

The Unknown Exposure Risks of Paraquat

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Abstract

Introduction: Paraquat is used in over 120 developed and developing countries due to its efficacy as an herbicide and inactivation upon contact with soil. Some countries have banned its use or created safeguards to limit accidental poisonings from misuse, such as: adding blue dye, a sharp odor, agents to induce vomiting or requiring special licenses for users. Severe toxicity is primarily associated with ingestion of paraquat causing multi-organ failure within hours to a few days and potential death. Dermal exposure leads to corrosive injury to the dermis, occurs rapidly, and progresses for up to 24 hours. Prolonged dermal exposure or the presence of open wounds can lead to systemic absorption. To the author's knowledge this is the first report of burn injury and treatment due to secondary exposure to the urine of a patient who had accidental ingestion of paraquat.

A 50 year old Caucasian male presented to the emergency room after accidental ingestion of an unknown amount of Gramoxone extra (Paraquat 30% concentration). During initial care of the patient, the bedside registered nurse (RN) was placing an indwelling Foley catheter when her forearms were contaminated with urine, while wearing basic personal protective equipment (sterile gloves). The RN noticed bullae to bilateral forearms 2-4 hours post exposure to the urine. She presented to the burn center for evaluation and treatment. The risk and effects of primary exposure to Paraquat is described throughout the literature and documented in MSDS, but data regarding risk and treatment of secondary exposure is lacking. This case will aid outreach efforts for prevention and treatment of burn injuries from secondary exposure to paraquat.

Learning Objectives

1. Identify risks of exposure to Paraquat
2. Treatment modalities for Paraquat burns
3. Introducing new risk factors for exposure to Paraquat

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