



MANAGING INDOXACARB POISONING - A RARE PRESENTATION

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ABSTRACT Indoxacarb is a non-organophosphorous compound. It is a newer insecticide used rarely compared to the more common organophosphates by farmers. Hence less information is available on its toxic effects in humans. Timely diagnosis and management in ER can avoid unnecessary mechanical ventilation and other complications. There are few case reports in the literature about indoxacarb poisoning, most of them requiring mechanical ventilation. This is a case of indoxacarb poisoning resulting in methemoglobinemia and seizures timely managed with methylene blue and oxygen support without any need for mechanical ventilatory support.

KEYWORDS : Indoxacarb, Poisoning.

INTRODUCTION:

Indoxacarb acts by inhibiting neuronal sodium channels. It is a chitin synthesis inhibitor and neuronal sodium channel blocker in insects. There are increasing exposures to this compound with little information in the literature, with most exposures being confused with organophosphorous poisoning and patients being started on atropine. Hence early identification can avoid complications^{1,2}.

CASE REPORT:

A 25-year-old male patient was brought to the emergency room with an alleged history of unknown insecticide ingestion, followed by one seizure episode. By the time he was brought to the ER, it was 5 hours post-exposure. His admission blood pressure was 90/60 mm of Hg; Pulse rate- 107 beats per minute; Respiratory rate was 26/min, use of accessory muscles of respiration and flaring of alae nasi present, Spo2 78% with room air and 84% with 15 lit oxygen via a mask. The chest was clear, without added sounds. On CNS examination, the patient was conscious, and coherent, pupils were 3mm bilaterally, reacting to light. Other systems examination was unremarkable. Gastric lavage was done. ABG sample was dark brown in colour (as shown in the figure no.1), methemoglobinemia was suspected and sent for methemoglobin levels. Meanwhile the patient started developing cyanosis. pH of 7.33(7.35-7.45), pCo2 37mm of Hg (35-40), bicarbonate 19.2 mmol/L(22-26) were reported on ABG. Methemoglobin level was 30.4 % (1-3). Complete blood counts, renal function tests, liver function tests were normal. ECG showed sinus tachycardia. Chest X-ray was normal. Methylene blue was started at 2mg per kg stat over 3hrs. Patient's saturation started to improve within first hour to 88 percentage; to 90 percentage in next 1.5 hours, and to 95 Percentage in next 3 hours. Patient clinically improved and Spo2 was 100% with room air on next day and methemoglobin levels normalised and the patient was discharged after 3 days.

DISCUSSION:

The compound was found to be indoxacarb 4.5%, novaluron 5.25%. Indoxacarb is a broad spectrum oxadiazine insecticide³. It causes methemoglobinemia, seizures and in severe cases it can cause hemolytic anaemia, ARDS, acute renal failure, rhabdomyolysis, arrhythmias, heart failure, cardiac arrest. Methemoglobinemia is generated by oxidation of heme iron from ferrous to ferric state⁴. Due to high oxygen affinity, the oxygen dissociation curve is shifted to left, and no oxygen is delivered to tissues. After starting methylene blue, the patient passed green coloured urine (Figure no. 2) due to leucomethylene blue, reduced form of methylene blue^{5,6}.

CONCLUSION:

Methemoglobinemia must be suspected in patients with hypoxemia and cyanosis with high pO₂, sufficiently high to saturate normal haemoglobin with oxygen. There is no antidote for indoxacarb. Early diagnosis and treatment of adverse effects can revert desaturation within minutes to hours of starting methylene blue, can avoid unnecessary mechanical ventilation and save lives.



Figure no. 1



Figure no. 2

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