

Lack of Neuromuscular Blocking Activity of Some New Antibiotics

Sir:

A number of instances of severe respiratory depression following the intraperitoneal administration of neomycin sulfate or streptomycin sulfate during surgery have been reported. Severe reactions have resulted, but most patients survived after prolonged care involving artificial ventilation (1-3). The mechanism of this pronounced and profound respiratory depression has been shown to be due to neuromuscular blockade. Nine different antibiotics have demonstrated neuromuscular blocking activity when evaluated on the rabbit sciatic nerve-gastrocnemius muscle preparation. These are neomycin, streptomycin, dihydrostreptomycin, polymyxin A, polymyxin B, kanamycin, colistin, viomycin, and paromomycin. Oleandomycin, penicillin G, bacitracin, tetracycline HCl, ristocetin, erythromycin, tyrothricin, vancomycin, and sodium colistin methanesulfonate have been shown to be inactive in this regard (4-7).

This communication reports the lack of neuromuscular blocking properties of chloramphenicol and several newer antibiotics. All drugs were evaluated at a dose of 100 mg./Kg. in three different rabbits using the sciatic nerve-gastrocnemius muscle preparation. This preparation

and the parameters used have been previously described (4, 8). D-Tubocurarine chloride (100 mcg./Kg.) was also used in this preparation as a control at the end of each experiment. The antibiotics involved in this report which showed a lack of neuromuscular blocking activity were sodium nafcillin,¹ sodium methicillin,² lincomycin,³ chloramphenicol,⁴ sodium cephalothin,⁵ and sodium novobiocin.⁶

An awareness of the neuromuscular blocking action (or lack of it) of various antibiotics will help to prevent further instances of adverse drug effect.

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¹ Marketed as Unipen.

² Marketed as Dimocillin.

³ Marketed as Lincocin.

⁴ Marketed as Chloromycetin.

⁵ Marketed as Keflin.

⁶ Marketed as Albamycin.