Original Article

The National Institutes of Health Stroke Scale score—a valuable stroke scale used in emergency in predicting the need for mechanical ventilation and outcome in patients of acute ischemic stroke

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Background: Stroke is the third leading cause of death in developed countries and the leading cause of long term disability. Up to 10% of patients with acute stroke need mechanical ventilation (MV) due to different reasons. Identification of early markers associated with poor outcome appears to be of major importance in helping to provide the most appropriate management in stroke patients. The present study has the objective of determining the predictor accuracy of the National Institutes of Health Stroke Scale (NIHSS) score for the requirement of support of MV in patients with acute stroke and evaluating the outcome of patients who require ventilator support.

Methods: The aim of the study was to determine the predictor accuracy of NIHSS score in determining the requirement for MV and outcome of patients of acute ischemic stroke. This prospective cohort study was carried out in Max Superspeciality Hospital Saket in New Delhi over a period of one and half years. Patients with acute stroke, defined as the presence of sudden onset of focal neurological deficit and admitted within 24 h of onset of symptoms, with age ≥18 years were included in the study. The patients who were already on ventilator support at the time of admission were excluded from the study.

Results: Out of 139 patients of acute ischemic stroke and venous stroke, 32 patients were put on the mechanical ventilator. In case of ischemic stroke patients who required MV 21 (65.6%) were having NIHSS score between 6 and 13, 10 (31.3%) patients were having NIHSS score of ≥14 and only one (3.1%) was having NIHSS score of ≤5. We found the predictor accuracy of NIHSS score of about 82.7% in determining the need for ventilation support.

Conclusions: NIHSS score was found to have predictor accuracy of 82.7% in determining the need for MV. Mortality rate was shown to be increased with increase in the NIHSS score.

Keywords: The National Institutes of Health Stroke Scale (NIHSS) score; mechanical ventilation (MV); predictor accuracy; favorable; Modified Rankin Scale (MRS); mortality