

ACUTE NON FEBRILE QUADRIPARESIS- A CASE SERIES STUDY IN ARUNACHAL PRADESH

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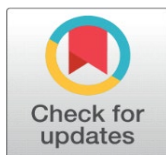
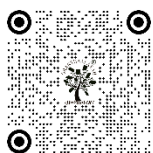
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ABSTRACT

In recent years consumption of carbonated caffeine-containing energy drinks among young adults and athletes has increased significantly. However excessive consumption carries potential health risks including cardiovascular complications, neurological disturbances and the risk of dependence.

We present a case series of individuals from Arunachal Pradesh over a period of two years (August 2023 to July 2025) who developed acute, non-febrile quadriparesis following excessive consumption of non-alcoholic carbonated energy drinks. The predominant clinical presentation was acute-onset weakness with sensory deficits in young adults following binge intake of these beverages.

Keywords: Energy Drink, Acute Quadriparesis, Carbonated Drink

1. INTRODUCTION

Energy drinks are widely available beverages that typically contain high concentrations of caffeine, added sugars, and other stimulants such as guarana, taurine, and L-carnitine. They are marketed as agents that enhance physical and cognitive performance by increasing alertness, attention, and energy levels.

However, excessive or binge consumption has been associated with adverse health effects, leading to a growing number of young individuals seeking medical attention for anxiety, gastrointestinal disturbances, dehydration, nervousness, and tachycardia, as well as more severe complications such as rhabdomyolysis and acute paralysis.

Over the past two decades, energy drink consumption has risen dramatically, particularly among adolescents and young adults [8]. In Northeast India, especially in Arunachal Pradesh, their use has become increasingly prevalent and normalized among young adults. These beverages are readily available across settings ranging from small retail shops to large departmental stores and are commonly consumed during social gatherings, often as a substitute for alcohol.

We conducted a case series of patients presenting with acute non-febrile quadriparesis and a history of binge energy drink consumption, admitted to the Departments of General Medicine and Neurology at Tomo Riba Institute of Health and Medical Sciences over a two-year period.

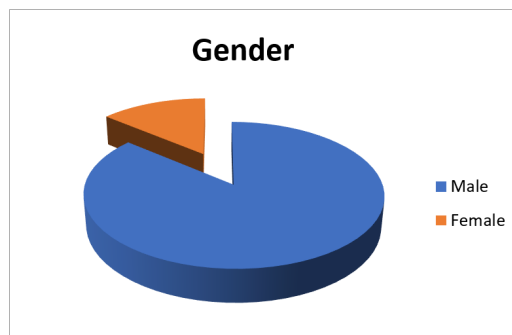
2. METHODS

Patients admitted to the Department of General Medicine and Neurology wards of Tomo Riba Institute of Health and Medical Sciences (TRIHMS), Naharlagun, Arunachal Pradesh presenting with acute non-febrile quadriparesis after consumption of more than 500ml of carbonated caffeine containing energy drink daily for 5 days along with background of chronic intake of such beverages in the study.

Cases were collected from August 2023 to July 2025. Patient with recent history of febrile illness, acute febrile weakness, acute gastroenteritis, chronic liver disease, alcohol liver disease, diabetes mellitus, chronic kidney disease, traumatic cervical injury, cerebrovascular accident and those with any chronic ailments were excluded.

All the patients were thoroughly examined and neurological findings were noted and biochemical profile, nerve conduction study, MRI of brain and whole spine, echocardiography and CSF analysis were evaluated.

Demography	Cases	Percentage
Gender		
Male	87	86%
Female	14	13.80%
Age		
10-19 years	52	51.40%
20-39 years	42	41.50%
More than 40 years	7	6.90%
Total	101	100%



3. CASE REPORTS

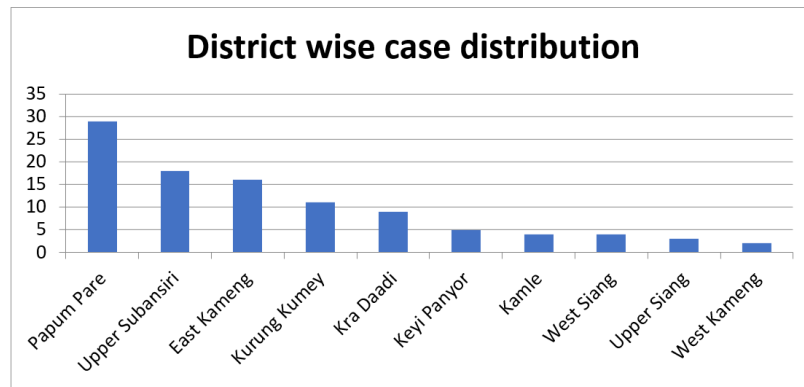
A total of 101 patients fulfilling the inclusion criteria were included in the study. Of these, 87 were males (86.2%) and 14 were females (13.8%), showing a marked male predominance.

The highest number of cases was reported from Papumpare district, accounting for 29 patients (28.7%).

All patients presented with acute non-febrile quadriparesis following the consumption of more than 500 mL/day of non-alcoholic carbonated caffeine-containing energy drinks over a short duration.

The common presenting symptoms included quadriparesis, fatigue, muscle cramps, tremors, paresthesia, palpitation and generalized body swelling.

Districts	Cases	Percentage
Papum Pare	29	28.70%
Upper Subansiri	18	17.80%
East Kameng	16	15.80%
KurungKumey	11	10.80%
KraDaadi	9	8.90%
KeyiPanyor	5	4.90%
Kamle	4	3.90%
West Siang	4	3.90%
Upper Siang	3	2.90%
West Kameng	2	1.90%
Total	101	100%



4. DISCUSSION

In our study acute non-febrile weakness with associated sensory deficits was the predominant presentation among young adults with a history of acute binge consumption of non-alcoholic carbonated caffeine-containing energy drinks. On neurological examination, all patients demonstrated reduced sensations of pain, touch, temperature and vibration below the knees. Motor examination revealed generalized hypotonia with decreased muscle power more pronounced in the lower limbs than the upper limbs along with diminished deep tendon reflexes. Cranial nerve examination, sensory system and cerebellar signs were within normal limit. Other systemic examination was largely unremarkable except for bilateral basal crackles on respiratory examination in four patients.

Laboratory investigations were within normal limits in most patients except for mild hypokalemia observed in a few cases and thiamine deficiency identified in four patients. Echocardiographic evaluation in these four patients revealed dilatation of the right atrium and right ventricle along with minimal pericardial effusion.

Neuroimaging including MRI of the brain and whole spine was normal in all patients. Cerebrospinal fluid analysis was also unremarkable. However nerve conduction studies of all four limbs demonstrated features consistent with sensory-motor axonal polyneuropathy.

All patients were admitted to Department of General Medicine and Neurology wards of Tomo Riba Institute of Health and Medical Sciences (TRIHMS), Naharlagun and were managed conservatively with high-dose thiamine and vitamin B-complex supplementation. Patients showed significant clinical improvement and were discharged after approximately one week with advice for follow-up.

5. CONCLUSIONS

Acute binge consumption of non-alcoholic carbonated caffeine-containing energy drinks among young adults in Arunachal Pradesh is associated with development of acute non-febrile quadriplegia predominantly affecting the peripheral sensory and motor systems.

There is a paucity of existing research providing robust evidence to explain the etiology of such presentations in this population. The clinical features observed in our study may be attributed to acute thiamine deficiency possibly precipitated by excessive intake of high-carbohydrate, caffeine-rich energy drinks leading to metabolic imbalance and subsequent peripheral neuropathy.

CONFLICT OF INTERESTS

None.

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REFERENCES

- Alsunni, A. A. (2015). Energy drink consumption: Beneficial and adverse health effects. *International Journal of Health Sciences (Qassim)*, 9(4), 468–474. <https://doi.org/10.12816/0031237>
- Bisht, K. S. (2025). *International Journal of Pharmaceutical Sciences*, 3(4), 1015–1027.
- Costantino, A., Maiese, A., Lazzari, J., Casula, C., Turillazzi, E., Frati, P., & Fineschi, V. (2023). The dark side of energy drinks: A comprehensive review of their impact on the human body. *Nutrients*, 15(18), 3922. <https://doi.org/10.3390/nu15183922>
- Dubey, D., et al. (n.d.). Paroxysmal paralytic attacks secondary to excessive cola consumption. ResearchGate. https://www.researchgate.net/publication/260395874_Paroxysmal_Paralytic_Attacks_Secondary_to_Excessive_Cola_Consumption
- Erdmann, J., Wiciński, M., Wódkiewicz, E., Nowaczewska, M., Słupski, M., Otto, S. W., Kubiak, K., Huk-Wieliczuk, E., & Malinowski, B. (2021). Effects of energy drink consumption on physical performance and potential danger of inordinate usage. *Nutrients*, 13(8), 2506. <https://doi.org/10.3390/nu13082506>
- Kelly, C. K., & Prichard, J. R. (2016). Demographics, health, and risk behaviors of young adults who drink energy drinks and coffee beverages. *Journal of Caffeine Research*, 6(2), 73–81. <https://doi.org/10.1089/jcr.2015.0027>
- Otero-Requeijo, M., Veiga-Rodeiro, S., Belda-Ferri, L., & Villanueva-Blasco, V. J. (2025). Influence of energy drink consumption on perceived quality of life in young adults and adult population. *Frontiers in Nutrition*, 12, 1662098. <https://doi.org/10.3389/fnut.2025.1662098>
- Wassef, B., Kohansieh, M., & Makaryus, A. N. (2017). Effects of energy drinks on the cardiovascular system. *World Journal of Cardiology*, 9(11), 796–806. <https://doi.org/10.4330/wjc.v9.i11.796>
- Wiley, K. D., & Singh, J. (2026). Vitamin B1 (thiamine) deficiency. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK537204/>