

Repeated episodes of seizures in an infant following accidental administration of tramadol suppository: a case report

Israt Zahan Ima*, Md Abdul Baki, Jebun Nahar

Department of Pediatrics, Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM), Dhaka, Bangladesh

Abstract

Tramadol has become a popular analgesic in last few years. Number of studies has reported tramadol poisoning in children. Here, we report a case of tramadol poisoning in a one and half month old infant who presented with repeated seizures and apnea following accidental administration of tramadol suppository.

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Introduction

Tramadol, an analogue of codeine, is an analgesic that acts upon central nervous system (CNS). Tramadol is an agonist of the opioid (mainly μ -opioid) and gamma-aminobutyric acid (GABA) receptors and inhibits the reuptake of serotonin (SSRI) and norepinephrine (SNRI) in CNS [1]. Classic features of intoxication are bradypnea or apnea, CNS depression and meiosis [2]. Other features are seizures, confusion, hemodynamic instability, blood glucose abnormality, hepatic injury and anaphylaxis [3-5]. Seizure occurs within first 6 hours of tramadol poisoning [6-8]. Naloxone has been used as a specific antidote for opioid poisoning [9]. Tramadol is not usually prescribed for children and tramadol intoxication may occur in younger children due to its accidental use [10-13]. Two recent studies from Bangladesh reported tramadol related intoxication and deaths in infants [14,15]. Here, we report an infant of 1 month 21 days of age with tramadol poisoning who presented with repeated seizures. This report would help to create awareness to keep medicines of children and adult separately and at a safe place at home.

Case history

A one month 21 days old female infant was

admitted to Pediatric department of BIRDEM General Hospital with repeated episodes of convulsions over 2 hours. Each episode of convulsion was manifested as generalized tonic, in nature and rolling of eye balls, that persisted for 1 to 2 minutes and following convulsion she became drowsy. There was no history of fever, vomiting, respiratory distress, head trauma, diarrhea or inadequate feeding before convulsion. She had history of irregular bowel movement. The baby usually passed stool at every 3 or 4 days interval for which mother sometimes used to administer glycerin suppository for bowel movement. On the day of admission, mother administered her tramadol suppository of 100 mg instead of glycerin suppository one hour before starting of convulsion. She was absolutely well and had no history of convulsion before this event. The baby was delivered by lower uterine segment Cesarean section (LUCS) at term with average (2500gm) weight. She had no history of asphyxia, jaundice, convulsion at perinatal period. Developmentally she was age appropriate. On examination the baby was stiff, cyanosed and drowsy, fontanelles were not bulged, anthropomorphically she was age appropriate [length: 54 cm (10th percentile), weight: 3.6 kg (5th percentile), occipital frontal circumference (OFC): 37 cm (25th percentile)]. She was afebrile, bradypnoeic (respiratory rate: 28

*Correspondence: Israt Zahan Ima, Department of Pediatrics, Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM), 1/A Ibrahim Sarani, Segunbagicha, Dhaka, Bangladesh. Email: imaisratzahan@gmail.com

breaths/minute, pattern of respiration was shallow), heart rate was 110 beats/minute, blood pressure was 80/50 mmHg (25th - 50th centile), capillary refilling time (CRT): < 2 second, SpO₂: 78%, capillary blood glucose: 6.8 mmol/L, muscle tone was increased. Other systems revealed normal findings.

Her complete blood count (total and differential), peripheral blood film, liver enzymes, serum electrolyte, random blood glucose and chest X-ray were normal. Arterial blood gas (ABG) report showed respiratory acidosis. The patient was diagnosed as a case of accidental tramadol poisoning.

The baby was managed with oxygen inhalation and injectable phenobarbitone. But after 2 hours, she again developed generalized tonic convulsion followed by apnea. The baby was shifted to intensive care unit and was put into IMV (Intermittent mandatory ventilation) mode of ventilation. A single dose of injection naloxone (0.1 mg/kg/dose) was given intravenously. Gradually, the patient's condition improved. On 5th day she was discharged with advice to come for follow up. On follow up visit, the baby was well and had no neurologic deficit.

Discussion

Food and Drug Administration (FDA) has not approved the use of tramadol in children less than 12 years of age [16]. The recommended therapeutic dose in children is 1-2 mg/kg every 6 hours [1]. In this case, the baby received a tramadol suppository of 100 mg accidentally. Clinical features of tramadol poisoning of this baby were convulsion, apnea, stiffness and cyanosis. A study done at the Pediatrics department of our hospital from 2014 to 2019 recorded decreased level of consciousness (100%), seizure (80%), meiosis (80%) and apnea (50%) as the main clinical features among 10 infants admitted with tramadol poisoning [15]. Another study with 11 infant of tramadol poisoning, observed seizure in 2 (18%) cases, apnea in 2 (18%) cases, shallow respiration in 2 (18%) cases and hypertonicity in 2 (18%) cases [14]. In our case, the baby was given accidentally 100 mg tramadol suppository instead of glycerin

suppository. In the study by Nahar et al, 80% of cases received tramadol suppository accidentally instead glycerin/paracetamol suppositories [15]. Similarly, Rahman et al reported accidental administration of tramadol suppository instead of paracetamol and glycerin suppository in 18% and 82% cases respectively [14]. The study noted that similarities of those suppositories' size, shape and color and keeping the drugs in same container as the causes of mistaken administration of tramadol suppository.

Our case was managed successfully due to early diagnosis, availability of intensive care support and by use of naloxone. Naloxone has been successfully used in the management of 85-100% cases of tramadol intoxication [12,15]. Prolonged apnea or severe respiratory depression in tramadol intoxication needs intubation and mechanical ventilation. Our case required hospitalization for 108 hours. The average duration of hospital stay of such tramadol intoxication cases was between 46 to 89 hours [14,15]. Meticulous history taking, early diagnoses helped us to manage this case promptly.

Conclusion

This case report highlights the occurrence of life threatening repeated episodes of seizures in young infants due to accidental administration of tramadol suppository. Medicines for children of similar packaging and appearance should be kept in separate containers. Parents should be educated about checking the name of medication properly prior to administration to children.

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