



INTRATHECAL TETANUS IMMUNOGLOBULIN IN SEVERE TETANUS: A CASE SERIES OF ULTRASOUND-GUIDED AND PARAMEDIAN LUMBAR PUNCTURE TECHNIQUES

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ABSTRACT

Background: Tetanus remains a significant cause of morbidity and mortality in resource-limited settings. Intrathecal human tetanus immunoglobulin (HTIG) has been proposed as an adjunctive therapy because tetanus toxin acts within the central nervous system. **Methods:** This prospective case series included 12 adult patients with generalized tetanus admitted to the New Surgical ICU, SMS Medical College, Jaipur, between January and June 2026. Intrathecal HTIG was administered by experienced anaesthetists using either ultrasound-guided or paramedian lumbar puncture techniques. **Results:** Successful lumbar puncture and intrathecal drug administration were achieved in all patients on the first attempt. No procedure-related complications were observed. **Conclusion:** Intrathecal HTIG administration can be safely performed using either ultrasound-guided or paramedian lumbar puncture techniques in patients with severe tetanus.

KEYWORDS : Tetanus; Human Tetanus Immunoglobulin; Intrathecal Therapy; Lumbar Puncture; Ultrasound Guidance; Intensive Care

INTRODUCTION

Tetanus is an acute neurological disorder caused by the neurotoxin produced by *Clostridium tetani*. [1,2] Despite effective vaccination programs, tetanus remains prevalent in many developing regions. Intrathecal administration of human tetanus immunoglobulin has been investigated as an adjunctive treatment because of the central nervous system action of tetanus toxin. [4–7]

METHODS

A prospective observational case series was conducted between January 2026 and June 2026. Twelve adults (>16 years) with generalized tetanus received intrathecal HTIG. Ultrasound-guided or paramedian lumbar puncture techniques were selected according to patient anatomy and positioning constraints. Continuous monitoring was maintained during all procedures.

RESULTS

All 12 procedures were successful on the first attempt. No traumatic taps, neurological deficits, post-dural puncture headaches, infections, bleeding events, or hemodynamic complications were recorded.

DISCUSSION

Intrathecal HTIG may offer therapeutic advantages in severe tetanus. Lumbar puncture can be technically challenging due to rigidity and spasms. Our experience suggests that both ultrasound-guided and paramedian approaches can be performed safely by trained anaesthetists. [8–12]

CONCLUSION

Both ultrasound-guided and paramedian lumbar puncture techniques demonstrated excellent procedural success and safety for intrathecal HTIG administration in severe tetanus.

Declarations

Patient consent was obtained from attendants prior to the procedure.

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Conflict of Interest: The authors declare no conflict of interest.

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