

Clinical Practical Guideline

Hoarseness (Dysphonia)

These Guidelines were adapted mainly from “Clinical practice guideline: Hoarseness (Dysphonia) developed by the American Academy of Otolaryngology-Head and Neck Surgery Foundation in 2009”¹ and “Clinical Practice Guideline: Hoarseness (Dysphonia) (Update) updated by the American Academy of Otolaryngology-Head and Neck Surgery Foundation in 2018.”²

Acknowledgement

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

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Abbreviations:

QOL = Quality of life

Glossary:

Hoarseness (dysphonia) is defined as a disorder characterized by altered vocal quality, pitch, loudness, or vocal effort that impairs communication or reduces voice-related QOL.

Impaired communication is defined as a decreased or limited ability to interact vocally with others.

Reduced voice-related QOL is defined as a self-perceived decrement in physical, emotional, social, or economic status as a result of voice-related dysfunction.

Executive summary

This guideline provides evidence-based recommendations on managing hoarseness (dysphonia) which affects nearly one-third of the population at some point in their lives. This guideline applies to all age groups evaluated in a setting where hoarseness would be identified or managed. It is intended for all clinicians who are likely to diagnose and manage patients with hoarseness.

- The clinician should not routinely prescribe antibiotics to treat hoarseness.
- The clinician should advocate voice therapy for patients diagnosed with hoarseness that reduces voice-related QOL.

- The clinician should diagnose hoarseness (dysphonia) in a patient with altered voice quality, pitch, loudness, or vocal effort that impairs communication or reduces voice-related QOL.
- The clinician should assess the patient with hoarseness by history and/or physical examination for factors that modify management, such as one or more of the following: recent surgical procedures involving the neck or affecting the recurrent laryngeal nerve, recent endotracheal intubation, radiation treatment to the neck, a history of tobacco abuse, and occupation as a singer or vocal performer.
- The clinician should visualize the patient's larynx or refer the patient to a clinician who can visualize the larynx, when hoarseness fails to resolve by a maximum of three months after onset, or irrespective of duration if a serious underlying cause is suspected.
- The clinician should not obtain computed tomography or magnetic resonance imaging of the patient with a primary complaint of hoarseness prior to visualizing the larynx.
- The clinician should not prescribe anti reflux medications for patients with hoarseness without signs or symptoms of gastroesophageal reflux disease.
- The clinician should not routinely prescribe oral corticosteroids to treat hoarseness.
- The clinician should visualize the larynx before prescribing voice therapy and document/communicate the results to the speech-language pathologist.
- The clinician should prescribe or refer the patient to a clinician who can prescribe, botulinum toxin injections for the treatment of hoarseness caused by adductor spasmodic dysphonia.
- The clinician may perform laryngoscopy at any time in a patient with hoarseness or may refer the patient to a clinician who can visualize the larynx.
- The clinician may educate/counsel patients with hoarseness about control/preventive measures.

Introduction

Nearly one-third of the population has impaired voice production at some point in their lives.^{1,2} Hoarseness is more prevalent in certain groups, such as teachers and older adults, but all age groups and both genders can be affected.¹⁻⁶ In addition to the impact on health and quality of life (QOL),^{7,8} hoarseness leads to frequent health care visits and several billion dollars in lost productivity annually from work absenteeism.⁹ Hoarseness is often caused by benign or self-limited conditions, but may also be the presenting symptom of a more serious or progressive condition requiring prompt diagnosis and management

Purpose

The primary purpose of this guideline is to improve the quality of care for patients with hoarseness based on current best evidence. Expert consensus to fill evidence gaps, when used, is explicitly stated, and is supported with a detailed evidence profile for transparency. Specific objectives of the guideline are to reduce inappropriate variations in care, produce optimal health outcomes, and minimize harm.

This guideline addresses the identification, diagnosis, treatment, and prevention of hoarseness (dysphonia). In addition, it highlights needs and management options in special populations or in patients who have modifying factors. Furthermore, this guideline is intended to enhance the accurate diagnosis of hoarseness (dysphonia), promote appropriate intervention in patients with hoarseness, highlight the need for evaluation and intervention in special populations, promote appropriate therapeutic options with outcomes assessment, and improve counseling and education for prevention

and management of hoarseness. This guideline may also be suitable for deriving a performance measure on hoarseness.

The Target Audience

The guideline is intended for all clinicians who are likely to diagnose and manage patients at any age with hoarseness (dysphonia), and it applies to any setting in which hoarseness (dysphonia) would be identified, monitored, or managed.

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 2015 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 organization/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.

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.gradeworkinggroup.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	

Recommendations

1. DIAGNOSIS: Clinicians should diagnose hoarseness (dysphonia) in a patient with altered voice quality, pitch, loudness, or vocal effort that impairs communication or reduces voice-related QOL.

Strong Recommendation

*High quality evidence based on observational studies with a preponderance of benefit over harm.*³⁻⁵

2. MODIFYING FACTORS: Clinicians should assess the patient with hoarseness by history and/or physical examination for factors that modify management such as one or more of the following: recent surgical procedures involving the neck or affecting the recurrent laryngeal nerve, recent endotracheal intubation, radiation treatment to the neck, a history of tobacco abuse, and occupation as a singer or vocal performer.

Strong Recommendation

*High quality evidence based on observational studies with a preponderance of benefit over harm.*⁶⁻¹²

3A. LARYNGOSCOPY AND HOARSENESS: Clinicians may perform laryngoscopy or may refer the patient to a clinician who can visualize the larynx, at any time in a patient with hoarseness.

Conditional

Moderate quality evidence based on observational studies, expert opinion, and a balance of benefit and harm.^{13,14}

3B. INDICATIONS FOR LARYNGOSCOPY: Clinicians should visualize the patient's larynx or refer the patient to a clinician who can visualize the larynx, when hoarseness fails to resolve by a maximum of three months after onset, or irrespective of duration if a serious underlying cause is suspected.

Strong Recommendation

High quality evidence based on observational studies, expert opinion, and a preponderance of benefit over harm.¹⁵⁻¹⁹

4. IMAGING: Clinicians should not obtain computed tomography (CT) or magnetic resonance imaging (MRI) of the patient with a primary complaint of hoarseness prior to visualizing the larynx.

Strong Recommendation against imaging

High quality evidence based on observational studies of harm, absence of evidence concerning benefit, and a preponderance of harm over benefit.²⁰⁻²⁵

5A. ANTI-REFLUX MEDICATION AND HOARSENESS. Clinicians should not prescribe anti-reflux medications for patients with hoarseness without signs or symptoms of gastroesophageal reflux disease (GERD).

Strong Recommendation against prescribing

Moderate quality evidence based on randomized trials with limitations and observational studies with a preponderance of harm over benefit.^{26,27}

5B. ANTI-REFLUX MEDICATION AND CHRONIC LARYNGITIS. Clinicians may prescribe anti-reflux medication for patients with hoarseness and signs of chronic laryngitis.

Conditional

Low quality evidence based on observational studies with limitations and a relative balance of benefit and harm.²⁸⁻³¹

6. CORTICOSTEROID THERAPY: Clinicians should not routinely prescribe oral corticosteroids to treat hoarseness.

Strong Recommendation against prescribing

High Quality evidence based on randomized trials showing adverse events and absence of clinical trials demonstrating benefits with a preponderance of harm over benefit for steroid use.^{32,33}

7. ANTIMICROBIAL THERAPY: Clinicians should not routinely prescribe antibiotics to treat hoarseness.

Strong recommendation against prescribing

High quality index based on systematic reviews and randomized trials showing ineffectiveness of antibiotic therapy and a preponderance of harm over benefit.³⁴⁻³⁶

8A. LARYNGOSCOPY PRIOR TO VOICE THERAPY: Clinicians should visualize the larynx before prescribing voice therapy and document/communicate the results to the speech-language pathologist.

Strong Recommendation

High quality index based on observational studies showing benefit and a preponderance of benefit over harm.³⁷⁻³⁹

8B. ADVOCATING FOR VOICE THERAPY: Clinicians should advocate voice therapy for patients diagnosed with hoarseness (dysphonia) that reduces voice-related QOL.

Strong recommendation

High quality index based on systematic reviews and randomized trials with a preponderance of benefit over harm.⁴⁰⁻⁴³

9. SURGERY: Clinicians should advocate for surgery as a therapeutic option in patients with hoarseness with suspected: 1) laryngeal malignancy, 2) benign laryngeal soft tissue lesions, or 3) glottic insufficiency.

Strong Recommendation

High quality index based on observational studies demonstrating a benefit of surgery in these conditions and a preponderance of benefit over harm.⁴⁴⁻⁴⁷

10. BOTULINUM TOXIN: Clinicians should prescribe or refer the patient to a clinician who can prescribe botulinum toxin injections for the treatment of hoarseness caused by spasmodic dysphonia.

Strong Recommendation

High quality index based on randomized controlled trials with minor limitations and preponderance of benefit over harm.⁴⁸⁻⁵²

11. PREVENTION: Clinicians may educate/counsel patients with hoarseness about control/preventive measures.

Conditional

Moderate quality evidence based on observational studies and small randomized trials of poor quality.⁵³⁻⁵⁷

Clinical Indicators of monitoring:

- Clinicians should diagnose hoarseness putting in consideration modifying factors such as medical, surgical and pharmacotherapy history.
- Clinicians should perform or send patient for laryngoscopy if hoarseness persists for more than 3 months or irrespective of duration if a serious underlying cause is suspected.
- Clinician should not prescribe anti-reflux treatment for patients with hoarseness except if there are symptoms and signs of reflux.
- Clinicians should not prescribe antimicrobial therapy and corticosteroids as a routine therapy for patients with hoarseness.
- Clinicians should advocate voice therapy for patients diagnosed with hoarseness (dysphonia) that reduces voice-related QOL.
- Surgery should be advocated as a therapeutic option in patients with hoarseness with suspected: 1) laryngeal malignancy, 2) benign laryngeal soft tissue lesions, or 3) glottic insufficiency.
- Clinicians should prescribe or refer the patient to a clinician who can prescribe botulinum toxin injections for the treatment of hoarseness caused by spasmodic dysphonia.

Research Needs.

- Hoarseness is known to be common, but the prevalence of hoarseness in certain populations such as children is not well known. Additionally, the prevalence of specific etiologies of hoarseness is not known. Descriptive statistics would help to shape thinking on distribution of resources, levels of care, and cost mandates.
- Some of the entities that might benefit from study include viral laryngitis, fungal laryngitis, inhaler-related laryngitis, voice abuse, reflux, and benign lesions (i.e., nodules, polyps, cysts, etc.). A better understanding of the natural history of these disorders could be obtained through prospective observational studies and will have clear implications for the necessity and timing of behavioral, medical, and surgical interventions.

- Prospective studies on the value of steroids and antibiotics for infectious laryngitis are also lacking. Given the known potential harms from these medications, prospective studies examining the benefits relative to placebo are warranted.
- Well conducted and controlled studies of anti-reflux therapy for patients with hoarseness and for patients with signs of laryngeal inflammation would help to establish the value of these medications. Further clarification of which hoarse patients may benefit from reflux treatment would help to optimize outcomes and minimize costs and potential side effects. Future studies may benefit from strict inclusion criteria and specific investigation of the outcome of hoarseness (dysphonia) control.
- Although ancillary testing such as radiographic imaging is often performed to assist in diagnosing the underlying cause of hoarseness, the role of these tests has not been clearly defined. Their usefulness as screening tools is unclear and the cost effectiveness of their use has not been established.
- Study of the effect of early screening and diagnosis is warranted. Voice therapy has been shown to provide short-term benefit for hoarse patients, but long-term efficacy has not been shown. Also, the relative harm of voice therapy has not been studied (e.g., lost work time, anxiety), making the risk/benefit ratio difficult to evaluate.
- As office-based procedures are developed to manage causes of hoarseness previously treated in the operating room, comparative studies on the safety and efficacy of office-based procedures relative to those performed under general anesthesia are needed (e.g. injection vs open thyroplasty).

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