POSTER SESSION IX

A808

TITLE: SUCCINYLCHOLINE DOSE-RESPONSE IN HYPERPARATHYROIDISM

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Introduction: The calcium ion plays an important role in neuromuscular (NM) transmission. Having observed that a reduction in action potential amplitude in human voluntary muscle was associated with a decrease in induced tibialis anterior muscle strength, we felt that this could be what is happening in the rat. We postulated that the difference between the rat and human might be in the degree of protective action of the peripheral NM system, which in the rat is less effective than in the human. In addition, we felt that the rat might be a better model than the human for the study of this phenomenon. We therefore conducted a study to determine the effect of succinylcholine (SCH) on the rat tibialis anterior muscle.

Methods: Male Sprague-Dawley rats were anesthetized with sodium pentobarbital and the tibialis anterior muscle was exposed. The muscle was suspended in a bath of Tyrode's solution and the motor nerve was stimulated via a Grass S48 stimulator. The twitch responses were recorded and analyzed. The results were compared to those obtained from human volunteers.

Results: The results showed a significant difference in the twitch response between the rat and the human. The twitch response in the rat was significantly lower than in the human, indicating that the rat may be a better model for the study of this phenomenon.

Conclusions: The results of this study suggest that succinylcholine may have a different effect on the rat tibialis anterior muscle than on the human. Further studies are needed to confirm these findings.

References: