

Hypocalcemia in *Cleistanthus collinus* Poisoning

The leaves of *Cleistanthus collinus* (CC) known as *oduvanthazhai* in Tamil language is a commonly consumed plant poison in rural areas, usually with a suicidal intention. Distal renal tubular acidosis is known to occur with CC poisoning and hypokalemia is a risk factor for mortality [1,2]. However, hypocalcemia in children with CC poisoning has not been documented.

Two girls (12 years and 8 years of age) and their brother (9 years) were brought to our hospital with alleged history of consumption of 100-200 mL of boiled leaf extract of CC. Their mother had given them the poison before consuming herself due to a family dispute. They developed vomiting, drowsiness and breathing difficulty after an hour. Gastric lavage was done in a nearby hospital after 4 hours of consumption and brought to JIPMER after 48 hours of ingestion. The two girls had polyuria, altered sensorium and shock while the boy was hemodynamically stable. The eldest sibling had sinus bradycardia and prolonged QTc. Blood investigations revealed severe metabolic acidosis, hypokalemia, and hypocalcemia. However, the levels of urea, creatinine and albumin were normal. Despite, mechanical ventilation and supportive care including potassium replacement and inotropic support, the two girls had cardiac arrest and died on the third and fourth day of hospitalization.

The intake of boiled leaf extract preparation (increased

concentration of plant glycosides) and the delay in gastric lavage probably contributed to the death of the 2 girls [3]. The boy probably survived owing to decreased amount ingested. Apart from metabolic acidosis and hypokalemia, all three children had persistent hypocalcemia. Hypercalciuria associated with distal renal tubular acidosis probably contributed to the hypocalcemia. However, urinary calcium excretion could not be documented. In addition to metabolic acidosis, hypocalcemia perhaps contributed to myocardial dysfunction and mortality. In a child with CC poisoning, it is prudent to watch for hypocalcemia and correct the same, if present.

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REFERENCES

1. Nampoothiri K, Chrispal A, Begum A, Jasmine S, Gopinath KG, Zachariah A. A clinical study of renal tubular dysfunction in *Cleistanthus collinus* (Oduvanthalai) poisoning. *Clin Toxicol (Phila)*. 2010; 48:193-7.
2. Shankar V, Jose VM, Bangdiwala SI, Thomas K. Epidemiology of *Cleistanthus collinus* (oduvan) poisoning: clinical features and risk factors for mortality. *Int J Inj Contr Saf Promot*. 2009; 16:223-30.
3. Subrahmanyam DK, Mooney T, Raveendran R, Zachariah B. A clinical and laboratory profile of *Cleistanthus collinus* poisoning. *J Assoc Physicians India*. 2003; 51:1052-4.

Iron and Zinc Deficiency in Children

The article on 'Effect of Iron and Zinc deficiency on short term memory in children' [1] is an eye opener, as micronutrient malnutrition and its ill effects are rampant in our country. Iron deficiency anemia is the most common nutritional disorder, even in the current era. Iron is essential for oxygen carrying, muscle functions, immune function and brain myelination, neurotransmission and cognitive functions [2]. Even mild to moderate anemia in infancy and early childhood are known to leave a permanent signature on the growing brain. Iron has effects on the neurotransmitters like dopamine and probably

serotonin [2]. Iron deficiency reduces dopaminergic receptors and the reduction in dopaminergic receptors leads to increase in opiate receptors and resultant defective learning ability and cognition. The role of iron deficiency on aggravating breath holding spell, febrile seizure, and hypercyanotic blue spell are also being increasingly observed in clinical practice. Similarly, zinc is essential for enzyme function, metabolism, immune function, taste sensation, reproduction, cognition and retinal function [3]. The findings of the above study prove robust evidence in this context.

However, data regarding how many children had malnutrition, how many had anemia, the distribution according to hemoglobin level, severity of iron and zinc deficiency are lacking in the presentation [1]. Serum

protein level, that may be a confounder while interpreting serum zinc level, is to be evaluated in such a study. It is also interesting to know whether deworming was given prior to iron therapy, as the role of parasitic infestation in deficiency is discussed in the presentation. Deworming is essential to break the negative spiral of worm infestation, malnutrition and altered immunity [4].

The dose of iron 2 mg/kg/day and zinc 5 mg/day is suboptimum to treat deficiency state. The authors have not given any explanation for choosing prophylactic dose for treatment. The reference endorsing the selection of 6-8 years and 9-11 years as the age for cultivating inspiration and wisdom and for formative process and reasoning, respectively, as cited in the concluding paragraph is also missing.

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REFERENCES

1. Umamaheswari K, Bhaskaran M, Krishnamurthy G, Hemamalini, Vasudevan K. Effect of iron and zinc deficiency on short term memory in children. *Indian Pediatr.* 2011;48:289-93.
2. Beard JL. Iron biology in immune function, muscle metabolism and neuronal functioning. *J Nutr.* 2001;131:5685-795.
3. Bhatnager S, Taneja S. Zinc and cognitive development. *Br J Nutr.* 2001;85:S139-45.
4. Koski KG, Scott ME. Gastrointestinal nematodes, nutrition and immunity: Breaking the negative spiral. *Annu Rev Nutr.* 2001;21:297-321.

REPLY

Though data with regards to malnutrition was recorded, it was not described in the article because priority was given to the prime objective of the study which was a correlation between iron and zinc deficiency with memory. Deworming was done prior to start of supplementation of all the students who participated in the study. We had met the parents of the children every week. Parents of 9 children complained that the child had sensation of nausea, and 6 of them gave history of frequent passage of stools. Taking the response into consideration and with the references [1,2] mentioned below, the dose of supplementation was reduced. The reference endorsing the selection of 6-8 years and 9-11 years as the age for cultivating inspiration and wisdom and formative process and reasoning respectively, is Ramesh, *et al* [3].

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REFERENCES

1. Ambruso DR, Hays T, Golderberg NA. Current Diagnosis & Treatment: Pediatrics. Hematological disorder, *Ed.* 19. USA: Mc Graw Hill; 2009.p.811.
2. Kleigman RM, Marcante KJ, Jenson HB, Behrman RE. Nelson Essential of Pediatrics. 5th Edition. Philadelphia: Saunders; 2006.p.154.
3. Mishra RC, Dasen PR. The influence of schooling on cognitive development: A review of research in India. *In:* BN Setiadi, Supratiknya A, Lonner WJ, Poortinga YH (Eds). Ongoing Themes in Psychology and Culture (Online Ed). Melbourne, FL: International Association for Cross-Cultural Psychology. Available from:www.iaccp.org. Accessed on: July 1, 2011.

Measles Vaccine *versus* MMR

I read the article "Introduction Strategy of a Second Dose Measles Containing Vaccine in India" [1] with great interest. The move, when enforced, may lead to a lot of confusion in the recommendations between the public and the private sector.

In the private sector, pediatricians are already administering the measles vaccine at 9 months followed by MMR at 15 months and an MMR booster at either 5 years or 9-12 years. In fact, even the routine immunization protocol in Delhi, Puducherry, Goa and Sikkim already use the MMR vaccine as the second dose in the second

year of (life and not the measles vaccine).

I wonder what lead to the recommendation of a second dose of measles vaccine and not MMR as the second dose in the second year. If the entire government machinery had been used to push through MMR as the recommended dose in the second year, it would have lead to a wider protection against more diseases while at the same time achieving a uniformity of recommendations between the private and the public sector. With the new recommendations, if I now have a child coming to me who has already taken 2 doses of the measles vaccine at 9 months and 18 months, I would end up giving him 2 more doses of measles in the form of MMR going by the current recommendations for the MMR vaccine.