Clinical Audit

An audit on speech and swallow assessment in neuro ICU

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Background

Dysphagia is a common stroke symptom and leads to serious complications such as aspiration pneumonia. Early screening can significantly reduce these complications. Studies investigating the association of early dysphagia screening with outcomes in patients with acute stroke are rare

Keywords: Speech and swallow assessment; Acute stroke; TBI; Psychological Burden

1. Introduction

There are many studies which highlights the early screening of dysphagia in stroke intensive care units;

- Reduces the risk of aspiration pneumonia.
- Reduces length of hospital stay
- Early enteral feeds
- Early airway protection

1.1. Aim

Evaluation of speech and swallow assessment done at Neuro critical care unit with acute brain injury. Prevention of aspiration pneumonia

1.2. Materials and Methods

- **Place of Audit**: Neuro ICU, Kauvery speciality hospital, Cantonment, Trichy
- **Date**: November 2024 – April 2025
- **Done by**: Speech and Swallow Pathologist, Department of Brain and Spine
- **Methodology**: Prospective analysis of assessment of speech and swallowing in 655 patients.

1.3. Parameters

The following parameters of 655 patients out of 1233 patients, both clinical and instrumental data were collected.

Speech and Swallow Assessment:

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- Within 24 hr
- 24 hr

Clinical parameters:

- Cranial Nerve Examination
- Oral Peripheral examination
- Oral feeds initiation
- Early tracheostomy referral and weaning

1.4. Exclusion Criteria

- Low GCS (<9)
- Trauma patients: often intubated.
- Oro maxillary facial injuries.
- Delay in admissions and referrals
- Patients admitted in neuro ICU with other comorbities .
- Total - (1233-655 = 578)

1.5. Inclusion Criteria

- GCS > 10
- acute stroke and TBI-Non Intubated
- Total – 655

Clinical Parameters	**Importance**
GCS	Needs GCS of above 10
Cranial nerve Examination	To narrow down neurological symptoms and localization of stroke
Oral peripheral examination	To identify the limitations contributing to swallowing & speech
Speech Intelligibility	To identify speech impairments and to plan therapy
Water Swallow Test	To screen for aspiration

FEES: Flexible Endoscopic Evaluation of Swallowing Done for patients who failed clinical screening of speech and swallowing

2. Assessment

Causes	**Within 24 hr**	**Beyond 24 hr**	**Total**
Acute stroke	331	117	655
Traumatic brain injury	98	109	
Percentage (%)	429 (65.5%)	226 (34.5%)	

2.1. Intervention

Intervention	Within 24 hr	%	Beyond 24 hr	%
Early RT feeds	156	36.3%	133	58.8%
Airway protection	94	21.9%	62	27.4%
Speech intervention	72	16.7%	155	68.5%

2.3. Outcomes

Parameters	Significance
Early Tracheostomy weaning	> 40% of patients were initiated with weaning from day 1 tracheostomy and early decannulation was done
Speech Intervention	> 50% were evaluated and counseled regarding speech outcomes
Oral feeds initiation	> 60% of patients were initiated with oral feeds immediately after assessment
Reduced Hospital stay	> 50% the patient were assessed, treated, weaned were discharged early than those who didn't undergo assessment
Early rehabilitation care	>60% of patients were initiated early rehab care because of increased cognitive awareness and early weaning

COMPARISON: INTERNATIONAL VS LOCAL AUDIT

	INTERNATIONAL (UK, USA, CANADA, AUSTRALIA)	NEURO ICU KAUVERY AUDIT
Population size	Large national registries	655 patients
Swallow screen before oral intake	80–90% within 4 hrs	65,5% within 24 hrs
Formal SLP swallow assessment	~50–65%	FEES done if failed screen
Speech/communication assessment	~50–66%	Within 24 hrs: ~16.7% Beyond 24 hrs: ~68,5%
Instrumental assessment (FEES/VFS)	Commonly used in complex cases	FEES done if failed screen
Outcome focus	Reduce pneumonia, length of stay, disability	Early RT feeds, airway protection, early trachestomy weaning, reduced hospital stay
Early assessment target	Within 24–48 hrs	Achieved in 65,5% within 24 hrs

3. Key Observations

- Our Neuro ICU audit matches international practice by aiming for early swallow screening and SLP assessment.
- International audits report slightly higher rates (80–90%) of swallow screening within 24 hr, whereas our audit achieved 65.5% within 24 hr – which is still very good, especially for a mixed Neuro ICU population (stroke + TBI).
- Our audit documents early tracheostomy weaning, RT feeds, and speech intervention, which aligns with international outcome measures.
- Instrumental assessments (FEES) were selectively used, matching global best practice.

4. Limitations

- We are dealing with mixed population – Stroke and TBI whereas international studies were done exclusively in stroke patients.
- All assessments were done Only by Single Individual.

5. Outcomes in Neuro ICU

A. Our unit has unified Neuro ICU inclusive of Stroke ICU which makes the evaluation seamless.

B. Prompt referrals from ER leads to early evaluation.

C. Early detection of aspiration prevents risks of aspiration pneumonia and the patient's treatment plan can be tailored ahead.

D. Better nutritional support because of early RT weaning

E. Cross consultations help prompt actions and interventions.

6. Conclusion

Our data shows the significance of speech and swallowing screening promoting early management and intervention enhancing mental health of patients and caretakers furthermore reducing psychological burden and financial strains on attenders.