WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 12, Issue 6, 860-864 Case Study SSN 2277– 7105

CASE REPORT ON GUILLAIN BARRE SYNDROME FOLLOWING WEIL'S DISEASE

Shiby Sara Shaji[1], Shone Padinjarethil George[1]*, Dr. Greeshma H.G.[2], Dr. Gowri Rathish[2], Dr. Mohan Varghese[3] and Dr. Thomas Jacob[4]

[1]Pharm D Intern, Nazareth College of Pharmacy, Othera, Thiruvalla, Kerala.

[2]MBBS Intern, Believers Church Medical College Hospital, Thiruvalla, Kerala.

[3]Consultant Physician and Associate Professor, Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla, Kerala.

[4]Assistant Professor, Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla, Kerala.

Article Received on
03 March 2023,

Revised on 24 March 2023,
Accepted on 14 April 2023

DOI: 10.20959/wjpr20236-27842

***Corresponding Author**
Shone Padinjarethil George
Pharm D Intern, Nazareth College of Pharmacy, Othera, Thiruvalla, Kerala.

ABSTRACT

Leptospirosis is a reemerging zoonotic infection caused by leptospira species. Less than 10% cases of leptospirosis develop into a severe form called Weil's Disease. Guillain Barre Syndrome is an inflammatory polyneuropathy and the occurrence of Guillain Barre Syndrome following Weil's Disease is found to be a rare neurological complication. Immune mediated mechanism is thought to be involved in the mechanism and was treated with Plasma exchange, Intravenous Immunoglobulin and other supportive measures.

KEYWORDS: Weil's Disease, Guillain Barre Syndrome, Polyneuropathy, Intravenous Immunoglobulin.

INTRODUCTION

Guillain Barre Syndrome (GBS) is an acute inflammatory polyneuropathy and Weil's disease represents the severe clinical form of Leptospirosis. Its incidence rate is 0.8 to 1.9% per 1,00,000 persons worldwide. The development of GBS following Weil's Disease is rare. This case report emphasises on the rare occurrence of Guillain Barre Syndrome in Weil's Disease.

CASE REPORT

A 27 year old male patient, was admitted with c/o of abdominal pain (right hypochondrial pain), yellowish discoloration of eyes, conjunctival congestion, high coloured urine and clay

coloured stool. Patient had a history of Epilepsy for which he was on Tablet. Levetiracetam 500 mg twice daily. He had complaints of generalised body ache, fever with chills, cough and breathing difficulty for 5 days for which he consulted a nearby hospital and was diagnosed with urinary tract infection and lower respiratory tract infection. He was treated with antibiotics (Injection Ceftriaxone) and was discharged. Later his symptoms reappeared and he again visited the same hospital where laboratory investigations were done and he was found to have a deranged Liver Function Test. USG (Ultra Sonography) was taken and reported hepatomegaly. He was referred to our hospital for further treatment. Electrocardiography showed sinus tachycardia. Routine investigations showed elevated C- Reactive Protein, deranged Liver Function Test, elevated lipase level, elevated pro - B type Natriuretic Peptide. On evaluation, Leptospira Ab ELISA was positive (43.48) and the patient was diagnosed with Leptospirosis - Weil's Disease, Pulmonary haemorrhage and Pancreatitis. Patient was initiated on Tablet Doxycycline. CECT (Contrast Enhanced Computed Tomography) abdomen was taken and showed fatty hepatomegaly; splenomegaly; small umbilical hernia. He was initiated on empirical antibiotics (Injection. Meropenem 1g dose thrice daily, Capsule Doxycycline 100 mg twice daily). Later, he developed breathing difficulty and he was clinically suspected to have Acute Respiratory Distress Syndrome with a possibility of Myocarditis With Congestive Cardiac Failure. He was shifted to the Medical Intensive Care Unit in view of desaturation and hypotension where he was initiated on Non Invasive Ventilation and inotropes. With the above management the patient gradually improved. He was weaned off non-invasive ventilation and oxygen support and his laboratory parameters also gradually improved. Patient was discharged after two weeks of hospital stay. On the next day, the patient was readmitted with complaints of acute onset paresthesia of upper limb and lower limb with proximal weakness of the upper limb more than lower limbs with hyporeflexia of upper limbs. He also had severe pain in the lower back. Lumbar Puncture showed gram stain with occasional 30-35/hpf RBC. Later he developed worsening of weakness in lower limbs and his nerve conduction study was shown Acute Inflammatory Demyelinating Polyneuropathy and hence initiated on Intravenous Immunoglobulin (IVIG) 30g for 5 days. As the patient's neurological status improved, hence being discharged with review in Out Patient Department.

DISCUSSION

Leptospirosis is a zoonotic infection caused by Leptospira species.[1] The organism persists in the convoluted tubules of kidney and later shed into the urine in massive numbers. The host

remains asymptomatic and the former in most cases is rodent. In majority of the cases, either through invasion across the mucosal surface or through non intact skin, transmission to humans occurs. The clinical presentation may vary from asymptomatic infection to severe fatal infection. Less than 10% of cases develop into severe icteric illness called Weil's disease which is characterised by jaundice, haemorrhage and renal impairment.[2,3]

The development of Guillain Barre Syndrome (GBS) in Weil's Syndrome is rare. GBS is an acute inflammatory polyneuropathy and the incidence rate accounts to 0.8 to 1.9 per 1,00,000 persons per year worldwide.[4] It is well known to be associated with Campylobacter infection. Apart from that viral, bacterial, protozoal and other non infectious causes may contribute to the development of GBS.[5] It is characterised by rapidly progressive symmetric flaccid paralysis and diminished or absent reflexes of deep tendon. It is a potentially life threatening condition where 20 to 30% patients may require ventilatory support.[3]

After the incubation period, leptospiral infection is characterised by leptospiremic phase and immune phase.[6] Immune mediated mechanisms are thought to be involved in the development of Weil's Syndrome and GBS. Antibodies rising to an inflammatory response leads to axonal inflammation and demyelination. Nerve ischaemia caused by immunological mediators may also be involved in the pathogenesis of GBS caused by Weil's Disease.[1,2]

A high degree of suspicion is required for diagnosing the condition early and to initiate appropriate therapy.[7] Clinical and neurological examination, imaging studies, Cerebrospinal fluid (CSF) analysis, nerve conduction studies etc… are involved in the diagnosis of GBS and is managed with Intravenous Immunoglobulin (IVIG), Plasma exchange and other supportive measures.[8]

CONCLUSION

The occurrence of Guillain Barre Syndrome (GBS) in Weil's Disease is rare. Immune mediated mechanism is thought to be involved in the development of GBS in Weil's Disease. Due to rare occurrences, mechanisms and management need to be evaluated. A high degree of suspicion is required for clinicians treating Weil's Disease to diagnose the condition early and to initiate appropriate therapy.

ACKNOWLEDGEMENT

The authors are sincerely thankful to the Department of General Medicine, Believers Church Medical College Hospital and Department of Pharmacy Practice, Nazareth College of Pharmacy for their extreme support and guidance.

ABBREVIATIONS

hpf - High power field

USG - Ultra Sonography

CECT - Contrast Enhnaced Computed Tomography

IVIG - Intravenous Immunoglobulin

MRI - Magnetic Resonance Imaging

GBS - Guillain Barre Syndrome

ELISA - Enzyme Linked Immunosorbent Assay

CSF - Cerebrospinal fluid

CONFLICT OF INTEREST

The authors declared that there is no conflict of interest.

REFERENCES

1. Gokalp C, Yildiz C, Tunc B, Kurultak I, Ustundag S. Guillain–Barre syndrome variant as a rare complication of leptospirosis. Journal of Travel Medicine, 2021; 28(1): taaa143.
2. Walker BR, Colledge NR, Ralston SH, Penman DI.(2014). Davidson's principles and practice of medicine. Edinburgh: Churchill Livingstone/Elsevier;
3. Patil VC, Patil HV, Sakaria A, Tryambake S. An unusual case of Weil's syndrome with paraparesis. Indian Journal of Critical Care Medicine: Peer-reviewed, Official Publication of Indian Society of Critical Care Medicine, 2011; 15(2): 130.
4. Dev N, Kumar R, Kumar D. Guillain–Barre syndrome: a rare complication of leptospirosis and scrub typhus co-infection. Tropical Doctor, 2019; 49(3): 248-9.
5. Kobawaka Gamage KK, Fernando H. Leptospirosis complicated with Guillain Barre syndrome, papillitis and thrombotic thrombocytopenic Purpura; a case report. BMC Infectious Diseases, 2018; 18: 1-4.
6. Panicker JN, Mammachan R, Jayakumar RV. Primary neuroleptospirosis. Postgraduate medical journal, 2001; 77(911): 589-90.
7. Krishna PV, Ahmed S, Kumar CV. A case of leptospirosis with rare atypical presentation as paraparesis. Journal of Clinical and Scientific Research, 2015; 4(2): 173-6.

8. Deihim T, Reyhan SK, Abbaszadeh M, Rad NK. Guillen-Barret Syndrome in a Patient with Leptospirosis. Clin Med Case Rep., 2018; 3(119): 2.