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An overview of the NCCN guidelines for glottic cancer treatment

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Introdução

Introduction: In 2020 were estimated 184,615 new cases and 99,840 deaths from larynx cancer. Treatment options for glottic squamous cell carcinoma can be surgery, radiotherapy, chemotherapy, which may be unimodal or multimodal therapies. However, a Swiss study investigating the consensus on the management of head and neck cancer among practitioners noted discrepancies in clinical practice, and they pointed the need for standardization to reduce heterogeneity in treatment decision.

Objectives: The aim of the present study was to perform an overview of the National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology for Head and Neck Cancer (NCCN guidelines) from 2011 to 2021 for primary Glottic Larynx cancer and to observe the treatment recommendations across this period.

Casuística e Métodos

The recommendations in the NCCN guidelines (https://www.nccn.org/) published from 2011 to 2021 for the treatment of primary Glottic Larynx cancer and its references were described. Additionally, a literature search was performed on MEDLINE, via PubMed from 2011-2021 using MeSH terms to verify the amount of randomized clinical trials (RCT), systematic reviews (SR) and meta-analysis (MA) about the treatment of glottic cancer.

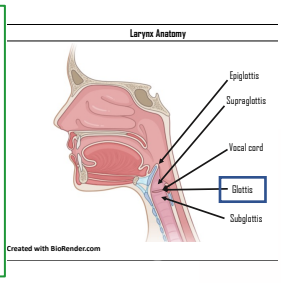


Table 1. Treatment of primary Glottic Larynx cancer according to NCCN guidelines, during the period of 2011-2021.

STAGE	TREATMENT	YEAR	NECK TREATMENT
Tis	Endoscopic resection (ER)	2011-2021	-
	Radiation therapy (RT)	2011-2021	-
	Clinical trial	2011	-
T1-2 N0 or Selected T3	Radiation therapy	2011-2021	Neck dissection as indicated – if N+ (2015-2021)
	Partial laryngectomy/ endoscopic	2011-2021	
	Open resection as indicated	2011-2021	
T3 N0-1	Concurrent systemic therapy/RT	2011-2021	N0: pretracheal and ipsilateral paratracheal lymph node dissection
	RT if patient not candidate for systemic therapy/RT	2011-2021	
	Surgery - Total Laryngectomy	2011-2021	N1: ipsilateral neck dissection, or bilateral neck dissection, and pretracheal and ipsilateral paratracheal lymph node dissection
	Induction chemotherapy	2014-2021	
	Clinical trials	2013-2021	
T3 N2-3	Concurrent systemic therapy/RT	2011-2021	N2-3: ipsilateral or bilateral neck dissection, and pretracheal and ipsilateral paratracheal lymph node dissection
	Surgery - Requiring total Laryngectomy	2011-2021	
	Induction chemotherapy	2011-2021	
	Clinical trials	2013-2021	
T4a – any N	Surgery	2011-2021	N0-3: ipsilateral or bilateral neck dissection, and pretracheal and ipsilateral paratracheal lymph node dissection
	Consider concurrent systemic therapy/RT – if surgery declined	2015-2021	
	Clinical trial for function-preserving surgical or nonsurgical management	2011-2021	
	Induction chemotherapy	2011-2021	
T4b any N, OR Unresectable nodal disease OR Unfit for surgery	Clinical trial	2011-2021	Individual decision
	Standard therapy	2011-2021	Tumor board discussion
	Best supportive care	2011-2021	
Metastatic (M1) disease at initial presentation	Clinical trial preferred	2015-2021	Individual decision
	Consider locoregional treatment based on primary site algorithms	2015-2021	Tumor board discussion
	Standard systemic therapy	2015-2021	
	Best supportive care	2015-2021	

Table 2. Characteristics of the studies included in the NCCN guidelines for 2011, 2014, 2015 and 2021 for the treatment of larynx cancer.

AUTHOR	CITATION YEAR	STUDY DESIGN	NCCN CITATION YEAR
Rodel RM, Steiner W, Muller RM, et al.	2009	Cohort	2011/2014/2015/2021
Zouhair A, Azria D, Coucke P, et al.	2004	Retrospective	2011/2014/2015/2021
Silver CE, Beitler JJ, Shaha AR, et al.	2009	Literature review	2011/2014/2015/2021
Forastiere AA, Goepfert H, Maor M, et al.	2003	Randomized Trial (RTOG 91-11)	2011/2014/2015/2021
Cooper JS, Zhang Q, Pajak TF, et al.	2012	Prospective randomized trial	2014/2015/2021
Forastiere AA, Zhang Q, Weber RS, et al.	2013	Randomized Trial (RTOG 91-11)	2014/2015/2021
Warner L, Chudasama J, Kelly CG, et al.	2014	Systematic review	2021
Warner L, Lee K, Homer JJ.	2017	Systematic review	2021
Mo HL, Li J, Yang X, et al.	2017	Systematic review and meta-analysis	2021
Yoo J, Lacchetti C, Hammond JA, Gilbert RW.	2014	Systematic review	2021
Janoray G, Pointreau Y, Garaud P, et al.	2016	Multicenter randomized Trial	2021
Pointreau Y, Garaud P, Chapet S, et al.	2009	Randomized trial	2021
Semrau S, Schmidt D, Lell M, et al.	2013	Observational	2021
Stokes WA, Jones BL, Bhatia S, et al.	2017	Cohort - National cancer database analysis	2021
Yamazaki H, Nishiyama K, Tanaka E, et al.	2006	Randomized prospective trial	2011/2014/2015/2021
Gowda RV, Henk JM, Mais KL, et al.	2003	Retrospective	2021
Bernier J, Domenge C, Ozsahin M, et al.	2004	Randomized clinical trial	2011/2014/2015/2021
Cooper JS, Pajak TF, Forastiere AA, et al.	2004	Randomized clinical trial	2011/2014/2015/2021
Bernier J, Cooper JS, Pajak TF, et al.	2005	Comparative analysis	2011/2014/2015/2021

Resultados

The main changes that occurred in NCCN guidelines from 2011-2021 were the implementation of induction chemotherapy (2014-2021), and concurrent systemic therapy RT that was indicated if surgery was declined for T4a any N from 2015 to 2021. Also, the recommendations were based on category 2A, which is the lower-level evidence, with a uniform consensus from the expertise panel, and it were considered appropriated as guideline. There were nineteen references articles used to support the NCCN guidelines for glottic cancer from 2011 to 2021, mainly based on articles conducted in countries as United States, United Kingdom, Germany, and France. In 2021, systematic reviews and randomized clinical trials were included as references in the NCCN. In PubMed search, 325 RCTs, SR and MA were found. Among these, 63 articles were specifically about larynx glottic cancer and major part of the studies were performed in the United States of America (n:13) and China (n:11).

Figure 1. World map with the quantitative of articles used as references in the NCCN guidelines for Glottic cancer treatment from 2011-2021 per country.

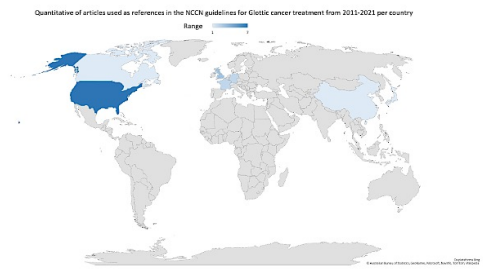


Figure 2. Use of controlled vocabulary Medical Subject Headings (MeSH) terms, keywords, and Boolean operators to perform the search strategy on MEDLINE, via PubMed.

Figure 3. Number of randomized clinical trials and systematic reviews publications about the treatment of primary Larynx Glottic cancer per year in Medline, via PubMed, from January 2011 to December 2021.

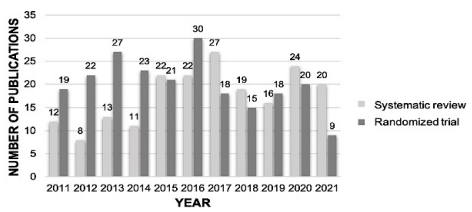
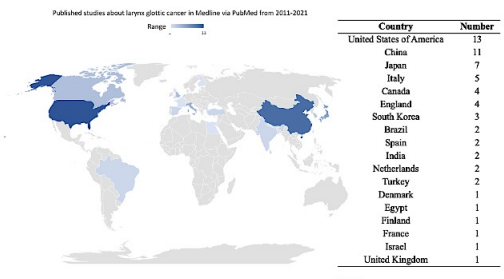


Figure 4. World map of randomized clinical trials, systematic reviews and/or metanalysis studies about larynx glottic cancer published in Medline via PubMed from 2011-2021.



Country	Number
United States of America	13
China	11
Japan	7
Italy	5
Canada	4
England	4
South Korea	3
Brazil	2
Spain	2
India	2
Netherlands	2
Turkey	2
Denmark	1
Egypt	1
Finland	1
France	1
Israel	1
United Kingdom	1

Conclusões

At NCCN guidelines the treatment of glottic cancer changed in 2014 with the implementation of the induction chemotherapy. Since the year of 2021 studies such as systematic reviews and meta-analysis have been included in NCCN references, and most of these were studies performed in the United States of America. And the panel of consensus with the head and neck expert's and a multidisciplinary team taken the final decision. Additionally, there are many articles about laryngeal cancer published in PubMed, however, very few are held in Latin America and African countries.

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