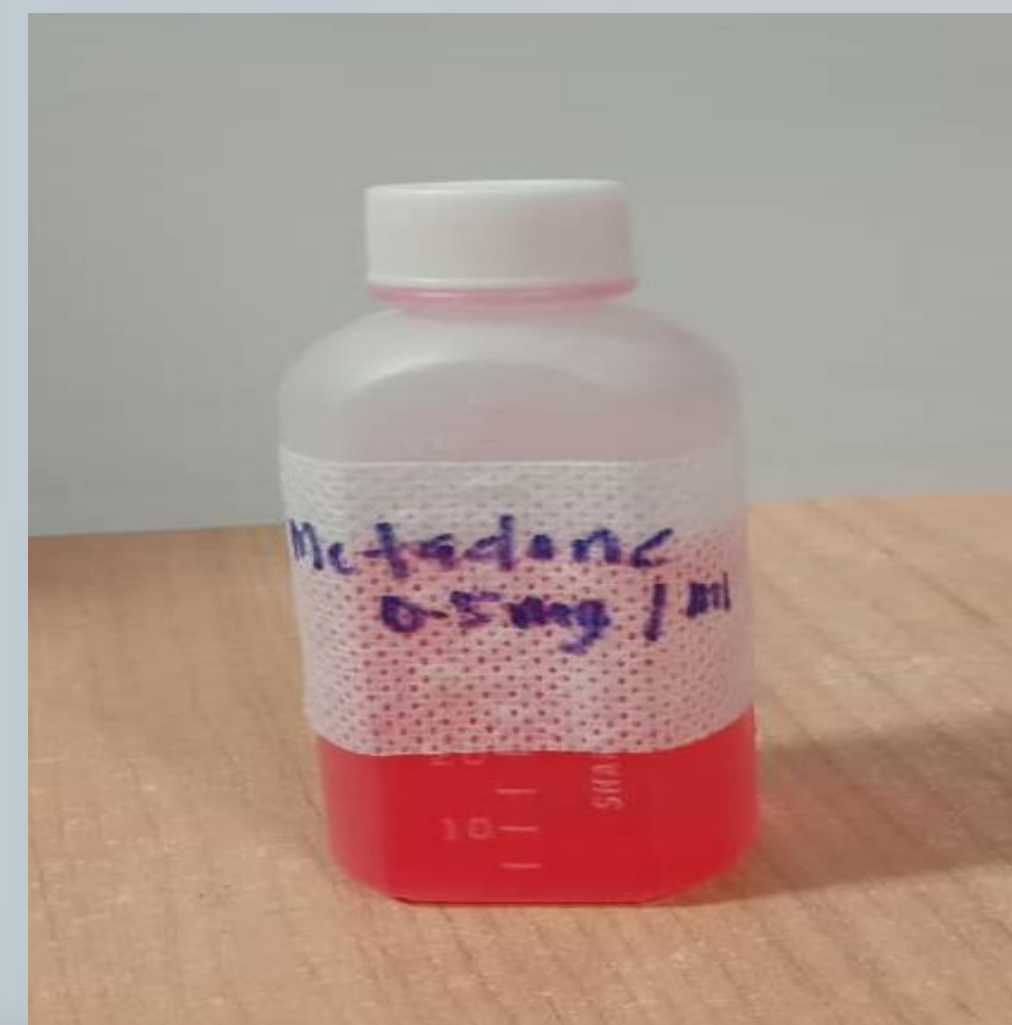




Wake Me Up, Daddy!

(Effect of methadone toxicity in paediatric age group)

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INTRODUCTION

Methadone ingestion can occur accidentally due to non-standard prescription, negligence or improper storage which can lead to methadone poisoning and death¹. The principles therapeutic used of methadone are for analgesia and for detoxification and maintenance therapy in opioid addiction^{1,2}. Poisoning and deaths linked to methadone have risen since the beginning of the treatment which commonly occur among children¹

CASE REPORT

A 3 year old girl with underlying bronchial asthma on salbutamol inhaler presented to emergency department (ED) with complaint of drowsiness post ingestion of 15mg (1.5mg/kg) syrup methadone which was mistaken as antipyretic by her father. One hour post ingestion, her father noticed his child vomit profusely, appeared drowsy and breathless. Upon presentation to emergency department, her Glasgow Coma Scale (GCS) was E3V4M5 and she was unable to maintain adequate oxygenation under room air. She was supported with 2L/min oxygen via nasal cannula and intravenous (IV) naloxone 1.5mg (0.1mg/kg) was administered. She regained full consciousness and saturation maintained under oxygen supply. Four hours later, her GCS dropped again to E3V2M6. Thus, second dose of IV naloxone 1.5mg was given. No more episode of desaturation or altered mentation after second dose of naloxone. Child was discharged well after 2 days of observation.

DISCUSSION

Methadone is a μ -agonist, a synthetic opioid with multiple actions similar to morphine which most prominent involves the central nervous system and organ composed of smooth muscle. It commonly prescribed as analgesia and maintenance therapy for opioid addiction³. Methadone has variable long half life in between 25 to 52 hours and with dosage of 1mg/kg can cause lethal to the children^{1,2,3}. The methadone abstinence syndrome, although similar to that of morphine, differs in that the onset is slower, the course is more prolonged, and the symptoms are less severe³.

Naloxone is pure opioid antagonist which acts as a reversal to opioid side effects including respiratory depression and sedation. It acts directly at opioid receptor binding site. Naloxone reverses both exogenous and endogenous opioids. Naloxone is effectively administered via parenteral. The onset of action after IV dosing is within 2 minutes and the duration of action is variable between 20 to 60 minutes. Studies recommended the usage of an IV naloxone dose of 0.1 mg/kg in children under five years old or less than 20kg. In children greater than 5 years or 20 kg, a naloxone dose of 2 mg is recommended for reversal when respiratory compromise is present. Onset of action after IV dosing is within 2 minutes and the duration of action for naloxone is shorter than most of opioids, thus there is a possibility for recurrence opioid toxicity when the antagonist effects of naloxone wane off. Additional doses, given at intervals of 20 minutes to 2 hours, may be necessary to maintain reversal. It has been recommended that patients who receive naloxone be continuously observed for a minimum of 2 hours after the last dose⁴.

Methadone is available in various forms like pill, sublingual tablet, syrup, intravenous injection and two different formulations designed for the patient to drink. In Malaysia methadone consumption instruction is by oral syrup form according to ministry of health 2005⁵. Unsafe storage of methadone, particularly in form of syrup kept in bottles or other medicine bottles, results in its confusion with other drugs¹.

CONCLUSION

Methadone poisoning in children is a global health and welfare issue⁵. It often occurs in families with methadone-using parents¹. The exposures of accidental methadone poisoning risk in children are undeniable and can result in serious health complications and death. The issue of safety and precaution of innocent children from methadone poisoning exposure is crucially important. Accidental poisoning with methadone can be reduced by the education of patients, supervision of methadone consumption, dispensing of methadone doses in resistant bottles for children and storage of methadone in safe places⁵.

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