

Screening Dysphagia in Acute Stroke

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ABSTRACT:

Background and Objectives: Stroke is usually associated with swallowing difficulties. Some other difficulties along with dysphagia after stroke are dehydration, pneumonia, malnutrition and even death. Thereby the fundamental objectives of this research is to evaluate the severity of dysphagia with the help of “Mann Assessment of Swallowing Ability” a screening tool used for stroke patients.

Methodology: In the methodology part of the study, this is an observational study. In this study 60 subjects admitted in an acute hospital with stroke were involved. The age of those subjects were between 20 years to 75 years.

Results: The study revealed that 80% of individuals had ischemic stroke. Remaining 15% were affected by hemorrhagic stroke and the other 5% had hematoma. When all the data is in, the MASA shows that 48% of patients have mild dysphagia without any aspiration, while 30% of stroke patients have dysphagia with aspiration. A total of 11% of the subjects had mild dysphagia with the risk of aspiration, 7% had moderate dysphagia with the risk of aspiration, and 4% had chronic aspiration risk.

Conclusion: From this study, it can be concluded that , early intervention for swallowing difficulties is possible with screening for dysphagia immediately with acute stroke. Identification of dysphagia at the earlier phase can effectively decrease the length of hospital stay and in turn minimize the treatment cost for treating aspiration pneumonia.

INTRODUCTION:

There are nearly about 27% to 64% of patients who experience dysphagia due to stroke , which is one of the most common symptom due to weakness of oral and pharyngeal muscles to coordinate safe swallow. After the surviving stroke the actual incident goes upto 50% [1,2]. Mostly oropharyngeal dysphagia improve spontaneously within 2 weeks of acute

stroke. With oropharyngeal dysphagia, there is at least three times more risk factors of occurring pneumonia. Stroke survivors had a 22%-52% higher chance of developing pneumonia than the general population. Patients with stroke and aspiration pneumonia had a mortality risk three times higher than stroke patients without aspiration pneumonia. Swallowing, a sophisticated behaviour regulated by both the brain and the rest of the nervous system, is a good example. Another important reaction is swallowing, which is under brainstem control. The time it takes to raise the larynx, relax the muscle at the top of the oesophagus, and release one's breath will change based on the shape and size of the bolus (volume and viscosity). Therefore, swallowing can be taken as a synchronising and continuous event after its initiation. Stroke can be a major factor that affect the level of swallowing through the feedback loop, in that case recovery can be highly based on the cortical involvement [6].

The aging contributes to increasing severity of dysphagia as some elderly individuals have presbyphagia and those individuals have 70% high chances of being affected more with stroke [7,8]. In recent years, the after stroke dysphagia is still untreated and underdiagnosed throughout the globe. In that case, it can be observed that most of the elderly patients do not receive the proper care after stroke.

Swallowing training, speech and language therapy, food modification, and the use of swallowing manoeuvres are all potential treatments for dysphagia following a stroke [11].

The protocols for "Formal dysphagia screening" can reduce the rates of pneumonia and the rates varies from "5.4 to 2.4%" following stroke[12]. So, managing guidelines for dysphagia, developed by the "Heart and Stroke Foundation of Ontario (HSFO)", emphasize that every selected patients with severe stroke need to be kept 'nil by mouth' (NPO), that also include different medications until the establishment of patients swallowing safety.

As per the guidelines, the ability to swallow medicines by the patients can be identified by using the screening tool after the alertness level of patients improve with acute stroke. The aim of current study was to analyze different type of dysphagia and its severity after utilization of "Mann Assessment of Swallowing Ability (MASA)" screening equipment across multiple type of specific sites of stroke of brain infarct.

METHODOLOGY:

Subjects and study period

Between "January and October 2017," sixty inpatients were recruited for the study, all of them were diagnosed with either acute or chronic stroke. Participants' ages ranged from twenty to seventy-five years.

All 24 of the MASA's subtests for detecting dysphagia in stroke patients have been shown to be both valid and reliable. The whole administration of a MASA test rarely exceeds half an

hour. This device is useful for assessing the severity of dysphagia. The severity of dysphagia can be categorised into four groups: normal, mild, moderate, and severe, as well as with or without an aspiration risk.

RESULTS:

According to the findings, eighty percent of stroke victims were qualified to take part in the study as volunteers. Hematomas were found in 5% of the people who participated in the study as a result of having a stroke, with ischemic stroke accounting for 85% of all stroke cases. Using the MASA test, we found that roughly 50% of subjects had mild to moderate dysphagia without aspiration, 33% had mild to moderate dysphagia with aspiration, 11% had moderate dysphagia with "mild aspiration," 7% had moderate dysphagia with "moderate aspiration risk," and 4% had chronic aspiration risk.

The site of dysphagia was represented in Figure 1.

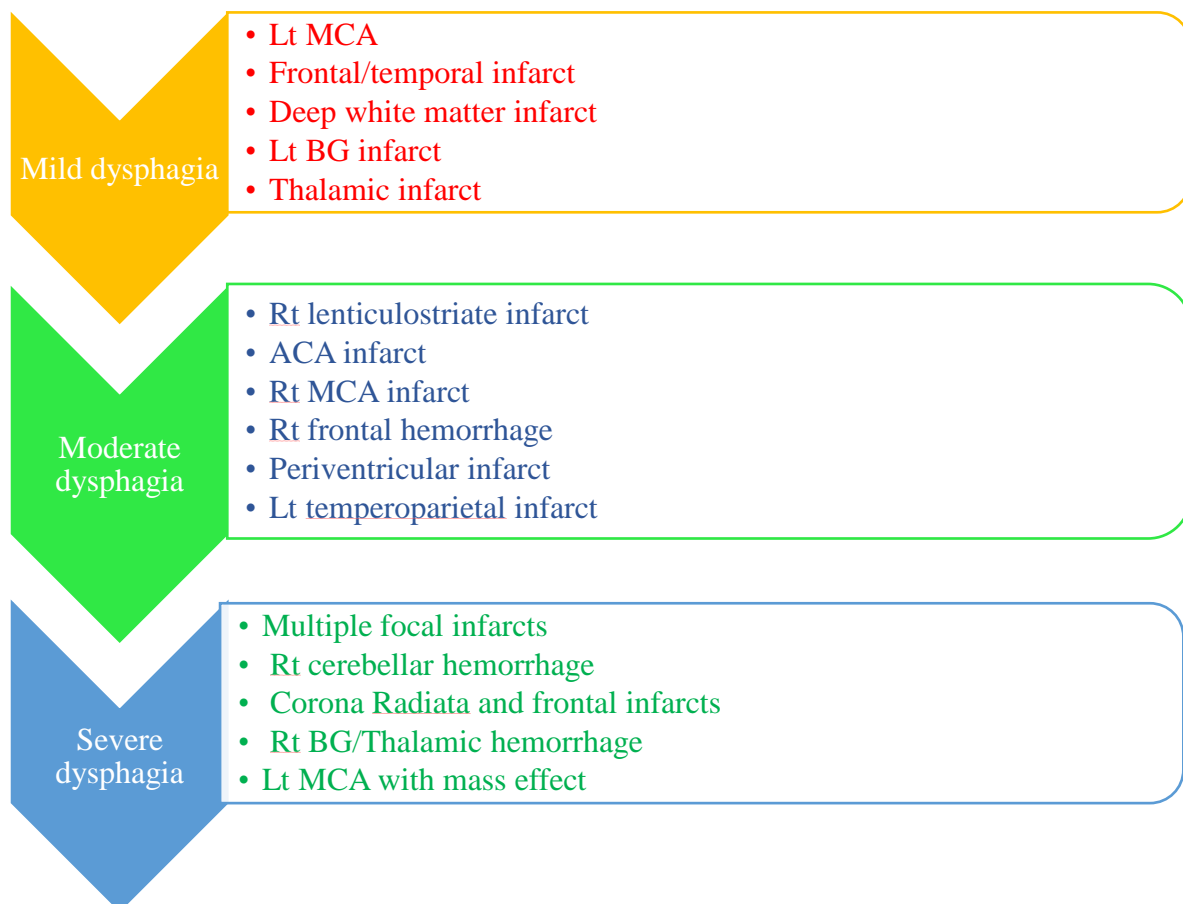


Figure-1: “depicts specific analysis to site of brain infarct following stroke and severity of dysphagia identified based on MASA scoring”

DISCUSSION:

Dysphagia has been connected with alternation in the region of "lacunar infarcts and periventricular white matter ischemia" [14], even in the absence of other symptoms of neurological disease. Lesions in the "periventricular white matter" were found in nearly all of the individuals who were at risk for aspiration [15]. It has been proven that patients who have been diagnosed with haemorrhagic stroke are more likely to experience major difficulty with swallowing than people who have been diagnosed with ischemic stroke. It is usual for people who have been diagnosed with "frontal brain infarct" to suffer from chronic dysphagia and to make a gradual but consistent recovery from their illness. This is because the condition affects the frontal lobes of the brain. At the bedside, the Modified Aspiration Safety Assessment (MASA) test is a useful instrument for assessing stroke patients' risk of aspiration and the impact that dysphagia has on their day-to-day lives [16-18]. The MASA instrument contains a battery of subtests designed to measure "alertness, collaboration, and auditory comprehension," all of which have been connected to cognitive health. These subtests come after the portions that examine swallowing. Because they are more likely to have an affected score on the MASA tool's evaluation items for cognitive function, patients with cognitive linguistic impairment are at a greater risk of having more severe dysphagia symptoms and a higher risk of aspiration, as was mentioned previously. This is due to the fact that they are more likely to have difficulty understanding what is being said to them (total scores of 30). As a result, the findings of this study indicate that individuals who have a diminished cognitive function are associated with high sensitivity but low specificity. According to the findings of our research, 48% of subjects experienced mild dysphagia without aspiration, 30% of subjects experienced mild dysphagia with aspiration, 11% of subjects experienced moderate dysphagia with mild aspiration, 7% of subjects experienced moderate dysphagia with moderate aspiration risk, and 4% of subjects experienced severe aspiration risk.

Patients with attention, cognitive-perceptual, and behavioral deficits following stroke contribute indirectly to dysphagia severity [20-22]. Patients with brainstem infarct often have silent aspiration which is challenging to identify at bedside [24]. Patients who have developed sensory deficits with stroke also have enhanced risk of aspiration [25].

CONCLUSION:

Screening for dysphagia in some persons who have undergone a major stroke is essential because of the significant role of recognising and treating aspiration risk early. As a result, people with aspiration pneumonia save money by spending less time in the hospital. Furthermore, for individuals who have suffered a long-term stroke, dysphagia therapy is an integral aspect of total recovery and is associated with improved quality of life.

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