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Ingestion of Natural Fertilizer Leading To Acquired Methemoglobinemia: Case Report

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Background: The Use Of Pesticides And Chemical Fertilizers In Agriculture Has Grown Dramatically Over The Past 5 Decades. Though Natural Fertilizer Formulations Or Biofertilizers Are Considered Harmless, Currently Toxicologic Data Are Not Available. Few Case Reports Are Available For Chemical Fertilizers Containing Nitrobenzene Inducing Methemoglobinemia But Literature About Natural Fertilizer Causing Methemoglobinemia Is Lacking.

Case Report: A 26-Year-Old Male With No Prior Significant Medical History Presented With An Altered Sensorium For 1 Hour. Bystanders Provided The History Of Consumption Of Fertilizer And The Empty Container Of The Same Was Provided. On Inspection Of The Container The Content Was Mentioned As Plant Extract And The Exact Chemical Composition Could Not Be Elicited. On Assessment Patient Had The Following Vitals: Pulse Rate Of 120 Per Minute, Blood Pressure -Of 120/80 MmHg, Respiratory Rate Of 26 Per Minute, Oxygen Saturation Of 80% At Room Air. The Saturation Did Not Improve With 15 Liters Of Oxygen With Non Rebreathing Mask. On Auscultation Of Lungs, Normal Vesicular Breaths Sounds Were Heard With No Added Sounds. Hence The Possibility Of Methemoglobinemia Was Suspected As There Was No Improvement In The Oxygen Saturation With Supplemental Oxygen. On Examination Central Cyanosis Was Noticed Only At The Tip Of The Tongue Because Of The Dark Tone Of The Patient. Primarily Stomach Wash Was Given To The Patient As The Presenting Time From Consumption Was 1 Hour. Arterial Blood Gas Showed Ph-7.31, Po₂- 363, So₂- 93.3, Meth Hb-68.1. So The Patient Was Administered Inj Methylene Blue (1 Mg/Kg) 65 Mg In 100ml Ns Intravenous. Repeat Methemoglobin Level Was 47.3%. A Repeat Dose Of Methylene Blue Was Given. Methemoglobin Levels Were Less Than 25% On Repeat Arterial Blood Gas Analysis. The Patient Was Clinically Better, Was Completely Conscious, Oriented To Time, Place And Person. After 12 Hours Patient's Oxygen Saturation Dropped To 80% And Repeat Blood Gas Analysis Showed Methemoglobin Level To Be Elevated More Than 25% So A Repeat Dose Of Methylene Blue Was Administered To The Patient. After 2 Days Of Admission Patient Clinically Improved With No Further Increase In Methemoglobin Level And Patient Was Discharged.

Conclusion:

Data Available On Fertilizer And Herbicide Toxicity Are Very Minimal, And When The Patient Presents With



The Ingestion Of Toxins It Is Very Difficult To Elicit The Component Which Has Been Ingested . It Makes The Diagnosis And Treatment Difficult. Therefore Suspect The Possibility Of Methemoglobinemia When The Patients Saturation Remains To Be 80 To 85 % With Supplemental Oxygen. Early Treatment With Methylene Blue 1 Mg/Kg Iv Infusion And Repeated Assessment Of The Patient Can Prevent The Mortality Of The Patient And Also The Complications Such As Seizures, Encephalopathy, Dysrhythmias, Coma And Death