

Case Report

A study on Nutritional Management of a patient with HELLP syndrome

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Abstract

HELLP syndrome is a rare but severe pregnancy complication characterised by hemolysis, elevated liver enzymes, and low platelet count. It typically arises in the third trimester or immediately postpartum and requires urgent medical attention, often necessitating early delivery to prevent maternal and fetal morbidity.

The present case was of a 25-year-old female who was admitted with complaints of SOB, upper abdomen pain with elevated liver enzymes, hemolysis and thrombocytopenia. She was diagnosed with HELLP syndrome. Besides medical management, the present study deals with her nutritional management. It was found that as soon as the patient was hemodynamically stable, she was given enteral feedings initiated at low levels in the initial phase and improved in a graduated manner. As soon as the nutritional needs were fulfilled, the patient was able to eat orally within 2- 3 days and finally discharged on a high protein diet.

Keywords: Nutrition, Diet, HELLP syndrome, Pregnancy, AKI.

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Introduction

HELLP syndrome is a group of disorders characterised by three common symptoms, including hemolysis, elevated liver enzymes and low platelet levels, that is often followed by severe pre-eclampsia. Its incidence rate ranges from 0.5 – 0.9% in pregnancies. Hypertension and proteinuria are common symptoms. Nausea, vomiting and pain in the upper right quadrant are some other symptoms. If not treated timely, it may prove fatal and may further lead to serious consequences such as intra-uterine death, hepatic hematoma, disseminated intravascular coagulation, respiratory distress syndrome, kidney failure and ultimately death. Corticosteroids are usually given as a medical treatment and symptoms disappear gradually within 2-3 days in the postpartum phase if treated well [1-3].

Biochemical Investigations

Parameter	Value	Interpretation
Haemoglobin (g/dL)	10.7	Anemia
Albumin (g%)	3.3	Hypoalbuminemia
Ferritin (ng/ml)	2620	
Procalcitonin (ng/ml)	142	High risk
SGOT/ AST	2294.6U/L	High
SGPT/ ALT	1246 U/L	High
Serum Alkaline Phosphatase	124.8 U/L	High
Bilirubin (Total) mg/dL	11.7 mg/dL	High
Bilirubin (Indirect) mg/dL	2.4 mg/dL	High
Bilirubin (Direct) mg/dL	9.3 mg/dL	High
Serum Total Protein g/dL	5.5	Low
Serum Albumin	2.9	Low
Serum Globulin	2.6	Low
A/G Ratio	1.1	Low
BUN (mg/dL)	78.8	High
Serum Creatinine (mg/dL)	1.5	High

Table 1. Biochemical Investigations of the patient at the time of admission

Present Clinical Complaints: Patient was suffering with shortness of breath, hypertension, early labour pains, eclampsia, preterm delivery
Past Medical History: Patient had history of hematuria
Final medical diagnosis: The patient was diagnosed to have HELLP syndrome due to high

Case Profile

A 25-year-old Hindu female was admitted to Mahatma Gandhi Medical College and Hospital on 9th January 2022, Jaipur. She was a housewife from a middle-income family. The number of members in her family was seven.

Nutritional Assessment

The Subjective Global Assessment tool was used to assess her nutritional status. Patient's anthropometric measurements were found as shown below –

Height (150 cm)

Pre conception weight (55 kg)

The present weight at full term pregnancy was 65 kg, which should have been ideally 57 kg. So, the patient was found as obese.

BMR was 1415 Kcal (ICMR 1989)

Physical activity level (1.4) (ICMR 2020)

blood pressure, hemolysis, elevated liver enzymes, low levels of platelets, abnormal blood aspartates, lactate dehydrogenase, higher levels of liver function test, C reactive protein, alongwith proteinurea.

Medical management of the patient included following treatment plan –

Medication	Dosage	Mechanism of action
TAB AMLODIPINE	5 mg	Antibacterial
SYP SORBILINE	2 tsp	Laxative
Inj VIT K	1 ampule	
TAB SPOROLAC PLUS		Probiotic
Inj LINID	600 ml	Antibiotic
TAB RIFAGUT	550 mg	Antibiotic
TAB REHEPTIN	1 mg	Antioxidant
Inj CLINDAMYCIN	600 mg	Antibiotic
Syp LOOZ	30 ml	Laxative
Inj. TRAMADOL	100 ml	Antibacterial
Pow PENTASURE 2.0	6 scp/ day	Nutraceutical
Glucon D Powder	2 tsp	Energy supplement

Table 2. Medical management of the patient

Home diet recall for 24 hours showed nutritional intake as below:

- Energy: 1127 kcal
- Proteins: 37.2 g
- Carbohydrates: 169 g (60%)
- Fat: 21.3 g (25%)
- Empty calorie intake: 447.9 kcal

Nutritional Diagnosis: The patient was found to be at increased risk of malnutrition due to faulty dietary habits, elevated blood pressure, and hematuria, as evidenced by a lower calorie & nutrients intake in the home diet recall.

Nutrition Intervention

Medical Nutrition Therapy – High protein, iron-rich, low-sodium diet

Goals of medical nutrition therapy

1. Short-term goals –
 - 1.1. To maintain elevated blood pressure

- 1.2. To maintain low platelet level and stop hematuria

2. Long-term goals –

- 2.1. To maintain liver enzymes,
- 2.2. To maintain a healthy weight and
- 2.3. To aid in proper milk secretion for exclusive breastfeeding [4]

Calculated nutrient requirements were as follows

- Energy: $(IBW \times 30 + 600) = 45 \times 30 + 600 = 1950$ Kcal)
- Proteins: $(IBW + 20) = 45 + 20 = 65$ g)
- Carbohydrates: 292 g (60%)
- Fats: (25%) 54 g
- Sodium: 1200 mg
- Potassium: 3500 mg
- Fluid requirements: $1995 \text{ ml} = 57 \times 35 \text{ ml/kg ABW/day}$
- NNC Cal: N² ratio: 1950: 10.4 (187.5)
- Consistency and frequency of meals: soft diet - 3 major & 3 minor meals

Exchange list of prescribed medical nutrition therapy

Food Group	Quantity/ exchange	Exchange	Energy (Kcal)	Protein (g)	Carbs (g)	Fat (g)	Na (mg)	K (mg)
Cereals	30 g	6	576.48	19.02	115.2	2.4	3.66	559.8
Pulses	30 g	2.5	244.25	17.9	39.25	1	7.5	951
Vegetables	100 g	5.5	127.15	4.4	22	0.55	48.4	1391.5
Milk	100 ml	5.5	308	17.6	25.3	16.5	242	0
Fat	5 ml	2.2	99	0	0	11	0	0
Sugar	5 g	2	40	0	10	0	0	0
Total			1395	59	212	31	301	2902
Percentage			71	90	72	57	25	83

Table 3. Exchange list of prescribed medical nutrition therapy

Distribution of exchanges in whole day's menu

Food Groups	Total Exchanges	Early morning	Breakfast	Midmeal	Lunch	Evening Tea	Dinner
Cereals	6	½	2		1	1/2	2
Pulses	2.5				1.5		1
Vegetables	5.5			1.5	2		2
Milk	5.5	½	2		1	2	
Fat	2.2				1.1		1.1
Sugar	2		1			1	

Table 4. Distribution of exchanges in whole day's menu

Detailed Prescribed Hospital Menu

Timing	Meal	Menu	Household Measures
6 am	Early Morning	Tea Biscuit	100 ml 2
8 am	Breakfast	Milk Bread	200 ml 200 g
11 am	Midmorning	Tomato soup	200 ml
1 pm	Lunch	Khichdi Dal Curd	200 g 100 g 100 g
3 pm	Evening	Milk Biscuit	200 ml 2
7 pm	Dinner	Dalia Dal	200 g 100 g

Table 5. Prescribed hospital menu

3-Day Nutrient Intake Recall During Hospitalisation

	Energy (Kcal)	Protein (g)	Carbs (g)	Fat (g)	Na (mg)	K (mg)
Day 1	1817	69	242	53	1707	2227
Day 2	1618	66	214	47	1606	1898
Day 3	1618	66	214	47	1606	1898
Total	5053	201	670	147	4919	6023
Average	1684	67	223	49	1640	2007
Percentage	86	103	76	94	82	57

Table 6. Three-day nutrient intake recall during hospitalisation

Discharge Diet

Upon discharge, the patient was recommended a high-protein, vegetarian diet providing 1950 Kcal and 65 g of protein, along with a sodium-restricted diet.

Patient was recommended to increase intake of protein, antioxidant-rich fruits and vegetables, maintain adequate hydration status, ensure sufficient calcium in diet and abstain from processed food items [5,6].

Conclusion

A 25-year-old female presented with shortness of breath, upper abdominal pain, elevated liver enzymes, hemolysis, and thrombocytopenia. She

was diagnosed with HELLP syndrome, a rare but severe pregnancy complication requiring urgent intervention.

Alongside medical treatment, nutritional support was emphasised. Once the patient was hemodynamically stable, enteral feeding was initiated at low levels and gradually advanced. Within 2–3 days, her nutritional requirements were met, allowing transition to oral intake.

Outcome: The patient was discharged on a high-protein diet, highlighting the importance of timely nutritional management in recovery from HELLP syndrome.

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