



CASE REPORT

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A Case Report on Tolperisone Induced Anaphylactic Reaction

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Introduction: Tolperisone is a centrally acting muscle relaxant commonly used to treat muscle spasticity and pain associated with neurological and orthopedic conditions. While generally well tolerated, rare hypersensitivity reactions, including anaphylaxis, have been documented.

Case Presentation: This case report presents a 54-year-old female with a medical history of hypertension and type 2 diabetes mellitus, who developed generalized weakness, malaise and difficulty performing daily tasks within an hour of taking tolperisone. The patient had experienced a similar episode three weeks prior but did not seek medical attention. After taking another dose of tolperisone, the patient experienced worsening symptoms, including weakness following multiple episodes of loose stools, leading to hospitalization. Laboratory investigations revealed elevated white blood cell count and high blood glucose levels. The diagnosis of anaphylaxis secondary to tolperisone was confirmed, and the patient was treated accordingly. Although tolperisone is known to cause mild side effects like dizziness, fatigue, and gastrointestinal disturbances, severe allergic reactions such as anaphylaxis are rare.

Conclusion: A few cases have been reported in the literature, emphasizing the need for caution in patients with a history of allergies. This case underscores the importance of recognizing and managing hypersensitivity reactions promptly to prevent serious complications and ensure positive patient outcomes.

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Introduction

Tolperisone, a piperidine derivative, belongs to the group of centrally acting muscle relaxants and has been in clinical use now for decades in Europe and Asia. The first synthesis of 1-piperidino-2-Methyl-3-(P-Tolyl)-Propan-3-on was achieved, using cocaine as the starting structure. The first pharmacological experiments, indicating a central action of the drug, were performed. In general, the drug was well tolerated in clinical use, with few or no side effects reported in studies. However, some patients experienced mild adverse effects, such as muscle pain, generalized body weakness, fatigue and dizziness, but these were minor and resolved on their own without needing to discontinue the treatment. Nevertheless, more severe side effects, such as allergic reactions, have been

documented in the literature, though these cases are rare (Quasthoff et al., 2008).

Tolperisone is a spasmolytic drug widely used for acute and chronic pain with spasticity of neurological and orthopedic origin. It is a centrally acting muscle relaxant that stabilizes neuronal membranes by decreasing sodium inflow and the amplitude and frequency of action potentials in voltage dependent calcium channels. It affects mono and poly synaptic reflex transmission through both pre and post synaptic mechanisms, decreasing reticulospinal facilitation and transmitter releases in the brain stem (Lexicomp, 2024). Tolperisone inhibits all dorsal root stimulations evoked ventral root potentials and prevents action potentials from propagation on both myelinated A- and unmyelinated C-



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fibers. The areas of brain (prefrontal cortex, insula, thalamus and secondary somatosensory cortex) involve in pain perception where most affected by tolperisone. without the usual negative effects of centrally acting muscle relaxants, tolperisone hydrochloride is a safe and efficient treatment for excruciating reflex muscle spasms (Tekes K 2014).

Case description

Here we present a case of 54 years old female who was admitted in the tertiary care teaching hospital with the complaints of generalized weakness since morning following loose stools, unable to open the eyes and working. The patient had a medical history of Hypertension and Type 2 diabetes mellitus for which she was on drug Perindopril+Amlodipine (4mg+5mg) and Glimepiride+Metformin (1mg+500mg)

The patient experienced two anaphylactic episodes of increasing severity, all within one hour after the intake of tolperisone. She had experienced the first episode three weeks previously and experienced generalized weakness and malaise within one hour but did not seek medical attention. She took another tablet of tolperisone 2 days before and experienced the generalized weakness following 3 episodes of loose stools, unable to talk, open the eyes or working. The patient was taken to nearby hospital for the first line treatment after which she was referred to tertiary care teaching hospital for further management.

On routine biochemical investigation it showed increased total count: 29810 cells/cumm, Neutrophils: 93 %, HbA1c: >13.5 %, GRBS: 509 mg/dl and 4+ urine sugar. The patient was treated with the following drugs

Table 1: Treatment Chart

DRUG NAME	DOSE	FREQUENCY
Ivf. Normal Saline	500 mL	75ml/hr
Inj. Ciprofloxacin	500 mg	1-0-1
Inj. Metronidazole	100 mL	1-1-1
Inj. Pantoprazole	40 mg	1-0-0
Inj. Ondansetron	4 mg	1-0-1
Inj. Racecadotril	100 mg	1-1-1
Tab. Lactic Acid Bacillus		1-1-1
Inj. Regular Insulin		ACC TO S/S
Inj. Piperacillin+	4.5 gm	1-1-1

Tazobactam

Tab. Perindopril + 4 mg + 5 mg 1-0-0

Amlodipine

Inj. Degludec 0-0-16

Tab. Pioglitazone 15 mg + 1-0-0

+ 2 mg +

Glimepiride + 500 mg

Metformin

Discussion

Tolperisone is a muscle relaxant used in the treatment on various conditions like Sclerosis multiple, post traumatic diseases, cerebrovascular disease and as an adjuvant in extrapyramidal symptoms (post drug parkinsonism) and intensified muscle tone as a response to pain. It is known to reduce stiffness and pain due to tension and contractures of skeletal muscles and for this it is prescribed for transverse striated muscle tension (Chcialowski et al., 2018).

The common adverse reaction associated with the drug tolperisone are Cardiovascular: Hypotension(>5%), palpitations (<5%); Central nervous system: Dizziness (<5%), drowsiness (<5%), headache (<5%), pain (<5%), paresthesia (<5%), vertigo (<5%); Dermatologic: Diaphoresis (<5%), skin rash (<5%), urticaria (<5%); Endocrine & metabolic: Abdominal pain (<5%), constipation (<5%), diarrhea (<5%), dyspepsia (<5%), flatulence (<5%), heartburn (<5%), nausea (<5%), vomiting (<5%), xerostomia (<5%); Neuromuscular & skeletal: Tremor (<5%), weakness (<5%); Cardiovascular: Decreased blood pressure, shock; Central nervous system: Emotional disturbance, fatigue, loss of balance, malaise; Dermatologic: Prurigo, scarring, skin lesion (including scabies and chest sores); Gastrointestinal: Abdominal distress, anorexia, functional gastric bloating, gastrointestinal disease, stomach discomfort; Hepatic: Hepatic disease, hepatic insufficiency; Local: Erythema at injection site, warm sensation at injection site; Neuromuscular & skeletal: Myalgia. <1% there is a chance of Allergic dermatitis, allergic skin reaction, anaphylactic shock, anaphylaxis, angioedema, bloating, confusion, dyspnea, erythema, heartburn, hyperhidrosis, hypersensitivity reaction, pruritus, stomach pain, xerostomia (Lexicomp, 2024).

Very few generalized anaphylactic reaction cases have been published so far. The first instance, which was reported in a Russian Journal in 1974, involved four individuals who were admitted to the hospital after experiencing an anaphylactic reaction within 60 minutes of taking tolperisone (Aleksandrov et al., 1974). A 45-

year-old female was given tolperisone plus Ketoprofen for pain developed dizziness and erythema at first exposure and when she was exposed for the second time, she developed urticaria, dyspnoea, angioneurotic edema and hypotension and even Tolperisone challenge test came positive (Chcialowski et al., 2018). In an article 4 cases of tolperisone induced anaphylactic reaction was discussed where three cases were considered certainly because of tolperisone based on the medical history of patient and it was confirmed by prick-to-prick test (Ribi et al., 2003).

Conclusion

In conclusion this case highlights the potential for tolperisone, a muscle relaxant, to induce a severe anaphylactic reaction, even though such reactions are relatively rare. This case shows the importance of monitoring for hypersensitivity reaction in patients receiving tolperisone particularly with a history of allergies. This drug is used widespread in treating muscle spasms, so prompt recognition and management of anaphylaxis symptoms are crucial for positive patient outcomes.

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Conflict of interest:

The authors declare no conflict of interest.

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References

- Aleksandrov, I.uS., & Danilov, L. N. (1974). Sluchaĭ allergicheskoi reaktsii na midokalm [Case of an allergic reaction to mydocalm]. *Klinicheskai meditsina*, 52(4), 142.
- Chcialowski A, Zakrzewski A, Kruszewski J. (2018). Drug Generalized Hypersensitivity Reactions to Tolperisone (Mydocalm). *Clin Case Rep Ind.*, 2,1036.
- Lexicomp,inc(n.d.).Tolperisone:drug information.UpToDate.Retrieved November 14, 2024, <https://online.lexi.com>
- Quasthoff, S., Möckel, C., Zieglgänsberger, W., & Schreibmayer, W. (2008). Tolperisone: a typical representative of a class of centrally acting muscle relaxants with less sedative side effects. *CNS neuroscience & therapeutics*, 14(2), 107–119. <https://doi.org/10.1111/j.1527-3458.2008.00044.x>
- Ribi, C., Vermeulen, C., & Hauser, C. (2003). Anaphylactic reactions to tolperisone (Mydocalm). *Swiss medical weekly*, 133(25-26), 369–371. <https://doi.org/10.4414/smw.2003.10280>
- Tekes K. (2014). Basic aspects of the pharmacodynamics of tolperisone, a widely applicable centrally acting muscle relaxant. *The open medicinal chemistry journal*, 8, 17–22. <https://doi.org/10.2174/1874104501408010017>