PS-6

Development of ICU-swallowing therapy protocol for post-extubation dysphagia – a retrospective study

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Introduction

- ✓ **Dysphagia** occurs frequently in critically-ill patients, particularly in those who required **mechanical ventilation** and underwent **intubation.**
- ✓ Question : Who need early screening and intervention as an **intensive care unit(ICU)-swallowing therapy** to prevent post-extubation dysphagia?
- ✓ Aim : To evaluate the feasibility and potential benefits of ICU-swallowing therapy provided immediately after extubation.

Materials and Methods

- ✓ A single-center, retrospective cohort study
- ✓ **Inclusion criteria:** who received ICU-swallowing therapy (2020~2022) (n=137).
- Intubation period > 72 hour and/or re-intubation/tracheostomy because of extubation failure OR Any sign of dysphagia, i.e. aspiration symptom or hoarseness, during ICU stay.
- Richmond agitation sedation scale (RASS) : **-1, 0, +1 (drowsy to restless)**

Score	Classification	(RASS)
+4	Combative	Overtly combative or violent; immediate danger to staff
+3	Very agitated	Pulls on or removes tube(s) or catheter(s) or has aggressive behavior toward staff
+2	Agitated	Frequent non-purposeful movement or patient-ventilator dyssynchrony
+1	Restless	Anxious or apprehensive but movements not aggressive or vigorous
0	Alert and calm	Spontaneously pays attention to caregiver
-1	Drowsy	Not fully alert, but has sustained (more than 10 seconds) awakening, with eye contact to voice
-2	Light sedation	Briefly (less than 10 seconds) awakens with eye contact to voice
-3	Moderate sedation	Any movement (but no eye contact) to voice
-4	Deep sedation	No response to voice, but any movement to physical stimulation
-5	Unarousable	No response to voice or physical stimulation

- Attention span > 15 minutes; who can follow instructions and cooperate to treatment.

- ✓ **Exclusion criteria:**
- ICU-swallowing therapy could not be provided because of immediate transfer to general ward (n=15).
- Oral feeding was prohibited permanently because of gastrointestinal problems (n=5).
- Died before discharge (n=24).

- ✓ ICU-swallowing therapy program (15minutes x 10 sessions):
  → individually determined according to RASS, phonation, apraxia (Fig 1).
  → dysphagia assessment (bedside water-swallow test, FEES, or VFS) determines further swallowing treatment after 10 sessions.
- ✓ Primary outcome : **Functional Oral intake Scale (FOIS)** at discharge.

FOIS (Functional Oral Intake Scale)

Level 1	Nothing by mouth
Level 2	Tube-dependent with minimal attempts of food or liquids
Level 3	Tube-dependent with consistent oral intake of food or liquids
Level 4	Total oral diet of a single consistency
Level 5	Total oral diet with multiple consistencies but requiring special preparations or compensations
Level 6	Total oral diet with multiple consistencies without special preparation but with specific food limitations
Level 7	Total oral diet with no restrictions

Results

- ✓ Among all patients undergoing ICU rehab (n=965), a total of **137 patients (13.7%)** was included as an ICU-swallowing therapy cohort.
- ✓ After starting ICU-swallowing therapy, all patients (n=117) finished 10 treatment sessions without any complications during ICU stay.
- ✓ Mortality (n=24; 17.5%); 13 patients died because of lung failure; aspiration pneumonia (n=3), non-aspiration pneumonia (n=7), and respiratory failure not from pneumonia (n=3).

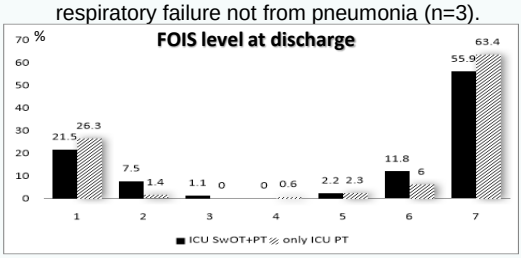

Figure 3. Comparison of FOIS at discharge between those who received additional ICU-swallowing therapy and those received only ICU-physical therapy.

- ✓ The proportions of FOIS level 2-6 was greater than those with only physical therapy. (Only ICU PT group resulted in either FOIS level 1 or 7).

❖ **Conclusion:** ICU-swallowing therapy is **feasible and safe** if extubated and can enhance earlier oral feeding.

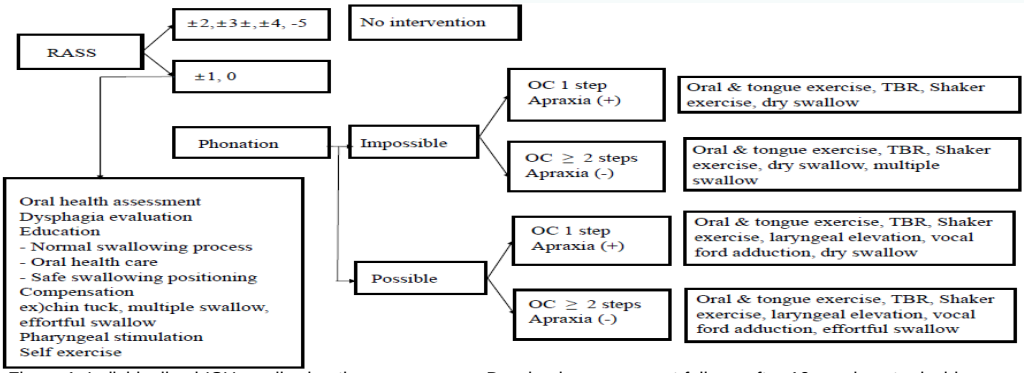

Figure 1. Individualized ICU-swallowing therapy program. Dysphagia assessment follows after 10 sessions to decide whether or not to continue swallowing therapy. *OC, obey command; RASS, Richmond agitation-sedation scale; TBR, tongue base retraction.