

Synthetic cow dung powder poisoning: Therapeutic aspects

Sir,

We read the case report entitled, "cow dung powder poisoning" by Sherfudeen *et al.*^[1] with great interest. As there are no specific antidotes for chemicals such as the synthetic cow dung powder, we would like to mention the usefulness of alkalinization of urine in synthetic cow dung powder poisoning.

The dye in cow dung powder has weak acidity and if ingested orally, major component of it gets eliminated through renal excretion.^[2] Alkalinization promotes the solubility of dye, especially malachite green which otherwise gets precipitated in the kidney and results in renal failure. Hence, it is worth to administer soda bicarbonate which enhances excretion of the component through urinary alkalinization.^[2] Moreover, early administration of soda bicarbonate minimizes the distribution of toxins into other tissues and enhances elimination of the toxins that exist in equilibrium between an ionized and unionized state.^[3] As the unionized toxins cross cellular barriers and lead to increased toxicity, it is good to keep the toxins in an ionized state which is theoretically desirable. Hence, serum alkalinization reduces the distribution of the toxin/dye into the central nervous system and curtails the occurrence of seizures.^[4] As the ionized form has low lipid and high water solubility, it remains "trapped" in the renal tubules and thereby prevents resorption of the toxins by the kidneys and enhances elimination in urine. This concept is often referred to "ion trapping."

Hence, we suggest the use of continuous infusions of soda bicarbonate to prevent the undue events in cow dung powder poisoning.^[4]

Moreover, the practitioners have to be informed to motivate their cases for follow-up, in view of its cytotoxicity and teratogenicity. As these types of poisoning contribute to morbidity and mortality, translational research activities have to be undertaken on these toxins, and therapeutic guidelines have to be provided. Many a time, locally available materials may be helpful as observed in cow dung powder poisoning.^[4] The old adage "when there is a will, there is a way" holds good for synthetic cow dung poisoning.

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Conflicts of interest

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