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**“ADEQUACY OF REVERSAL OF NEUROMUSCULAR BLOCKADE
WITH OR WITHOUT TRAIN-OF-FOUR MONITORING: A
RANDOMIZED PROSPECTIVE OBSERVATIONAL STUDY”**

By

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ABSTRACT

Title: Adequacy of reversal of neuromuscular blockade with or without train-of-four monitoring: a randomized prospective observational study.

Background and Aims: Adequate reversal of neuromuscular blockade [NMB] is essential when using muscle relaxants to avoid residual paralysis postoperatively. Reversal can be achieved using clinical parameters or alternatively by Train-of-four [TOF] monitoring. We evaluated adequacy of successful NMB reversal by clinical parameters compared to using TOF monitoring. Also, we noted the incidence and complications associated with residual paralysis between the two groups.

Methodology: It was hospital based randomized prospective observational study, consisting of 120 subjects divided into two groups, aged 18–60 years of either sex with ASA physical status 1 & 2 undergoing elective surgery under general anesthesia requiring intubation. Extubation was achieved in Group C using clinical parameters and in Group T using TOF monitoring. T-test was used to compare the difference between the groups. Chi-square test was done for contingency data. p-value less than or equal to 0.05($p \leq 0.05$) indicates statistical significance.

Results: 5 patients in Group C had residual paralysis whereas none in Group T. Reversal-extubation time(minutes) in Group C [5.9 ± 2.2 , 5.4 (2-15.2)] Group T [6.6 ± 1.9 , 6.24 (3.3-12.2)] ($p=0.07$), TOF value at the time of extubation in Group C [72.1 ± 11.6 , 72 (41-91)], Group T [72.75 ± 2.74 , 72 (70-79)] ($P=0.69$). TOF value after 10 minutes of extubation in Group C [92.5 ± 7.1 , 94(66-100)] Group T [95.6 ± 2.7 , 96 (90-100)] ($p=0.006$).

Conclusion: TOF monitoring is better compared to clinical parameters-based reversal strategy in reducing the incidence of residual paralysis and resulting complications whenever neuromuscular blocking agents [NMBAs] are used. Hence it is desirable to use neuromuscular monitoring with the use of NMBAs.

Key words: neuromuscular blockade, residual paralysis, TOF monitoring