34 u/l
SGPT	32.0	Up to 35 u/l
Alkaline phosphatase	132.7	98-279u/l
HBsAg	0.050	
HCV Antibody	0.036	

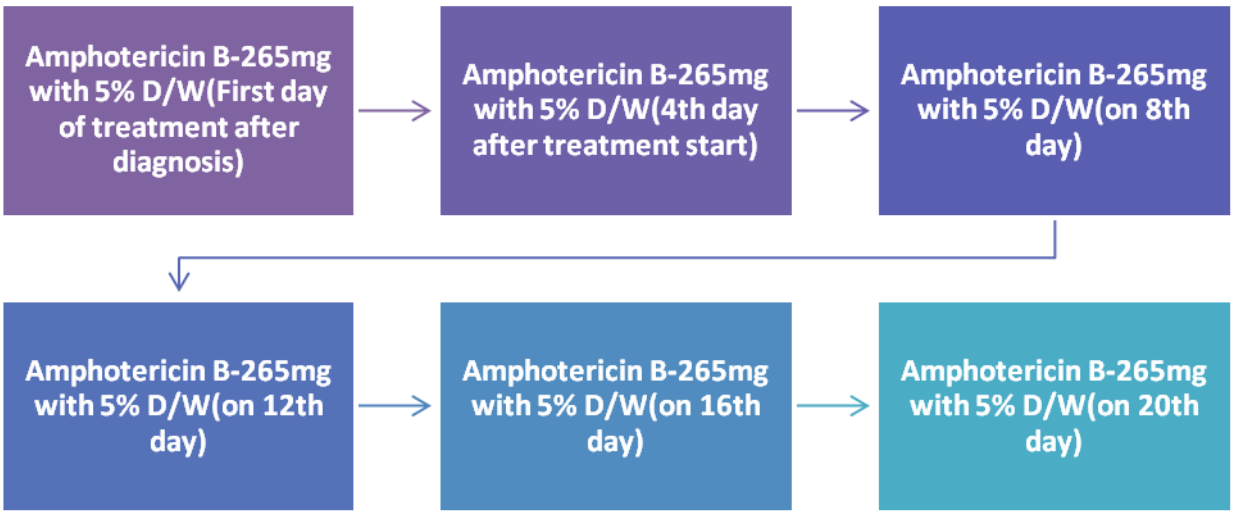
Biochemical Report

Test	Result	Reference range
Total RBC	4.24	4.2-5.4 million cells/mcL
Total WBC	2700	4500-11000 cells/ micro L
Neutrophils	66	40-80%
Lymphocytes	22	20-40%
Monocytes	07	2-10%
Eosinophils	05	1-6%
Basophils	00	0-1%
Platelets	3.43	150000-450000 cells/ MCL
Hemoglobin	13.7	12-15.5 gm/dl

TREATMENT PLAN:

ROA	DRUGS	DOSE	FREQUENCY	DATE OF START	DATE OF END
IV	Ambisome(liposomal Amphotericin B)	265mg-6 doses	Single-dose with 4 days of interval (265mg)	30/01/2020	19/02/2020
Oral	Ferimon(ferric ammonium citrate, folic acid, and cyanocobalamin)	5ml	BID	30/01/2020	19/02/2020
Oral	Becogen L	5ml	BID	30/01/2020	19/02/2020
Oral	Paracetamol	500mg	SOS	30/01/2020	19/02/2020
Oral	B-complex(Vit-B1, B2, B3, B5, B6,B12)	5ml	BID	30/01/2020	19/02/2020
Oral	Albendazole	400mg	HS	03/02/2020	05/02/2020

AMBISOME (Liposomal Amphotericin B) Administration Chart: Amphotericin B-265mg with 5% D/W in 6 doses



DRUG INTERACTIONS IN PRESCRIPTION:

- There are no severe drug interactions in this prescription
- ferimon syrup may interact with acetaminophen/paracetamol physician is giving paracetamol when it is required there is no drug interaction between these two regimens
- There is no drug interaction between albendazole and other drugs in this prescription.
- Vitamin b complex generally interacts with an antibiotic (chloramphenicol), anti-cancer drug (cisplatin), and seizures drug (phenytoin), no such type of drugs here.
- No drug interaction between paracetamol and other drugs in prescription.
- Amphotericin does not show any drug interaction with these prescription drugs.

CONTRA-INDICATIONS:

- There are no such severe contraindications in these prescription drugs.
- Vitamin b complex is not suitable for patients with anemia (pernicious anemia). Leishmania patients who have normal anemia are no contraindication of vitamin b complex.
- Paracetamol and ferimon syrup show hypersensitivity reactions in some patients.

SIDE EFFECTS:

- Nausea, vomiting, stomach upset, diarrhea are common side effects with ambisome, ferimon, b complex

PHARMACIST INTERVENTIONS:

- Ferimon have interaction with alcohol give proper counseling regarding the medication usage and its interactions
- Counseling patients regarding medication usage and common side effects associated with medication and complications of PKDL
- Some of the side effects associated with the prescription drugs are Nausea, vomiting, stomach upset, diarrhea are common side effects with ambisome, ferimon, b complex, create awareness to the patients on common side effects
- Always be familiar, give confidence to patients suggest them some lifestyle changes during medications and after completion of therapy to avoid PKDL complications

DISCUSSION

Patients with visceral leishmaniasis who had previously cure with sodium stibogluconate (SSB) developed resistance. Maybe this the cause of post-kala-azar dermal leishmaniasis. Some post-kala-azar dermal leishmaniasis patients had no prior history of visceral leishmaniasis. Patients with Post Kala-azar Dermal Leishmaniasis (PKDL) should be treated with (i) Liposomal amphotericin B: 5mg/kg per day by infusion two days per week for three weeks for a total dose of 30mg/kg, or (ii) Liposomal amphotericin B: 5mg/kg per day by infusion two times per week for three weeks for a total dose of 30mg/kg, or (ii) Meltifosine: 100 mg orally per day for 12 weeks; (iii) Amphotericin B deoxycholate: 1 mg/kg for four months in 60-80 doses. [7] There infusion-related side effects managed with paracetamol, pantoprazole, or domperidone on an SOS basis. Throughout the therapy, temperature, pulse, respiration rate, blood pressure tracked regularly, the health-seeking activity observed. It may be contributing factor for disease spread [8].

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