Oral Oncology 90 (2019) 147–149

Contents lists available at ScienceDirect

Oral Oncology

journal homepage: www.elsevier.com/locate/oraloncology

Letter to the editor

Regional recurrence rate of lymph-node-positive thyroid carcinoma after selective or comprehensive neck dissection

To the editor,

The systematic review by Won et al. [1] provided a reference to us about the optimal extent of lateral neck dissection of lymph-node-positive thyroid carcinoma. However, we would like to propose something deserved further discussion.

The authors summarized the recurrence rate after neck dissection, however, the type of recurrence was not specified in the article. After checking, we found that most data adopted in the meta-analysis referred to regional recurrence rate, while some data included cases of local recurrence or distant metastasis (Table 1). Therefore, this meta-analysis pooled mixed data, which could not tell us the true incidence proportion of either regional recurrence or total recurrence.

We conducted a meta-analysis of regional recurrence rate by STATA 15.1 (Fig. 1). Herein, we found that the study by Sun et al. [2] was eligible to the inclusion criteria and we included its data into our meta-analysis. The results showed that the regional recurrence rate was 18% (95% CIs, 6–31%) after selective neck dissection (SND), while it was 10% (95% CIs, 7–12%) after comprehensive neck dissection (CND). By Chi-square test, we found that regional recurrence rate of SND was significantly higher than that of CND (CND: 316/3292, SND: 46/265, P = 0.0001). However, we still cannot speculate that SND will lead to an increased regional recurrence rate compared with CND, for reasons presented below.

Firstly, the follow-up duration varied among included studies and were mostly inadequate. Conzo et al. [3] reported a median recurrence time of 44 months, and Giordano et al. [4] reported that about half of recurrence cases appeared in the first 28 months of follow-up. However, some of included studies had a median follow-up duration less than 3 years, and only three studies [3,5,6] followed all patients for at least five years (Table 1). Inadequate follow-up may lead to an underestimate of recurrence rate. Due to the varied follow-up, it was difficult to predict whether the reported recurrence rates were approximate to the true values with abundant follow-up. In addition, our meta-analysis did not include data from Zhang et al. [7,8], due that no recurrence occurred during the evidently inadequate follow-up.

Secondly, the extremely high heterogeneity needed further ex-

Table 1
Recurrence type and follow-up duration in data adopted in meta-analysis by Won et al.

Study	Type of ND	Follow-up (median, range) (months)	Recurrence/total	Type of recurrence
Conzo 2013	SND	96, 72–156	24/69	R
Ito 2012	CND	12–278	112/744	R
Javid 2015	CND	14.3, 0.1–107	15/191	R
Joo 2015	CND	53, 28–110	48/297[#]	R
Kang 2014	CND	54, 12–86	37/290	L/R/D
Keum 2012	CND	11–118	7/72	L/R/D
Kim 2017	CND	56.1, 6–190.5	52/658	L/R
Lee 2014	CND	62, 33–90	27/136	L/R/D
McNamara 2015[*]	CND	63.5, > 60	27/364	R
	SND	63.5, > 60	11/120	R
O'neill 2013	CND	31, 12–140	15/116	R
Shim 2013	CND	36, 12–80	9/143	L/R
Turanli 2007	SND	73, > 60	9/29	R
	CND	58, > 60	7/32	R
Yu 2012	SND	36–60	2/47	R
Zhang 2013	CND	106.8, 48–216	40/330	L/R
Zhang 2017 a	SND	12–30	0/92	–
Zhang 2017b	SND	> 12	0/64	–

Abbreviations:
SND: selective neck dissection, CND: comprehensive neck dissection, L: local recurrence, R: regional recurrence, D: distant metastasis
Note:
[*] The median follow-up duration was not reported for SND and CND respectively. And the data of CND was not included in the meta-analysis by Won et al
[#] We consider the number of regional recurrence patients should be 22 instead of 48 used in the meta-analysis by Won et al.

https://doi.org/10.1016/j.oraloncology.2018.11.034
Received 15 November 2018; Received in revised form 23 November 2018; Accepted 30 November 2018
Available online 13 December 2018

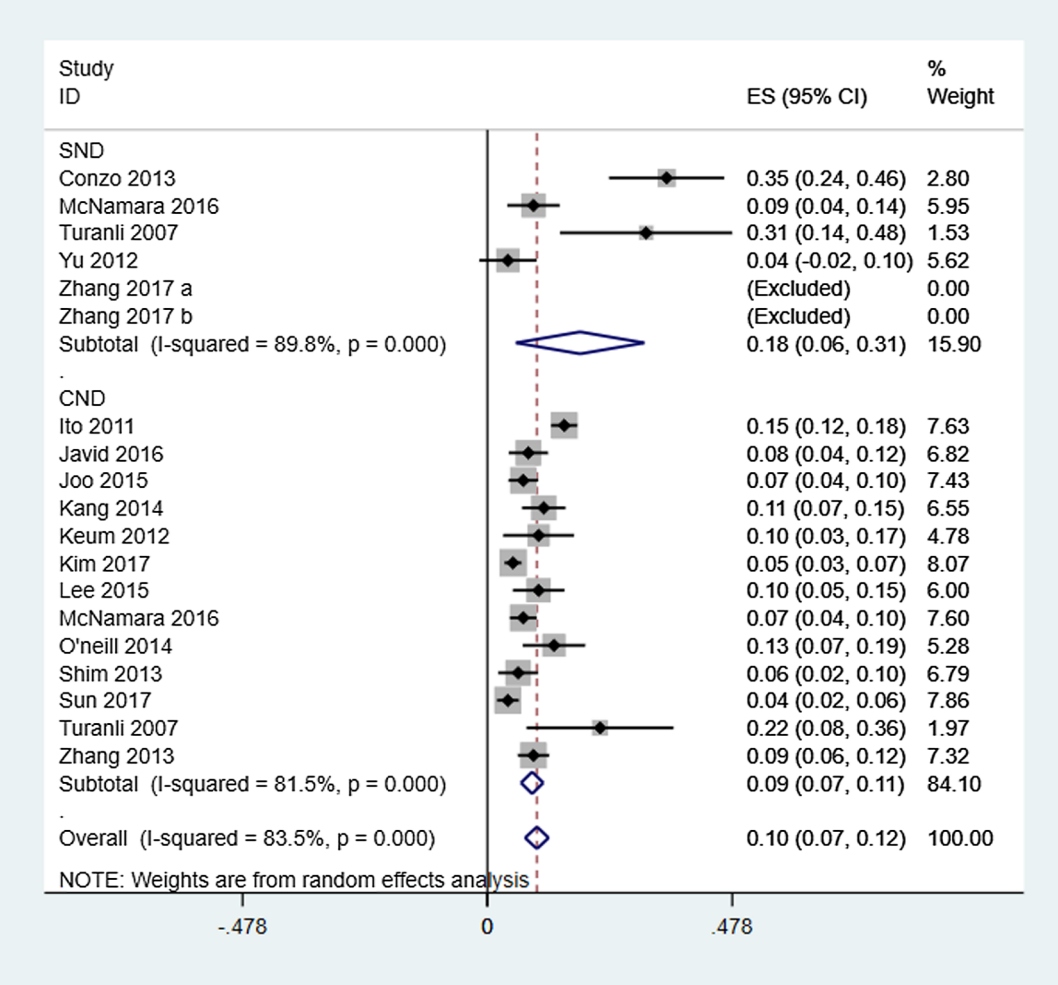

Fig. 1. Meta-analysis of regional recurrence rate of SND and CND.

planation. We found that both the intra-subgroup and inter-subgroup heterogeneity were higher than 75%, which indicated the reported values of regional recurrence rate were inconsistent among studies. Certainly, the follow-up duration was one of the factors. The recurrence rate was reported to be comparatively higher in two [3,6] of the studies with at least 5-year follow-up. And the diverse follow-up duration might also be relevant to the heterogeneity among other studies. In addition, the heterogeneity may be related to the application of adjuvant therapy (radiotherapy etc.) [9], which was diverse among studies and individuals. But it remains unclear whether there are more factors which could explain the large heterogeneity.

Thirdly, the level of evidence was insufficient and more comparative studies were needed. The authors seemed to ignore that Mcnamara et al. [5] performed a retrospective cohort study and did not included data of CND in their meta-analysis (Table 1). Therefore, there were totally two cohort studies [5,6] (evidence level: III) comparing the recurrence rate of CND and SND, while the others were case series (evidence level: IV). We also conducted a meta-analysis to pool the data of comparative cohort studies by Revman 5.3 (Figure not shown). The results showed no significant difference of regional recurrence between CND and SND (RR = 0.77, 95% CIs 0.45–1.30, P = 0.32, $I^2 = 0$). We consider that more high-quality studies with larger sample size may give us more information.

To summarize, Won et al. [1] synthesized mixed data which could not reflect the incidence proportion of either regional recurrence or total recurrence. Although our results of meta-analysis found a statistical difference, it did not indicate a difference of regional recurrence rate between CND and SND. Further long-follow-up, high-quality, comparative studies are needed.

Conflict of interest statement

None declared.

Appendix A

See Fig. A1.

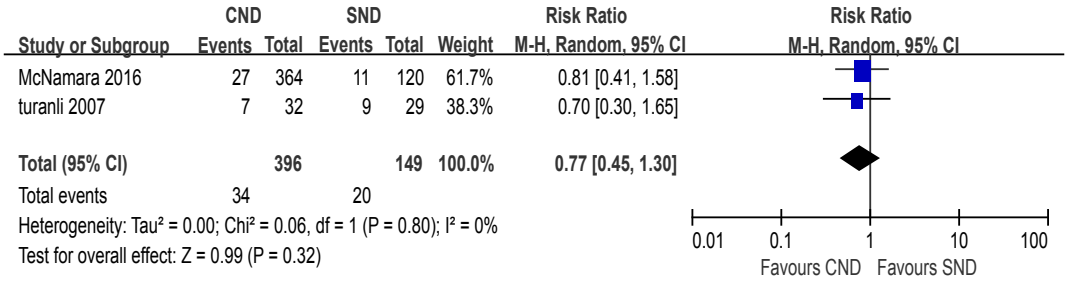

Fig. A1. Forest plot comparing regional recurrence rate of SND and CND.

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