The convergence of considerations in aluminum phosphide poisoning: The occurrence of injuries beyond the metabolic manifestations

Sir,

Aluminum phosphide (ALP) protects grains from pests, but toxicity to humans is still a major dilemma for society and health professionals, particularly in developing countries such as Iran and India. There is no antidote, and high mortality rate continues even with ongoing developments in treatment. Many papers which are published in the literature, review this important topic, providing extensive facts on metabolic manifestations as well as focusing on novel initiatives to scale-up the standard of care of patients. However, a vast majority of them have ignored recently published evidence that elaborates the causes of detrimental events associated with the metabolic disturbances. Thus, the story still continues why even with such advances in management protocols and lethal outcomes remain high.

There is evidence documenting harms beyond current standpoints in the field that may support the notion that the metabolic disturbances in themselves do not justify the fatal outcome of the toxicity.[1] These findings have resulted in elucidating new mechanisms of action of ALP and demonstrating ALP poisoning management modifications.[2]

It has been shown that thermal injuries contribute to high mortality rate in ALP poisoning cases.[1,2] These findings have appeared in literature and have been employed in practice.[3-5] Yet, subsequent literature reviews and subordinate deductive reasoning indicate constant ignoring of these findings. Table 1 has focused on the hierarchy of evidence breakdowns which result in the rationales behind the resettings in approach to ALP poisoning and conclude with certainty to converge the endeavors dealing with ALP strategies. It is suggested that the strategies of the approach to ALP poisoning both in research and practice should be comprehensive and inclusive, comprising both physical and metabolic complications of ALP poisoning; otherwise, our interventions would not achieve a favorable outcome.

Table 1: Published articles focusing on local thermal injuries in aluminum phosphide poisoning

Author(s)	Reference	Expert opinion	Main notion of paper
Mirakbari	1	Thermal injuries occur in varied settings of ALP poisoning	Local thermal injuries contribute to the mortality
Mirakbari	2	New treatment strategies are proposed	Suggested treatment modifications reduce the mortality*
Senthilkumaran *et al.*	3	Thermal injuries occur in ALP poisoning. Alternatives to $KMnO_4$ are necessary	Changing treatment modalities reduce the mortality
Baruah *et al.*	4	$KMnO_4$ causes exothermic reaction, so it is eliminated in the case; IV lipid emulsion is administered instead	Novel initiatives are necessary to reduce the mortality

*Hypothermia induction/transferring to cold area, attenuating phosphine gas in stomach by injecting an inert gas, eliminating nasogastric suctioning/lavage from available interventions, elimination of potassium permanganate from treatment plan. IV = Intravenous; ALP = Aluminum phosphide

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Conflicts of interest

The authors have no conflicts of interest.

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