ABSTRACT

**Background:** Dysphagia is common after acute stroke and can directly affect patient’s prognosis and recovery through development of chest infection. This study intended to highlight how common are dysphagia and aspiration pneumonia in acute stroke patients, and their impact on the outcome of acute stroke patients in our environment. Few studies have been done in our environment to look at the frequency of dysphagia and its impact on outcome in acute stroke patients.

**Objective:** To determine the frequency of dysphagia and its effect on 30-day outcome in acute stroke patients. Also to determine the association, if any, between dysphagia and stroke type, stroke severity, lesion site, and/or lesion size and to determine the frequency of aspiration pneumonia in acute stroke with and without dysphagia, and its effect on 30 day outcome in acute stroke patients.

**Materials and Methods:** A total of 200 stroke patients were recruited. Assessment of dysphagia using Bedside Swallowing Test was done for all the patients. There were ninety nine (99) dysphagic stroke patients and one hundred and one (101) non-dysphagic stroke patients. NIHSS and GCS were determined on admission. Using a questionnaire, socio-demographic characteristic and detail of past medical history were obtained. Patients’ functional outcomes were assessed using Modified Ranking scale and Barthel index at one week, two weeks and one month after stroke. Aspiration pneumonia was diagnosed based on the established criteria. Strokes were classified according to brain CT scan result. All data was analyzed using Statistical Package for Social Sciences (SPSS) version 16.

**Results:** The mean age of study participants was 60.8± 11.8 years. Male to female (M: F) ratio was 1.08:1.0. Out of 200 patients that were recruited for this study, 100 had ischaemic stroke subtype and 100 had haemorrhagic stroke. The frequency of dysphagia in this study was 46.47% when assessed by
measuring peripheral oxygen desaturation and 48.50% when assessed with 10mls water swallowing test. Haemorrhagic stroke type was associated with dysphagia in acute stroke patients in this study.

Stroke lesions in the subcortical regions were more associated with dysphagia than cortical lesions. Baseline severe NIHSS was associated with dysphagia. The size of stroke lesion was also associated with dysphagia. Stroke patients with large lesion sizes had increased propensity to develop dysphagia. 78.9% of stroke patients with dysphagia died on admission with their average survival days shorter than those without swallowing difficulty. Dysphagic stroke patients had worse functional outcome at the end of 4th week based on the MRS and BI values. 30-day case fatality rate for patients with dysphagia alone was 24.2%. The frequency of aspiration pneumonia in stroke patients with dysphagia in this study was 62.6%. 69.4% of patients with aspiration pneumonia died on admission with the average survival days much shorter than those without aspiration pneumonia. Functional outcome based on MRS and BI values at 4th week was worse in patients with aspiration pneumonia. 30-day case fatality rate for dysphagic stroke patients complicated by aspiration pneumonia was 55.6%. In the multivariate regression analysis, dysphagia (P= 0.005), aspiration pneumonia (p= 0.024), severe baseline NIHSS (p= 0.049), and haemorrhagic stroke subtype (p= 0.043) were important determinants of 30-day case fatality in this study.

**Conclusion:** Swallowing function should be assessed in all acute stroke patients because swallowing dysfunction is common and complications frequently arise. Pneumonia risk is greatest in patients with dysphagia and has negative impact on the outcome of acute stroke patients. Predictors for dysphagia were lesion size, haemorrhagic stroke, initial severe NIHSS score, and subcortical lesions. Dysphagia and aspiration pneumonia were significant determinants of 30-day case fatality.