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**A COMPARATIVE STUDY OF ATRACURIUM VERSUS CISATRACURIUM REGARDING ONSET TIME, INTUBATING CONDITIONS, EASE OF LARYNGOSCOPY AND HEMODYNAMIC PARAMETERS IN PATIENTS UNDERGOING GENERAL ANAESTHESIA****Anaesthesiology**

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ABSTRACT

Background: Neuromuscular blocking agents (NMBAs) like atracurium and cisatracurium are essential for optimal intubating conditions during general anaesthesia. Atracurium may cause histamine release and cardiovascular changes, whereas cisatracurium offers stable pharmacodynamics with fewer side effects. This study compared both agents regarding onset time, intubating conditions, ease of laryngoscopy, hemodynamic parameters, and adverse effects. **Methods:** In this prospective, randomized, double-blind study, 100 ASA I–II adult patients undergoing elective surgeries were allocated into two groups: Group I (atracurium 0.5 mg/kg IV) and Group II (cisatracurium 0.2 mg/kg IV). Standard anaesthetic techniques and Train-of-Four neuromuscular monitoring were used. Recorded parameters included onset time, Cooper's intubating score, Cormack-Lehane grade, hemodynamic changes, and adverse reactions. **Results:** Cisatracurium had significantly faster onset and longer duration of action than atracurium ($p < 0.001$). Intubating conditions and ease of laryngoscopy were similar. Hemodynamic stability was better in the cisatracurium group. No significant adverse effects or histamine reactions occurred in either group. **Conclusion:** Cisatracurium provides superior hemodynamic stability, faster onset, and longer duration compared to atracurium, with comparable intubating conditions, making it preferable in patients with cardiovascular concerns.

KEYWORDS

Atracurium, Cisatracurium, Neuromuscular Blocking Agents.

INTRODUCTION:

Atracurium and cisatracurium are intermediate-acting non-depolarizing neuromuscular blocking agents (NMBAs) widely used in general anaesthesia. Cisatracurium, a stereoisomer of atracurium, is associated with greater potency, less histamine release, and improved cardiovascular stability.

MATERIAL & METHODS:

In this prospective, randomized, double-blind study, 100 ASA I–II adults undergoing elective surgery under general anaesthesia were allocated to receive atracurium 0.5 mg/kg IV (Group I) or cisatracurium 0.2 mg/kg IV (Group II). Neuromuscular function was monitored using Train-of-Four (TOF) stimulation. Parameters recorded included onset time, Cooper's intubating score, Cormack–Lehane grade, duration of action, hemodynamic changes, and adverse effects.

RESULTS:

Demographics were comparable. Cisatracurium demonstrated significantly faster onset and longer duration of action than atracurium ($p < 0.001$). Intubating conditions and ease of laryngoscopy were similar. Hemodynamic stability was superior in the cisatracurium group. No significant adverse effects or histamine-mediated reactions were noted in either group.

DISCUSSION:

Both atracurium and cisatracurium provided good intubating conditions and ease of laryngoscopy. Cisatracurium had faster onset, longer duration, and better hemodynamic stability, likely due to higher potency and minimal histamine release. Findings are consistent with earlier studies. No significant adverse effects occurred. Cisatracurium may be preferred in patients with cardiovascular risk.

CONCLUSION:

Cisatracurium provides faster onset, prolonged duration, and greater hemodynamic stability compared to atracurium, with equivalent intubating conditions. It may be preferred in patients with cardiovascular risk undergoing general anaesthesia.

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