

Zeitschrift: Bulletin der Schweizerischen Akademie der Medizinischen Wissenschaften = Bulletin de l'Académie suisse des sciences médicales = Bollettino dell' Accademia svizzera delle scienze mediche

Herausgeber: Schweizerische Akademie der Medizinischen Wissenschaften

Band: 23 (1967)

Titelseiten

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 20.08.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

KLINISCHER TEIL
PARTIE CLINIQUE
CLINICAL PART

D.C.: 617.089.5:615.785.3

From the Division of Anesthesiology, Montefiore Hospital and Medical Center and the Department of Albert Einstein College of Medicine, New York

The Clinical Use of Muscle Relaxants

FRANCIS F. FOLDES, M. D.

Relaxants have been in clinical use for almost a quarter of a century. During this time significant advances were made in the understanding of the anatomy of the neuromuscular junction (n.m.j.)¹, the physiology of the transmission process, the mode of action of neuromuscular blocking agents (n.m.b.a.) and the various factors which influence the action of these agents at the n.m.j.

These developments necessitated the revision of some of the concepts of the clinical use of relaxants. As in other fields of medicine, however, there has been a considerable time lag between the availability of scientific information and its application to clinical practice.

The purpose of this presentation is to attempt to bridge this gap and to consider, on the basis of presently available experimental data and clinical experience, the rational use of n.m.b.a. and their antagonists.

Depending on their chemical structure, the clinically used quaternary ammonium-type n.m.b.a. have been divided into two groups [4] (Fig. 1). The first group consists of the relatively bulky pachycurares which were assumed to interfere with the depolarization phase of n.m. transmission and to produce a non-depolarization block. These agents were also called non-depolarizing or antidepolarizing relaxants [17]. The second group consists of the less-bulky leptocurares which are structurally more similar to acetylcholine than the pachycurares. These compounds produce a prolonged depolarization of the post junctional membrane, interfere with the repolarization phase of n.m. transmission, and are usually referred to as depolarizing relaxants [49]. It was assumed that acetylcholine and the non-depolarizing and depolarizing n.m.b.a. all act at the same receptor sites [17, 49].

Further studies, however, revealed that the mode of action of the leptocurares is more complex. It was shown by THESLEFF [55, 58] that despite the continued presence of the depolarizing agents at the n.m.j. and the persistence of the n.m. block, the postjunctional membrane becomes repolarized and, at the same time, loses its sensitivity to acetylcholine and other

¹ The following abbreviations will be used in the text: neuromuscular (n.m.); neuromuscular blocking agents (n.m.b.a.); neuromuscular junction (n.m.j.).