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A RARE PRESENTATION OF INFANTILE TREMOR: OVER COMING MALNUTRITION AND INFECTIONS IN A PEADIATRIC IN A PEADIATRIC PATIENT



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ARTICLE HISTORY	ABSTRACT
Received on: 14-12-2025 Revised on: 19-01-2026 Accepted on: 04-02-2026	<p>Infantile Tremor Syndrome (ITS) is a rare neuro-nutritional disorder observed in young children, characterized by tremors, malnutrition, and developmental regression. This case report details a 4-year-old female patient weighing 5.2 kg, who was admitted due to recurrent vomiting, refusal to consume solid food, and progressive skin peeling. A physical examination revealed hyperpigmented patches, exfoliation, and erosions on the scalp, trunk, and extremities, along with mucosal lesions indicative of zinc deficiency. Developmental assessment indicated delayed milestones, such as poor neck control and an inability to stand or walk, suggesting the presence of coexisting cerebral palsy. The patient was diagnosed with it's complicated by severe malnutrition and dermatological symptoms resembling acrodermatitis enteropathica. Management strategies included nutritional rehabilitation utilizing an F-75 diet, supplementation with zinc and multivitamins, antifungal treatment (fluconazole syrup), topical mupirocin for skin protection, and ophthalmic intervention for corneal opacity. Significant clinical improvement was noted following supplementation and supportive care. This case underscores the necessity of early identification, thorough nutritional evaluation, and multidisciplinary management—including pharmacological, dietary, and counseling interventions—for children with ITS. Pharmacists are crucial in ensuring the appropriateness of drug therapy, preventing drug-nutrient interactions, and educating caregivers for long-term disease prevention and nutritional recovery. Early detection and integrated management are vital for enhancing outcomes in ITS and preventing recurrence.</p> <p>Keywords: Probiotics Infantile Tremor Syndrome; Malnutrition; Neuro-nutritional Deficiency; Vitamin B12 Deficiency; Zinc Deficiency; Cerebral Palsy; Nutritional Rehabilitation; Multidisciplinary Management.</p>
	
	

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INTRODUCTION

Infantile Tremor Syndrome (ITS) is a rare but important neuro-nutritional disorder that mainly affects children between 6 months and 2 years old. It shows a mix of neurological and nutritional issues, making diagnosis and treatment quite challenging. Key features of ITS include paleness, delays or regressions in development, changes in skin pigmentation, and thin brown hair on the scalp [1]. These symptoms often come with coarse tremors, low muscle tone, and anemia, which can create a misleading impression of adequate nutrition despite hidden malnutrition [2]. ITS is most commonly seen in the

Indian subcontinent, especially in infants born to vegetarian or vegan mothers whose diets lack vitamin B12 [3,1]. Vitamin B12 deficiency is recognized as the main cause of ITS [4,5]. However, there have been rare cases of ITS linked to vitamin C deficiency as well [6]. Additionally, unusual cases of ITS with bilateral diaphragmatic palsy have been reported, showing positive responses to high doses of vitamin B12 given through injections [8]. Recent studies also indicate a potential link between ITS and West syndrome, a serious form of epileptic encephalopathy marked by infantile spasms and developmental setbacks. This connection is thought to arise from developmental desynchronization, which disrupts the normal timing and sequence of neurodevelopmental processes, increasing the risk of neurological disorders [7]. The importance of this study is in its role in enhancing the understanding of the complex presentation and treatment of its, particularly when it is complicated by severe malnutrition,

cerebral palsy, and skin issues that may indicate zinc deficiency.

AIM AND OBJECTIVES

This case report describes the clinical presentation, diagnostic difficulties, and multidisciplinary management of a 4-year-old girl diagnosed with Infantile Tremor Syndrome, which is complicated by malnutrition and related deficiencies. It emphasizes the need for early detection, nutritional recovery, and comprehensive therapeutic care to enhance clinical results and avoid long-term neurodevelopmental issues.

Materials and Methods

Study Design

This study is a single-patient case report from the Department of Pediatrics at Government General Hospital, concentrating on the clinical diagnosis, management, and outcomes of Infantile Tremor Syndrome (ITS) complicated by malnutrition, cerebral palsy, and skin issues. The research adhered to institutional ethical standards, obtaining informed consent from the patient’s parents for the publication of clinical information and images.

Diagnosis

Upon admission, a detailed clinical assessment was conducted, which included a complete history, nutritional evaluation, and systemic examination.

Anthropometric Assessment: Weight, height, and mid-upper arm circumference were recorded and analyzed using WHO growth charts to assess the level of malnutrition.

Physical and Neurological Examination: Developmental milestones were evaluated for gross and fine motor skills, muscle tone, and reflexes to detect neurodevelopmental delays and hypotonia.

- Nutritional status was assessed through anthropometric data and NRC (Nutritional Rehabilitation Center) evaluation, following WHO growth standards for Severe Acute Malnutrition (SAM).
- Laboratory tests included Complete Blood Count (CBC), C-reactive protein (CRP), serum electrolytes, renal and liver function tests, and serum vitamin B12 and folate levels.
- Specialized assessments and confirmations of related symptoms were conducted through dermatological and ophthalmological referrals.
- Due to budget constraints, serum zinc testing could not be carried out; however, a trial of zinc supplementation was given to evaluate the clinical response.

Therapeutic Management

The patient received treatment through a collaborative approach that included pediatricians, dermatologists, ophthalmologists, and dietitians.

Table 01: Multidisciplinary Treatment Plan and Dosage Details

Category	Medication	Dose	Route / Frequency	Indication
IV Fluids	½ DNS	20 mL/minute	IV	Fluid and electrolyte balance
Antibiotic	Meropene	20	IV TID	Infection

	m	mg/kg		control
Antifungal	Fluconazole	25 mg/kg	P/O OD	Candidiasis prophylaxis
Vitamin B12	Cyanocobalamin	1 amp 1000mcg/ml	IM OD	Correct B12 deficiency
Zinc Supplement	Syp.Zinc	10 mg/5 mL, 5 mL	P/O TID	Treat zinc deficiency
Multivitamin	Syp. Multivitamin	2 mL	P/O OD	Support overall nutrition
Vitamin A	Syp. Vitamin A	1 mL	P/O OD	Support epithelial healing
Antihistamine	Atarax (Hydroxyzine)	2.5 mL	P/O BD	Symptomatic relief
Topical	Mupirocin ointment	—	Topical BD	Prevent secondary infection
Diet	F-75 therapeutic formula	75 kcal/100 mL	Oral feeding	Nutritional rehabilitation

Nutritional Rehabilitation: The patient was referred to the Nutritional Rehabilitation Center (NRC) and started on the F-75 therapeutic diet (75 kcal/100 mL) to stabilize severe acute malnutrition (SAM). A gradual shift to higher-calorie feeding was planned as tolerated.

Supportive Care: Intravenous fluids (½ DNS @ 20 mL/min) were given to ensure hydration and maintain electrolyte balance.

Table 02: Laboratory Investigations of the Patient

Parameter	Observed Range	Reference Range
Haemoglobin	4.5 g/dl	12-14.5 g/dl
Total Count	2500 cells/cumm	4000-11000 cells/cumm
N/L/E/M	60/35/3/2	N: 40-65%, L: 25-40%, E: 1-6%, M: 2-4%
Platelet Count	1.0 lakh/cumm	1.5-4.0 lakh/cumm
MCV	80 fl	76-96 fl
PCV	27%	34-48%
MCH	20 µg	26-32 µg
MCHC	25%	31-36%
CRP	Positive	Negative
Blood Urea	12 mg/dl	15-45 mg/dl
Serum Creatinine	0.3 mg/dl	0.5-1.5 mg/dl
Total Bilirubin	1.2 mg/dl	≤ 1 mg/dl
Sodium	134 mEq/L	135-155 mEq/L
Potassium	3.8 mEq/L	3.5-5.5 mEq/L

(K ⁺)		
Serum Calcium	10.4 mg/dl	9–12 mg/dl
Vitamin B12	247 pg/ml	120–914 pg/ml
Folate	3.5 ng/ml	> 5.38 ng/ml

RBC Morphology: Microcytic hypochromic RBCs seen

Established Reference Methods Used:

- Blood components were assessed using automated analyzers; serum levels of Vitamin B12 and folic acid were measured through chemiluminescence immunoassays based on World Health Organization standards.
- The diagnosis of ITS was based on the findings of Gupta et al. The year 2010 was also examined by Ratagarri et al. In 2012, diagnostic criteria for Infants' Tremors Disorder was established in literature review studies [2, 6].

RESULTS

After one week of treatment and follow-up:

- The condition showed notable improvement; peels were removed, lesions healed, and new tissue appeared on the skin's surface.
- The patient showed better cognitive function, improved motor skills, and increased responsiveness to external stimuli.
- Better nutrition led to a weight gain of 0. A weight of 8 kilograms resulted in a heightened sense of hunger and improved ability to digest solid foods.
- Vision improved, leading to less corneal opacity and greater ocular comfort.
- Hemoglobin levels increased to 4g/dl. The concentration ranges from five grams per deciliter to 7gm/dl.

Table 03: Clinical Progress Summary

Parameter	Admission	After 1 Week	Observation
Weight	5.2 kg	6.0 kg	Improved
Skin Lesions	Extensive erosions, crusting	Healed, pigmentation fading	Marked recovery
Eye Condition	Corneal opacity	Partially resolved	Improved vision
Appetite	Poor	Normal	Nutritional recovery
Neurological Status	Hypotonic, weak	Improved tone	Positive response

Visual Observation

- The crustiness and discoloration on the crown area have faded and gone away.
- The skin has fully healed with no wounds left.
- There was a notable amount of skin shedding along with a better complexion.

DISCUSSION

This case shows how a person with severe malnutrition from a lack of iron, low white blood cell counts, and skin issues from not getting enough zinc, along with a poor diet, received successful treatment. Lab tests showed very low red blood cell levels, with an anemic reading of 4 g/dL. A reading of 5 grams

per deciliter in red blood cells and a white blood cell count of 2500 cells per microliter, along with high C-reactive protein levels, suggests an infection and inflammation. Microscopic examination of small, paler red blood cells indicated anemia due to iron deficiency. Low folic acid levels (4 ng/mL) were noted in this group. A level of 5 mg/dL pointed to problems with blood cell production due to poor diet. The treatment included giving zinc and vitamin pills, consuming a lot of calories from F-75 food, and taking medications like Meropenem for bacterial infections and Fluconazole for fungal infections. Moreover, vitamin B12 supplementation helped treat the anemia by supporting the production of healthy red blood cells. The child showed significant improvement in a short time. Hunger returned, body weight increased, and skin issues improved. None of the patients had negative reactions during treatment. Possible reasons for the improvement:

- Zinc helps in skin healing, boosts immunity, and speeds up wound recovery.
- Vitamin B12 and folic acid support the creation of healthy red blood cells and hemoglobin.

- Meropenem and fluconazole successfully fought off pathogens and supported healing processes.
- The F-75 diet contributed to better overall body balance and nutritional intake, which improved metabolic function.
- The results align with earlier research showing that providing micronutrients and a collaborative healthcare approach helps children with nutritional deficiencies and skin problems.
- This example demonstrates that early detection and effective treatment can prevent serious issues and speed up healing processes.

CONCLUSION

This report emphasizes the importance of early recognition, accurate diagnosis, and comprehensive treatment for childhood Tremor Syndrome associated with severe malnutrition, zinc deficiency, and delayed development. Proper nutrition, vitamins, and infection control significantly improved the child's condition and prevented similar issues. This case highlights the necessity for collaboration among pediatricians, nutritionists, and pharmacists to ensure complete recovery and long-term health. Overall, this case underscores the need for awareness and early screening in resource-limited communities. Further research into the molecular and metabolic factors of ITS could enhance treatment and prevent future problems, benefiting children's health in impoverished areas.

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CONFLICT OF INTEREST

Authors are declared that no conflict of interest.

INFORM CONSENT AND ETHICAL STATEMENT

Not Applicable

AUTHOR CONTRIBUTION

All Authors are contributed equally.

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REFERENCES

1. Puttagunta A.S, K S, S S, S R. Infantile tremor syndrome. Indian J. Contemp. Pediatr. 2017; 4(6); 2228–2230.
2. Gupta R, Rawat A.K, Singh P, Gupta J, Pathak A. Infantile tremor syndrome: current perspectives. Res. Rep. Trop. Med. 2019; 10(1); 103–108.
3. Kumar S, Sah S, Ray P, Bhattacharya P, Chatterjee N. Infantile Tremor Syndrome with Movement Disorder: Current Perspective. Cureus. 2022; 14(12); e33091.
4. P K, K P. Epileptic spasms in a child with infantile tremor syndrome: A rare case report and review of literature. Indian J. Child Health. 2019; 6(1); 49–50.
5. Kumar R, Kumar J, Gupta A. A child with megaloblastic anaemia in pre-infantile tremor syndrome: A case report. IAR J. Med. Sci. 2022; 3(1); 27–28.
6. Ratageri V.H, Shepur T.A, Patil M.M, Hakeem M.A. Scurvy in infantile tremor syndrome. Indian J. Pediatr. 2005; 72(10); 883–884.
7. Azad C, Singh J, Guglani V. Infantile Tremor Syndrome followed by West Syndrome: Effect or continuation of spectrum? J. Trop. Pediatr. 2020; 66(5); 556–560.
8. Bidhuri N, Kumar V, Singh R, Singh D.P, Agarwal S, Nandan D. Diaphragmatic palsy in a 10-month-old boy with infantile tremor syndrome causing respiratory failure with full response to vitamin B12 therapy. Paediatr. Int. Child Health. 2020; 40(4); 248–250.