where n is the sample size and p is the level of credibility, *i.e.*, if 95% confidence is required, then p = 0.05.[2] If n = 8 and p = 0.05 as used by Sears, the maximum risk for significant bradydysrhythmias in a very large group of similar patients is actually 31%. Since bradydysrhythmias are undesirable and the true incidence could be as high as 31% based on Sears' study, we believe their conclusion would be more correctly stated that the incidence of bradydysrhythmias with a second dose of succinylcholine after a ketamine induction is (with 95% confidence) no higher than 31%.

When n is greater than 30, the computation is considerably simplified, and is referred to as the rule of 3.[3] When p = 0.05, "if none of n patients shows the event about which we are concerned, we can be 95% confident that the chance of this event is at most 3 in n, (*i.e.*, 3/n)."[2] Thus, if Sears *et al.* had observed zero incidence in 50 subjects, they could have predicted the maximum incidence to be no higher than 6% (3/50) in a similar but large group.

When negative results are reported, the author should be careful about extrapolating results to the universe of patients as a whole.

DAVID J. BENEFIEL, M.D.
Director of Cardiovascular Anesthesia

EDWARD A. EISLER, M.D.
Director of Obstetrical Anesthesia

RODGER SHEPHERD, M.D., M.P.H.
Department of Epidemiology

Pacific Presbyterian Medical Center
Clay at Buchanan Street
San Francisco, California 94120

REFERENCES

1. Sears SH, Abdul-Rasool IH, Katz RL: The effect of a second dose of succinylcholine on cardiac rate and rhythm following induction of anesthesia with ketamine. ANESTHESIOLOGY 68:644, 1988
2. Hanley JA, Lippman-Hand A: If nothing goes wrong, is everything all right? JAMA 249:1743–1745, 1983
3. Rumke CL: Implications of the statement: No side effects were observed. N Engl J Med 292:372–373, 1975

(Accepted for publication September 14, 1988.)

Anesthesiology
70:161, 1989

In Reply:—We agree with Benefiel *et al.* that our statement "the administration of a second dose of succinylcholine to healthy adult patients after induction with ketamine is safe with respect to cardiac rate and rhythm" may be too strong if only statistical analysis is considered. However, in clinical situations, other factors, such as patient's physical status, the pharmacological properties of the drug, or combination of drugs, must also be considered in the clinical conclusion of a particular study. In our study,[1] although the number is small (n = 8), we believe that our conclusion may not be too strong. This conclusion is not only based on the statistical analysis but also on the physical status of the patients (healthy adults) and on the pharmacodynamic property of ketamine as a drug with a sympathomimetic effect.[2]

The practical problem is the number of patients one should study before concluding that a technique is safe or dangerous. Based on our study, we feel it is appropriate to continue to use a second dose of succinylcholine after ketamine where required and continue to observe the patient response. If any serious side effects are encountered, we will of course report them. Thus far we still have not seen any problems with a second dose of succinylcholine in patients who received ketamine.

IMAD H. ABDUL-RASOOL, M.D., PH.D.
Assistant Professor of Anesthesiology

DANIEL H. SEARS, M.D.
Staff Anesthesiologist

RONALD L. KATZ, M.D.
Professor of Anesthesiology and Chairman of Anesthesiology

UCLA School of Medicine
10833 LeConte Avenue
Los Angeles, California 90024-1778

REFERENCES

1. Sears DH, Abdul-Rasool IH, Katz RL: The effect of a second dose of succinylcholine on cardiac rate and rhythm following induction of anesthesia with ketamine. ANESTHESIOLOGY 68:144, 1988
2. White PF, Way WL, Trevor AJ: Ketamine—Its pharmacology and therapeutic uses. ANESTHESIOLOGY 56:119–136, 1982

(Accepted for publication September 23, 1988.)

Anesthesiology
70:161–162, 1989

Succinylcholine and Trismus

To the Editor:—The recent publication of various articles and letters to the editor about succinylcholine and trismus has resulted in a reevaluation of the use of succinylcholine and a reassessment of our clinical practice when trismus occurs after the administration of succinylcholine.[1–4] The major problem in this whole issue centers around the clinical judgment issue of what constitutes trismus. Unfortunately, Dorland's *Medical Dictionary* does not clarify the issue, nor is it clarified in any of the papers that have been written. The reason is that it is a clinical judgment call with a broad spectrum of possibilities. At one end of the spectrum, the masseter muscle tone may be so increased that there is a complete inability to open the mouth. At the other end of the spectrum, there may be a mild increase in muscle tone that can be easily overcome. Van Der Spek has certainly thrown an entirely different light on the issue of succinylcholine and "trismus," with the finding