

**Mini Review**

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# Pipazethate HCL toxicity: A Mini Review



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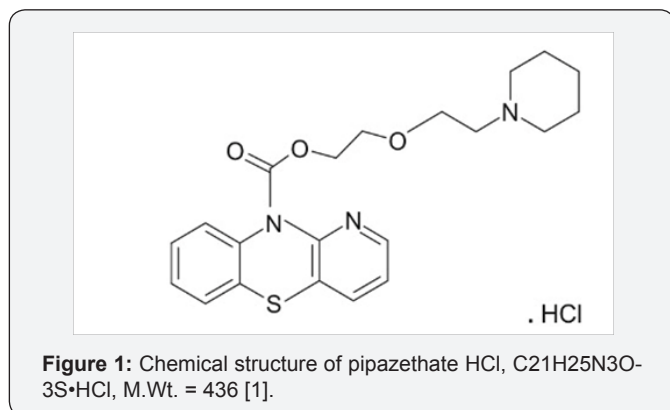
**Abstract**

Pipazethate HCl is a centrally acting non-narcotic antitussive which is rarely used nowadays in developed countries while it is still widely used in developing countries. Drug toxicity is rarely reported in the literature and it includes wide variety of neurological, respiratory and cardiovascular symptoms. The aim of the work was to highlight the manifestations of the toxicity of this drug and to illustrate how to manage them for a better outcome and survival.

**Keywords:** PipazethateHCl; Torsade de pointes

**Introduction**

PipazethateHCl is 2-(2-piperidinoethoxy)ethyl 10H-pyrido [3,2-b] [1,4]benzothiadiazine-10-carboxylate hydrochloride [1]. PipazethateHCl is a non-narcotic oral antitussive agent that acts centrally on the medullary cough centre [2] (Figure 1).



**Side Effects**

Prescription of Pipazethate HCl is commonly associated with mild side effects including drowsiness, nausea, vomiting, restlessness, insomnia and urticaria [3].

**Drug Toxicity**

The main etiology of drug toxicity is related to central depressive effect of the drug [4]. Toxicity of this drug includes a wide variety of symptoms including metabolic neurological, respiratory, and cardiovascular symptoms [5]. Severe metabolic

acidosis, hyperglycemia, glucosuria and hyperkalemia are common laboratory findings [5]. Somnolence, agitation, seizures and more frequently coma are the main neurological manifestations in those patients while respiratory symptoms ranges from Kussmaul breathing to respiratory depression and apnea. Neurological and respiratory manifestations are usually related to the central depressive effect of the drug and subsequently death is usually related to serious hypoxia [4].

While cardiovascular toxic manifestations are usually dysrhythmias with ventricular tachycardia and Torsade de pointes or less frequently bradycardia, they can be explained by the fact that PipazethateHCl has a quinidine-like action which

results prolongation of QT interval and predisposition to cardiac arrhythmias [6].

**Management and Prognosis**

A high index of suspicion is required for prompt diagnosis and urgent management is mandatory to prevent the lethality of the drug [7]. Supportive measures have been used for management of the manifestation of toxicity. Arrhythmic complications were managed successfully using magnesium sulphate or lidocaine infusion [5,8]. Antonio da Silva et al. [5] reported a case previously healthy child who had accidentally ingested an unknown quantity of pipazethate HCl and developed severe acute poisoning with neurologic, metabolic, and cardiovascular disturbances. She recovered with symptomatic and supportive therapy and lidocaine bolus and infusion for 4 hours managing

ventricular tachycardia. Abdelnaby et al. [8] reported a case of accidental ingestion of PipazethateHCl in a 3-years-old child presented with neurological symptoms in the form of somnolence, disturbed sensorium, and respiratory symptoms in the form of respiratory distress and cardiac dysrhythmias in the form of Torsade de pointes. The patient was managed at a critical care unit using supportive measures for neurological symptoms, shock state and respiratory distress. Arrhythmic complications were managed using magnesium sulphate and maintained on lidocaine infusion. After two days under observation, the child was discharged home safely.

Mortality is usually caused by hypoxia due to central respiratory depression or cardiac causes such as ventricular tachycardia, fibrillation and torsade de pointes [4,6]. Bonavita et al. [4] reported a fatality from Pipazethate HCl toxicity in a 32-month-old female baby. Manifested with tonic-clonic seizures, deep coma, and respiratory deficiency and died shortly after due to apnea.

## Conclusion

The use of centrally acting antitussives is markedly decreased nowadays in developed countries, but financial barriers make them still widely prescribed in developing countries. PipazethateHCl toxicity is extremely rare and it is only reported

5 times in the literature hence awareness about its side effects and toxic manifestation can improve the overall survival.

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