Atracurium in Normal Doses May Release Histamine

To the Editor:—I read with interest the report by Sokoll et al. regarding their experience with the nondepolarizing muscle relaxant, atracurium (BW 33A). I was surprised to find that none of their patients showed any signs of histamine release following injection of atracurium.

In clinical practice I have used atracurium in a series of 20 A.S.A. class 1 patients, ages 20–50 years, undergoing low-risk gynecologic surgery. Premedication consisted of meperidine, 50 mg, and atropine, 0.6 mg, given one hour prior to surgery. Anesthesia was induced with thiopental, 5 mg/kg, and neuromuscular blockade was achieved with atracurium, 0.4–0.5 mg/kg. Both agents were injected via an indwelling needle in the dorsum of the hand, care being taken to flush the needle between drugs. Anesthesia was maintained with a mixture of nitrous oxide, oxygen, and halothane 0.5%.

In this series, over 50% of the patients were noted to have an urticarial “histamine-like” reaction extending up the forearm along the path of the injected atracurium. Ten per cent of the patients had short-lived erythematous reaction involving the head, upper trunk, and arms, which was not associated with any significant hypotension. One patient had a moderate but self-limiting episode of bronchospasm.

From these observations it would appear that atracurium does have the ability to release histamine. I suspect the marked difference in incidence of histamine release between these two series is a reflection of the different modes of drug administration. In their series, Sokoll et al. injected atracurium into an indwelling catheter that was flushed by a presumably fast running infusion; this would have the effect of rapidly increasing the pH of the acid (pH 3.5) atracurium. In my series there would not have been such a rapid increase in pH, and therefore I suggest that the histamine release may be a pH-related phenomenon.

I conclude that atracurium may release histamine in clinically significant amounts with normal paralyzing doses and suggest that this may be related to the technique of injection.

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Computer Network for Program and Data Exchange

Microcomputer hardware is now becoming plentiful and cheap. However, software, programs that make use of the hardware, presents a threefold problem: 1) There is little software that does exactly what the user needs. 2) It is possible to hire a programmer to write your software; however, this is expensive and often frustrating because of the frequent lack of communication between the programmer and user. 3) You can write your own programs but this is very time-consuming and the end result is always in question.

There is a large quantity of software being written by anesthesiologists, but, until now, there has been no framework available for program exchange. We would like to point out that the American Association for Medical Systems and Informatics (AAMSI) now provides such a framework through its Professional Specialty Group on Anesthesiology Information Support Systems (PSG-37). AAMSI is a non-profit organization dedicated to the development and implementation of computer systems to support patient care, teaching, research, and health administration. AAMSI sponsors two on-line telecommunications services that provide a means for information exchange, electronic mail, and software exchange.

On The Source, the AAMSI Special Services Network: 1) publishes an on-line newsletter, the AAMSI News (also available in hardcopy format); 2) provides a means of contacting others with an interest in anesthesiology; and 3) contains a small software library available for downloading to your personal computer. By contacting Dr. Douglas R. Mackintosh (Source ID: TCP230), the