

Dicyclomine as a Potential Treatment Option for Neuropathic Pain in Spinal Cord Injury: A Case Report

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INTRODUCTION

- We present a complex case of spinal cord injury (SCI)-related neuropathic pain (NP), where clinically significant improvement was achieved with the combined use of dicyclomine and gabapentin.
- Dicyclomine, a muscarinic antagonist traditionally used to treat gastrointestinal spasms, also inhibits histamine and bradykinin—mechanisms implicated in analgesia and NP modulation.^{1,2}

CASE PRESENTATION

- 18-year-old female s/p gunshot wounds sustained T3 AIS A paraplegia
- She was admitted to acute rehabilitation with neurogenic bladder and bowel, NP, intermittent nausea and abdominal discomfort, which continued despite an effective neurogenic bowel program.
- Diagnostic studies were unrevealing.
- She was started on dicyclomine 10 mg TID PRN with good effect for truncal and abdominal pain while also receiving treatment with low dose gabapentin for her NP.
- Dicyclomine was discontinued upon resolution of her NP, but her burning pain significantly worsened after cessation.
- Reinstitution of dicyclomine 10 mg TID PRN resulted in pain resolution.
- Upon discharge from acute rehabilitation, her NP remained controlled on this regimen.

RESULTS

- The combination of dicyclomine and gabapentin proved effective and well tolerated in treating this patient's SCI-related NP.

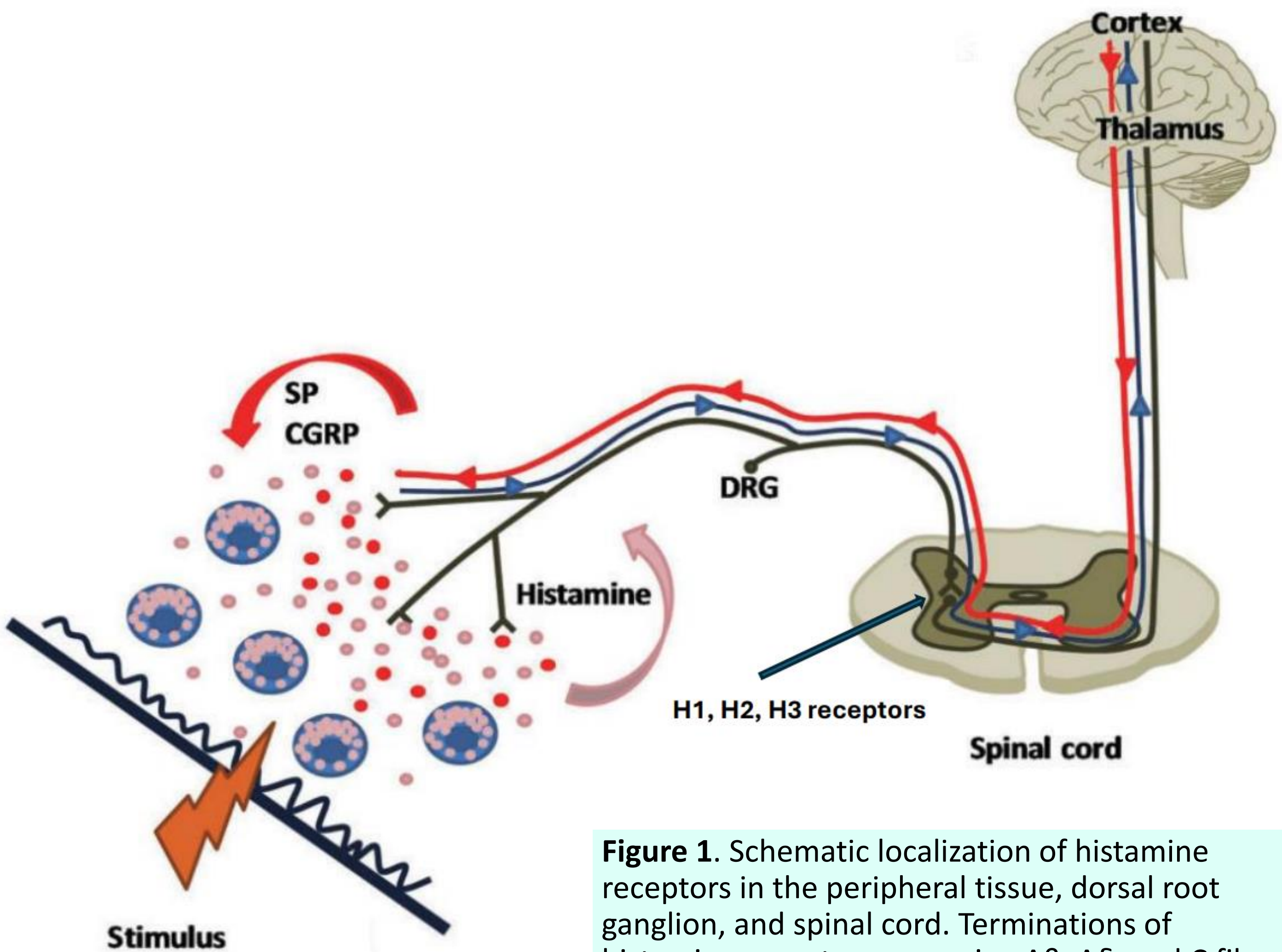


Figure 1. Schematic localization of histamine receptors in the peripheral tissue, dorsal root ganglion, and spinal cord. Terminations of histamine receptor-expressing Aβ, Aδ, and C fiber innervations are shown in the spinal cord.

DICYCLOMINE

Mechanism of Action	Antimuscarinic – a selective M1, M2, M3 antagonist – Cholinergic antagonist at parasympathetic sites in smooth muscle and the CNS Antagonist of smooth muscle bradykinin and histamine
Indication	Treatment of irritable bowel syndrome.
Dosing	Oral: 20 mg up to 4 times daily. May titrate dose up to 40 mg 4 times daily after 1 week based on response and tolerability. Recommend administering as needed; intended for short-term use.
Adverse Effects	Anticholinergic effects (eg, dry mouth, urinary retention, constipation), drowsiness, delirium, and hallucination.

DISCUSSION

- Despite advancements in SCI-related NP management, it remains challenging to treat.
- The multifaceted nature of NP often requires a multimodal approach, combining various pharmacological agents for optimal pain control.
- Dicyclomine may have a role in modulating pain pathways through its antagonistic effects on muscarinic receptors and inhibition of histamine and bradykinin.
- There is emerging evidence to support the involvement of histamine in the modulation of neuropathic pain (Figure 1).³⁻⁵

CONCLUSION

- Dicyclomine may represent a useful adjunctive treatment option for treatment of SCI-related NP.
- Dicyclomine, in combination with gabapentin, can be effective and well tolerated for treatment of NP in an individual with acute traumatic SCI.
- Further studies should be conducted to evaluate the use, dosing, and efficacy of dicyclomine for NP following spinal cord injury.

REFERENCES

