Post stroke Oropharyngeal dysphagia

These guidelines were adapted from "European Stroke Organisation and European Society for Swallowing Disorders Guideline for the Diagnosis and Treatment of Post-Stroke Dysphagia 2021" and "Clinical Guidelines for Stroke Management Stroke Foundation. (2022). Melbourne (Australia): Stroke Foundation"

With partial incorporation of insights from reputable resources to enhance its comprehensiveness and applicability

Acknowledgement

We would like to acknowlege the Committee of National Egyptian Guidelines, Ministry of Health and ENT Scientific Committee for adapting this Guidelines.

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Abbreviations

PSOPD: post-stroke oropharyngeal dysphagia

TDT: Traditional Dysphagia Therapies

NMES neuromuscular electrical stimulation

rTMS: Repetitive transcranial magnetic stimulation

tDCS transcranial direct current stimulation

TES : transcutaneous electrical stimulation .

PES :pharyngeal electrical stimulation .

Glossary

Oropharyngeal dysphagia: typically refers to difficulty in eating as a result of disruption in the swallowing process.

The Eating Assessment Tool-10 (EAT-10) is a dysphagia screening tool developed in 2008 by Belafsky et al. to identify people at high risk of swallowing disorders. It is a 10-item self-assessment scale that patients can complete in a short period of time. Each item corresponds to 5 levels of difficulty from "no problem" to "serious problem,"

The water-swallowing test (WST): is frequently used in clinical practice as a functional assessment to detect aspiration and prevent pneumonia. It is a standardized test used all over the world

traditional swallowing training, **(TST)** relies on behavioral training that focus on enhancing sensory feedback from the oropharynx to the central pattern generator, strengthening the disused or pharyngeal musculature, preventing atrophy and reduced motor output from the central pattern generator, and minimizing symptoms through the use of compensatory postural adjustments.

Repetitive transcranial magnetic stimulation and transcranial direct current stimulation, surface neuromuscular electrical stimulation (NMES): ,Are numerous adjunctive treatment options that may theoretically improve the recovery of dysphagia.

Scope

This Guideline is concerned with diagnosis and treatment decision of: oropharyngeal dysphagia. This is targeting adults >18 years this guideline is not targeting pediatric population.

Executive Summary

The Phoniatrician's role is:

- Identifying signs and symptoms of dysphagia;
- Identifying normal and abnormal swallowing anatomy and physiology supported by imaging;
- Identifying indications and contraindications specific to each patient for various assessment procedures;
- Identifying signs of potential disorders in the upper aerodigestive and/or digestive tracts and making referrals to appropriate medical personnel;
- Assessing swallow function as well as analyzing and integrating information from such assessments collaboratively with medical professionals, as appropriate;
- Providing treatment for swallowing disorders, documenting progress, adapting and adjusting treatment plans based on patient performance
- Identifying and using appropriate functional outcome measures;
- Understanding a variety of medical diagnoses and their potential impact(s) on swallowing;
- Recognizing possible contraindications to clinical decisions and/or treatment;
- Being aware of typical age-related changes in swallow function;
- Providing education and counseling to individuals and caregivers;
- Respecting issues related to quality of life for individuals and/or caregivers;
- Practicing interprofessional collaboration;
- Advocating for services for individuals with swallowing and feeding disorders;
- Determining the effectiveness and possible impact of current diet on overall health (e.g., positioning, feeding dependency, environment, diet modification, compensations).
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Purpose

Appraisal of the research evidence that exists to support the use of instrumental measures in the clinical assessment of patients with PSOPD. And outline the measures used in its management.

Specifically, the goals are to improve diagnostic accuracy, identify post stroke cases who are most susceptible to OPD, and educate clinicians regarding assessment and rehabilitation

The target audience

The guideline is intended for all clinicians who are likely to diagnose and manage OPD

Methods

A comprehensive search for guidelines was undertaken to identify the most relevant guidelines to consider for adaptation.

inclusion/exclusion criteria followed in the search and retrieval of guidelines to be adapted:

- *Selecting only evidence-based guidelines (guideline must include a report on systematic literature searches and explicit links between individual recommendations and their supporting evidence)*
- *Selecting only national and/or international guidelines*
- *Specific range of dates for publication (using Guidelines published or updated 2013 and later)*
- *Selecting peer reviewed publications only*
- *Selecting guidelines written in English language*
- *Excluding guidelines written by a single author not on behalf of an organization in order to be valid and comprehensive, a guideline ideally requires multidisciplinary input*
- *Excluding guidelines published without references as the panel needs to know whether a thorough literature review was conducted and whether current evidence was used in the preparation of the recommendations*

The following characteristics of the retrieved guidelines were summarized in a table:

- *Developing organisation/authors*
- *Date of publication, posting, and release*
- *Country/language of publication*
- *Date of posting and/or release*

- *Dates of the search used by the source guideline developers*

All retrieved Guidelines were screened and appraised using AGREE II instrument (www.agreetrust.org) by at least two members. the panel decided a cut-off point or rank the guidelines (any guideline scoring above 50% on the rigour dimension was retained)

Evidence assessment

According to WHO handbook for Guidelines we used the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach to assess the quality of a body of evidence, develop and report recommendations. GRADE methods are used by WHO because these represent internationally agreed standards for making transparent recommendations. Detailed information on GRADE is available on the following sites:

■ *GRADE working group: http://www.gradeworkingroup.org*

■ *GRADE online training modules: http://cebgrade.mcmaster.ca/*

■ *GRADE profile software: http://ims.cochrane.org/revman/gradepro*

Table 1 Quality of evidence in GRADE

Quality level	Definition
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

GRADE: Grading of Recommendations Assessment, Development and Evaluation.

Table 2 Significance of the four levels of evidence

Quality	Definition	Implications
High	The guideline development group is very confident that the true effect lies close to that of the estimate of the effect	Further research is very unlikely to change confidence in the estimate of effect
Moderate	The guideline development group is moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate
Low	Confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the true effect	Further research is very likely to have an important impact on confidence in the estimate of effect and is unlikely to change the estimate
Very low	The group has very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of the effect	Any estimate of effect is very uncertain

Table 3 Factors that determine How to upgrade or downgrade the quality of evidence

Downgrade in presence of	Upgrade in presence of
Study limitations -1 Serious limitations -2 Very serious limitations	Dose-response gradient +1 Evidence of a dose-response gradient
Consistency -1 Important inconsistency	Direction of plausible bias +1 All plausible confounders would have reduced the effect
Directness -1 Some uncertainty -2 Major uncertainty	Magnitude of the effect +1 Strong, no plausible confounders, consistent and direct evidence
Precision -1 Imprecise data	+2 Very strong, no major threats to validity and direct evidence
Reporting bias -1 High probability of reporting bias	

The strength of the recommendation

The strength of a recommendation communicates the importance of adherence to the recommendation.

Strong recommendations

With strong recommendations, the guideline communicates the message that the desirable effects of adherence to the recommendation outweigh the undesirable effects. This means that in most situations the recommendation can be adopted as policy.

Conditional recommendations

These are made when there is greater uncertainty about the four factors above or if local adaptation has to account for a greater variety in values and preferences, or when resource use makes the intervention suitable for some, but not for other locations. This means that there is a need for substantial debate and involvement of stakeholders before this recommendation can be adopted as policy.

When not to make recommendations

When there is lack of evidence on the effectiveness of an intervention, it may be appropriate not to make a recommendation.

Recommendations

	Evidence-Based Statements recommendation levels	Grades / Levels of Evidence
Eating assessment tool (EAT-10) can be used as a dysphagia screening tool (1)	Strong Recommendation;	Moderate Evidence
All patients should receive a formal dysphagia screen by either water swallow test or multiple consistency test as fast as possible following admission secondary to acute stroke. Until such time that this screening can be conducted and swallowing has been judged to be safe, no administration of any food or liquid, including oral medication, is recommended (1)	Strong Recommendation,	Moderate Evidence
All stroke patients failing a dysphagia screen and/or showing other clinical predictors of post-stroke dysphagia (i.e., severe aphasia, severe dysarthria, severe facial palsy, and/or severe neurological deficit) should receive a dysphagia evaluation as soon as possible. In addition to clinical swallow examination, videofluoroscopic swallow study, or, preferably, fiberoptic endoscopic evaluation of swallowing should be available. Evaluation should routinely include swallowing of tablets, liquids, and different food consistencies and quantities (1)	Weak Recommendation,	Low Evidence
For individuals with dysphagia secondary to stroke, texture modification and/or thickened	Weak For Recommendation	Low Evidence

liquids may be utilized to reduce risk of pneumonia (1)		
These modified textures and viscosities must only be prescribed based upon an appropriate assessment of swallowing. (1)	Strong for Recommendation	Low Evidence
Additionally, these patients should be monitored for fluid balance and nutritional intake (1)	Strong Recommendation	Moderate Evidence
Behavioral swallowing exercises (defined as including exercises, maneuvers, postural changes, and expiratory muscle strength training within this guideline) to rehabilitate swallow function are recommended for individuals with dysphagia status post stroke, however the training program should be tailored to the specific swallowing impairment of the individual based upon assessment findings (1)	Weak Recommendation	Moderate Evidence
Oral care interventions are recommended in patients with dysphagia secondary to stroke in order to reduced pneumonia risk (1)	Weak Recommendation	Low Evidence
Swallowing fluoroscopy may also be appropriate in evaluating patients with globus pharyngeus, chronic cough, regurgitation, or recurrent pneumonia (2)	recommendation	Moderate Quality of Evidence
Videofluoroscopic swallow studies (VFSS) are appropriate for patients with suspected swallowing impairments from the oral to the pharyngoesophageal phases of deglutition or patients with inconclusive or incongruent clinical swallow exam results (2)	recommendation	Low Quality of Evidence
VFSS should be the assessment tool used for patients with known neurologic diseases or with liquid dysphagia complaints (2)	recommendation	High Quality of Evidence
When conducting a videofluoroscopic swallow study (VFSS), clinicians should follow "a standardized and reproducible stepwise protocol including the lateral and anterior-posterior (AP) views" (2)	recommendation	Moderate Quality of Evidence
As clinically appropriate, VFSS protocol should progress from the smallest bolus volume to larger volumes and multiple consistencies and solids should be used (2)	recommendation	Moderate Quality of Evidence

In patients with post-stroke dysphagia and insufficient oral intake we suggest an early enteral nutrition via a nasogastric tube.(1)	Weak recommendation	Quality of evidence: Moderate
In patients with post-stroke dysphagia, we suggest treatment with rTMS, TES, tDCS and PES as adjunct to conventional dysphagia treatments to improve swallowing function.(1)	Weak recommendation	Moderat

References:

1- European Stroke Organisation and European Society for Swallowing Disorders Guideline for the Diagnosis and Treatment of Post-Stroke Dysphagia . Dziewas, R., Michou, E., et al. (2021). European Stroke Journal, 6(3), LXXXIX-CXV.

2- The American Broncho-Esophagological Association Position Statement on Swallowing Fluoroscopy Dhar, S. I., Nativ-Zeltzer, N., et al. (2023). Laryngoscope, 133(2), 255-268.

3- Anne Marie Beck, Annette Kjaersgaard, Tina Hansen, Ingrid Poulsen, Systematic review and evidence based recommendations on texture modified foods and thickened liquids for adults (above 17 years) with oropharyngeal dysphagia – An updated clinical guideline, Clinical Nutrition,Volume 37, Issue 6, Part A,2018,Pages 1980-1991,ISSN 0261-5614, https://doi.org/10.1016/j.clnu.2017.09.002.

4- Comparative Effectiveness of Combined and Single Neurostimulation and Traditional Dysphagia Therapies for Post-Stroke Dysphagia: A Network Meta-Analysis. Banda, K. J., Wu, K. C., et al. (2023). Neurorehabilitation and Neural Repair, 37(4), 194-204.

5- Clinical Guidelines for Stroke Management Stroke Foundation. (2022). Melbourne (Australia): Stroke Foundation,