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Title: HISTAMINE RELEASE FOLLOWING ATRACURIUM IN THE ELDERLY.
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The histamine releasing property of atracurium seems to vary between children, adolescents and adults, but no evaluation has been done in the elderly.^{1,2,3} This study evaluates histamine release and cardiovascular and cutaneous sequelae following atracurium administration in patients older than 65 y.

Methods: With the approval of the Human Studies Committee, 15 patients ASA I or II, not receiving anti-histaminics were evaluated. Samples were taken through a dedicated cannula from the opposite arm to the intravenous infusion. Samples were taken prior to induction by 3 - 6 mg/kg thiopental, following induction, and at two and five minutes following the administration of atracurium (0.6 mg/kg) over 30 seconds. Blood pressure and pulse rate (PR) were measured non-invasively (Dinamap^R) at one minute intervals from prior to induction until six minutes after atracurium. Skin manifestations were sought and recorded. The blood samples were drawn in heparinized syringes, placed on ice, centrifuged and assayed radioenzymatically using histamine N-methyl transferase. Statistical analysis was the t test and Pearson's correlation coefficient.

Results: Cutaneous signs of histamine release were present in seven patients (46%) and absent in eight (54%). Plasma histamine concentration increased significantly (P = 0.05) at two minutes following atracurium and returned towards baseline values at five minutes (Table). A significant decrease (P = 0.0026) in mean arterial pressure (MAP) occurred during the five minutes following atracurium administration (Table).

	Histamine Levels (pg/ml)	MAP (mm Hg)	Heart Rate (beats/min)
Pre-induction	370(55)	99(4.5)	75(3.5)
Post-induction	382(39)	96(4.2)	77(3.1)
Post-atracurium (2 min)	1301(535)	84(4.3)*	73(3.9)*
Post-atracurium (5 min)	844(230)		

Values are mean (± SE).

* Represents the greatest change in MAP or PR.

Discussion: Histamine release following atracurium in elderly patients appears to be greater than that in children¹ and rather similar to adolescents², but is less consistent than in non-elderly adults.³ No significant association was found between cutaneous signs, cardiovascular changes or plasma histamine concentration in the elderly.

References:

1. Brit J Anaesth 58:1229-33, 1986.
2. Anesth Analg 70:S133, 1990.
3. Brit J Anaesth 57:550-3, 1985.

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Title : SUCCINYLCHOLINE ENHANCES THE RECOVERY FROM ATRACURIUM INDUCED PARALYSIS
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INTRODUCTION The elimination of atracurium in the body takes place outside the neuromuscular junction. We postulated that if atracurium can be temporarily displaced from the neuromuscular junction that the process of decomposition of atracurium will be accelerated and thus enhance the recovery from paralysis. This study was undertaken to determine the effect of a small dose of succinylcholine on atracurium induced paralysis.

METHODS The protocol was approved by the institutional review board and informed consents were obtained. Twenty patients were anesthetised with propofol 1-2 mg/kg and maintained on propofol infusion of 100 ug/kg/min, nitrous oxide 60% and incremental doses of narcotics. Tracheal intubation was facilitated with atracurium 20 mg IV. A Datex NMT-221 integrated EMG monitor interfaced to a computer was used to record and display the train of four responses. Intermittent doses of atracurium 5 mg was used to keep the patient paralysed. When reversal of paralysis is desired, succinylcholine 40 mg IV was given and EMG responses were monitored until the end of the procedure.

RESULTS In all cases the administration of succinylcholine caused both T1 and T4 to rise sharply, resembling that of reversal by edrophonium. The enhanced recovery was sustained long after succinylcholine had worn off. A typical train of four responses is shown in the graph below.

DISCUSSION Our data suggests that one of the major rate limiting steps in the decomposition of atracurium is that of dissociation from the neuromuscular junction. In situations where reversal of atracurium induced paralysis with an anti-cholinesterase along with anti-cholinergics is contra-indicated, succinylcholine may be an unorthodox but useful alternative.

Sux Reversal of Atracurium

