

Supplementary Online Content

Sahovaler A, Kim MH, Mendez A, et al. Survival outcomes in human papillomavirus–associated nonoropharyngeal squamous cell carcinomas: a systematic review and meta-analysis. *JAMA Otolaryngol Head Neck Surg*. Published online October 15, 2020. doi:10.1001/jamaoto.2020.3382

eMethods. Search Strategy

eFigure 1. Study Inclusion Flow Diagram

eFigure 2. Funnel Plots of Each Subsite

eTable. Newcastle-Ottawa Scale for Assessing the Quality of Nonrandomized Studies

This supplementary material has been provided by the authors to give readers additional information about their work.

eMethods. Search Strategy

Search History saved as "2018.05. SR_Human papillomavirus 16 non-oropharyngealcancers_surv_M_FNL"

Topic: Survival of non-oropharyngeal cancers that express a marker Human papillomavirus 16/ P16

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Database: Ovid MEDLINE(R) ALL <1946 to December, 2019>

Search Strategy:

-
- 1 (nonoropharynx\$ or non-oropharynx\$ or (non-OP or non-OPC or non-OP SCC\$ or non-OPSCC\$)).mp. (240)
 - 2 laryngeal neoplasms/ or exp Mouth Neoplasms/ or pharyngeal neoplasms/ or hypopharyngeal neoplasms/ (98774)
 - 3 ((cancer\$ or carcinoma\$ or neoplas\$ or metast\$ or tumor\$ or malignan\$ or SCC or cSCC or squamous\$) adj10 (tongue\$ or lip or lips or gingival\$ or gum or gums or ((salivary\$ or sub-lingual\$ or sublingual\$ or submandibular\$ or sub-mandibular\$) adj2 gland\$) or parotid\$ or oral or (oral\$ adj2 cavit\$) or mouth\$ or laryngeal\$ or larynx\$ or supraglottis\$ or supra-glottis\$ or hypopharynx\$ or hypopharynx\$ or pharynx\$)).tw,kw. (104213)
 - 4 or/1-3 (143823)
 - 5 (head and neck).ti. and (carcinoma\$ and (epidermoid\$ or planocellular\$ or squamous\$)).tw. (13755)
 - 6 Human papillomavirus 16/ or (hvp-16 or hvp16 or (hvp\$ adj2 "16") or (human\$ adj3 (papillomavirus\$ or papillomavirus\$) adj3 "16")).tw,kw. (15847)
 - 7 Cyclin-Dependent Kinase Inhibitor p16/ or (p16 or (protein\$ adj2 "16") or p-16).tw,kw. or (interferon-inducible and (IFI-16 or IFI16)).mp. (22214)
 - 8 exp Papillomavirus Infections/ or (papilloma-virus\$ or papillomavirus\$).tw,kw. (56389)
 - 9 and/7-8 (2901)
 - 10 6 or 9 (17462)
 - 11 exp *Papillomavirus Infections/ or (hvp or (human\$ adj3 (papilloma-virus\$ or papillomavirus\$))).ti. or (hvp or (human\$ adj3 (papilloma-virus\$ or papillomavirus\$))).ab. /freq=3 (47503)

- 12 10 or 11 (49692)
- 13 (4 and 12) or (5 and 10) (3413)
- 14 exp Survivors/ or Survival Analysis/ or surviv\$.mp. or Prevalence/ or prevalence\$.mp. or prevalent\$.mp. (2177302)
- 15 exp Prognosis/ or prognos\$.tw. or exp Recurrence/ or (relapse\$ or recrudescence\$ or recurr\$ or re-curr\$).mp. or NEOPLASM RECURRENCE, LOCAL/ (2424419)
- 16 or/14-15 (4002163)
- 17 13 and 16 (1825)
- 18 limit 17 to english language (1726)
- 19 limit 18 to "all adult (19 plus years)" (995)
- 20 limit 18 to "all child (0 to 18 years)" (216)
- 21 18 not (20 not (19 and 20)) (1667)
- 22 21 not (exp Animals/ not (Human/ and exp Animals/)) (1650)
- 23 (mice or rat or rats or cat\$1 or cattle\$1 or dog\$1 or goat\$1 or horse\$1 or rabbit\$1 or sheep\$1 or swine\$1 or pig\$1 or canine\$1 or feline\$1 or porcine\$ or calf).ti. (1749197)
- 24 22 not 23 (1648)
- 25 case report.ti. (234154)
- 26 24 not 25 (1637)
- 27 limit 26 to "review articles" (256)
- 28 26 not 27 (1381)
- 29 meta analysis.mp,pt. or MEDLINE.tw. or systematic review.tw. (312684)
- 30 26 and 29 (58)
- 31 28 or 30 (1350)**

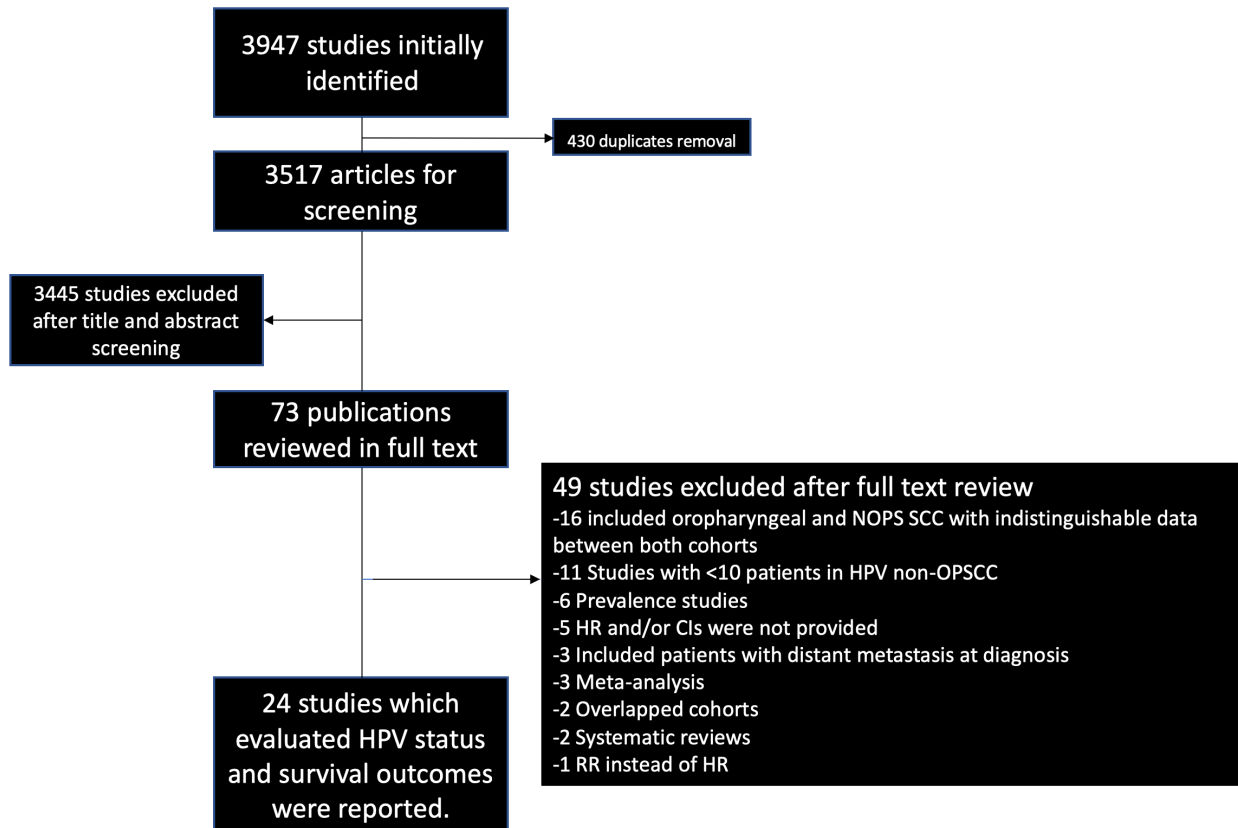
Database: Embase Classic+Embase <1947 to 2019 December>

Search Strategy:

-
- 1 (nonoropharynx\$ or non-oropharynx\$ or (non-OP or non-OPC or non-OP SCC\$ or non-OPSCC\$)).tw,kw. (404)
 - 2 exp *larynx tumor/ or *mouth tumor/ or exp *mouth cancer/ or exp *pharynx tumor/ or exp *salivary gland tumor/ or exp *tongue tumor/ (103718)
 - 3 ((cancer\$ or carcinoma\$ or neoplas\$ or metast\$ or tumo?r\$ or malignan\$ or SCC or cSCC or squamous\$) adj5 (tongue\$ or lip or lips or gingival\$ or gum or gums or ((salivary\$ or sub-lingual\$ or sublingual\$ or submandibular\$ or sub-mandibular\$) adj2 gland\$) or parotid\$ or oral or (oral\$ adj2 cavit\$) or mouth\$ or laryngeal\$ or larynx\$ or supraglotti\$ or supra-glotti\$ or hypopharynx\$ or hypopharynx\$ or pharynx\$)).tw,kw. (116252)
 - 4 or/1-3 (161150)

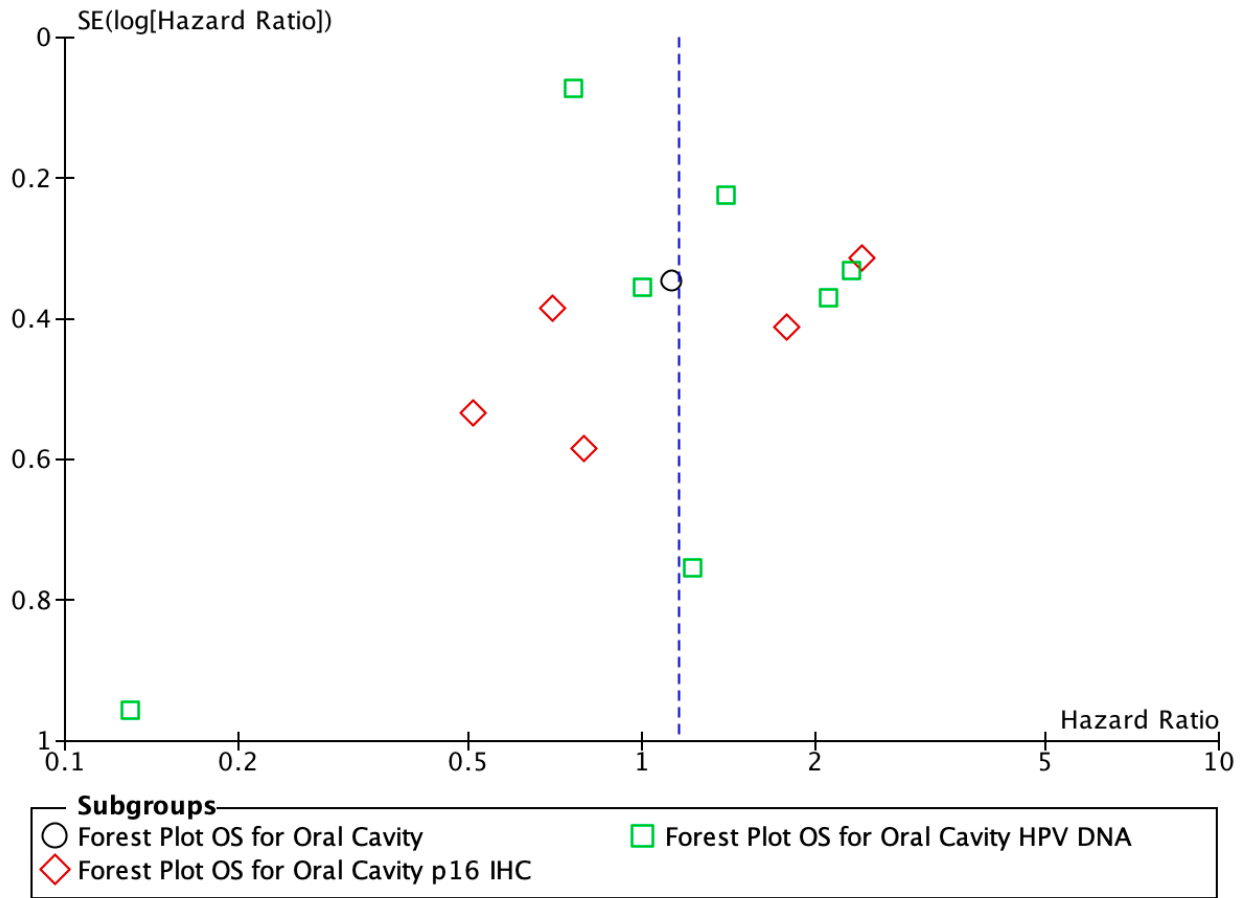
- 5 (head and neck).ti. and (carcinoma\$ adj3 (epidermoid\$ or planocellular\$ or squamous\$)).tw. (18860)
- 6 Human papillomavirus type 16/ or (hvp-16 or hvp16 or (hvp\$ adj2 "16") or (human\$ adj3 (papilloma-virus\$ or papillomavirus\$) adj3 "16")).tw,kw. (21746)
- 7 protein p16/ec or cyclin dependent kinase inhibitor 2A/ec or (p16 or (protein\$ adj2 "16") or p-16).tw,kw. or (interferon-inducible and (IFI-16 or IFI16)).mp. (34886)
- 8 Wart virus/ or exp papillomavirus infection/ or (papilloma-virus\$ or papillomavirus\$).tw,kw. (79194)
- 9 and/7-8 (4630)
- 10 6 or 9 (24635)
- 11 *Wart virus/ or exp *papillomavirus infection/ or (hvp or (human\$ adj3 (papilloma-virus\$ or papillomavirus\$))).ti. or (hvp or (human\$ adj3 (papilloma-virus\$ or papillomavirus\$))).ab. /freq=3 (59638)
- 12 10 or 11 (63511)
- 13 (4 and 12) or (5 and 10) (6099)
- 14 exp survival/ or cancer survivor/ or survival analysis/ or surviv\$.tw,kw. (1920572)
- 15 exp Prognosis/ or prognos\$.tw. or tumor recurrence/ or cancer recurrence/ or recurrent disease/ or (relapse\$ or recrudescence\$ or recurr\$ or re-curr\$).tw,kw. (2173595)
- 16 or/14-15 (3483547)
- 17 13 and 16 (3239)
- 18 limit 17 to english language (3120)
- 19 limit 18 to (adult <18 to 64 years> or aged <65+ years>) (1778)
- 20 limit 18 to (embryo <first trimester> or infant <to one year> or child <unspecified age>) (96)
- 21 18 not (20 not (19 and 20)) (3071)
- 22 21 not ((exp animal/ or nonhuman/) not exp human/) (3025)
- 23 (mice or rat or rats or cat\$1 or cattle\$1 or dog\$1 or goat\$1 or horse\$1 or rabbit\$1 or sheep\$1 or swine\$1 or pig\$1 or canine\$1 or feline\$1 or porcine\$ or calf).ti. (2140128)
- 24 22 not 23 (3022)
- 25 case report.ti. (307659)
- 26 24 not 25 (2916)
- 27 limit 26 to "review" (291)
- 28 26 not 27 (2625)
- 29 meta analysis/ or "systematic review"/ or systematic review.tw. (372441)
- 30 26 and 29 (74)
- 31 28 or 30 (2597)**

eFigure 1. Study inclusion flow diagram.

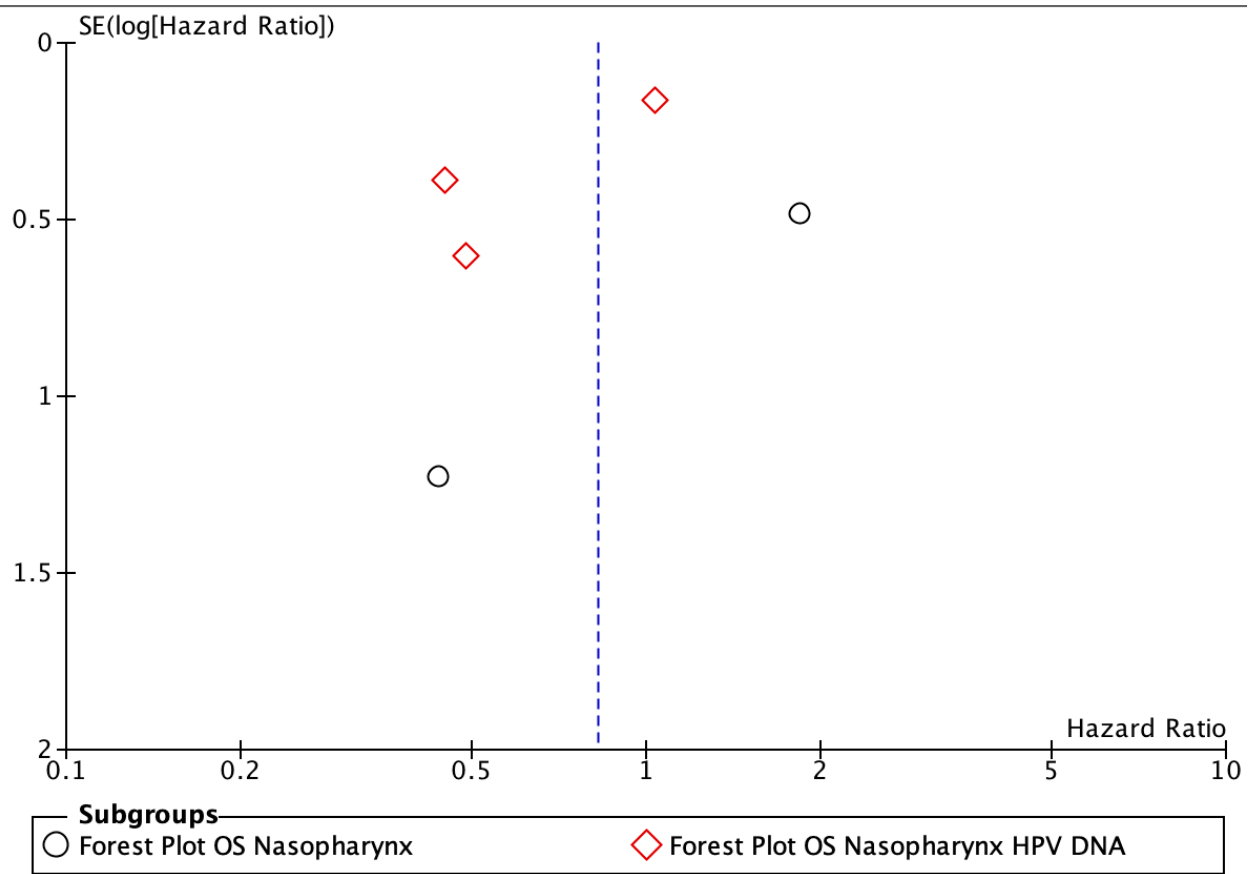


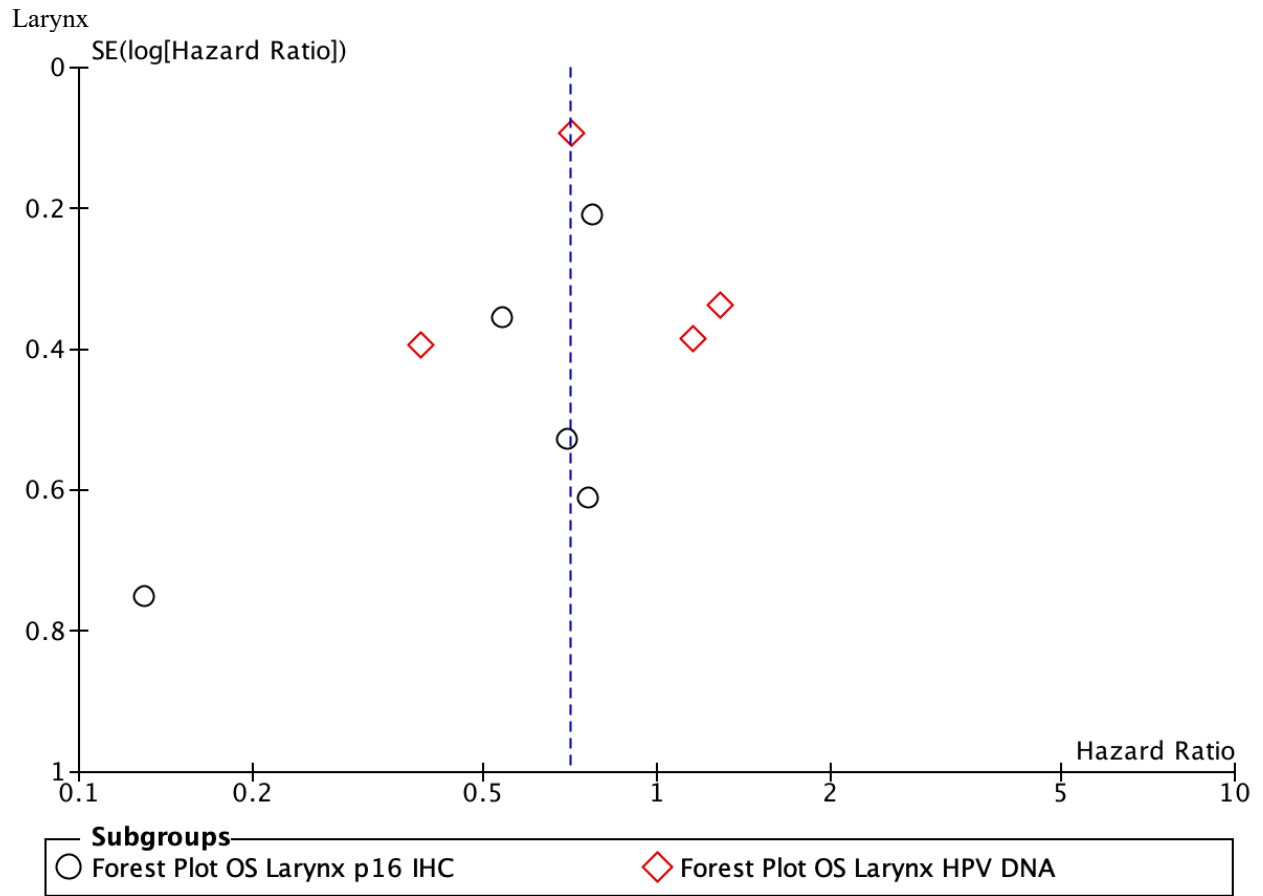
eFigure 2. Funnel plots of each subsite.

Oral Cavity

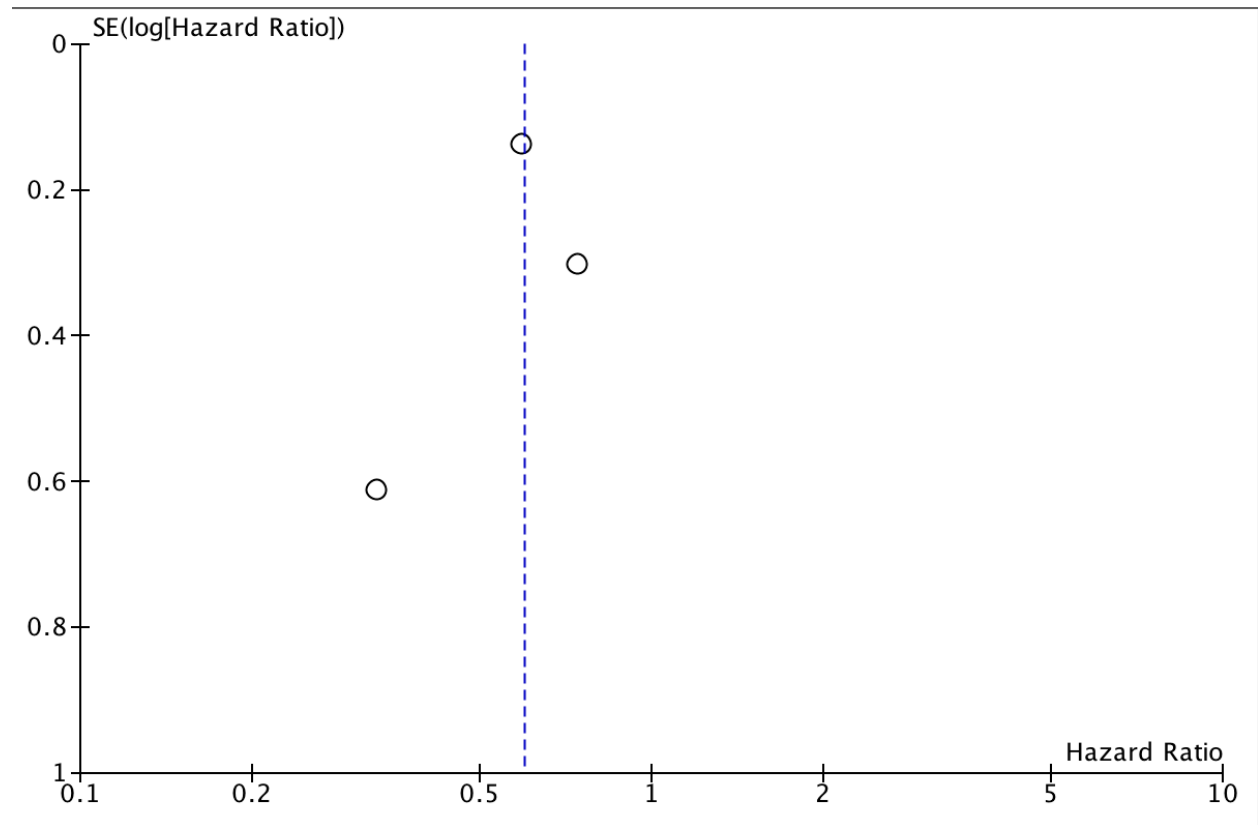


Nasopharynx





Hypopharynx



eTable. Newcastle-Ottawa Scale for Assessing the Quality of Nonrandomized Studies

Study	Location	Selection	Comparability	Outcomes
Chuang 2012	Taiwan	****	**	***
Chung 2014	USA	****	**	***
Fakhry 2016	USA	****	**	***
Hernandez 2014	USA	****	**	***
Jiang 2015	USA	****	*	**
Kang 2016	South Korea	****	**	***
Lai 2017	Sydney	****	**	***
Lam 2018	China	****	**	***
Lassen 2014	Denmark	****	**	**
Lee 2012	Taiwan	****	*	***
Lee 2015	Taiwan	****	*	***
Li 2018	USA	****	*	***
Loeschke 2016	Germany	****	**	***
Ni 2019	China	****	**	**
Ramshankar 2014	India	****	**	***
Rodriguez 2016	Spain	****	**	***
Ruuskanen 2018	Finland	****	*	**
Saghravani 2016	Iran	****	**	***
Stanley 2019	USA	****	*	**
Stenmark 2013	USA	****	*	***
Tong 2018	China	****	**	***
Wotman 2019	USA	****	**	***
Young 2015	Australia	****	**	***
Zhao 2009	China	****	**	**