

Original Paper

Evaluation of the diaphragmatic myopathy onset time among mechanically ventilated patients

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Abstract

Background and Objective: Critical illness diaphragmatic neuromyopathy are significant causes of weakness, morbidity and prolong mechanical ventilation among critically ill patients under mechanical ventilation. It is important determine the true initial time of neuromyopathic changes associated with critically ventilated patients. Based on new electrodiagnostic studies, electrophysiological studies of diaphragm and phrenic nerve, as an important muscle and nerve in ventilation, compared with other evaluating methods, have specific importance. This study was done to evaluate of the diaphragmatic myopathy onset time among mechanically ventilated patients using electrophysiological method.

Materials and Methods: This descriptive study was performed on 56 mechanically ventilated patients in intensive care unit without primary neuromuscular disease in Tabriz Imam Khomeini hospital in West of Iran between 2004-06 years. Electromyography (EMG) and nerve conduction velocity test were performed in the 4th and then in 4 days intervals.

Results: In 56 patients EMG and NCV performed at 4 and 8 days after mechanical ventilation, none of them had any evidence in favor of diaphragmatic myopathy. During the course of study, EMG were done on 24 patients in 12th days, that in three of them (12.5%), mild myopathy were reported. From 18 patients, considered in 16th days, only five (31.25%) of them showed mild myopathy. From 10 (100%) reminder patients, in 20th day, all of them had mild to moderate myopathy.

Conclusion: According to these results, minimum duration of the diaphragmatic weakness onset time in mechanically ventilated patients with diverse causes in general critical care ward were 12 days and increased with prolonged time of mechanical ventilation.

Keywords: Diaphragmatic neuromyopathy, Diaphragm muscle, Electromyography, Mechanical ventilation, nerve conduction velocity

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