

## Commentary



# Comments on “Effects of Patient and Tumor Characteristics on Central Lymph Node Metastasis in Papillary Thyroid Cancer: a Guide for Selective Node Dissection”

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Recently, Altiner et al published an article entitled above and showed that gender (OR=1.22), tumor subtype (OR=0.44) and lymphovascular invasion (OR=2.59) significantly increase the odds of central lymph node metastasis (CLNM), while intra-thyroidal localization of the tumor is not significantly associated with CLNM based on the multiple logistic regression.<sup>1</sup> However, these findings are doubtful due to the following reasons:

- The estimated crude odds ratios are not true for women (correct OR=0.51), lymphovascular invasion (correct OR=138.19) and extracapsular invasion (correct OR=8.87).
- In Table 2, for not applicable ORs, 95% confidence intervals were reported!
- The negative values in the confidence interval of odds ratios are definitely wrong because the odds ratio is always positive.
- The adjusted OR for lymphovascular invasion is 2.59, but the 95% confidence intervals range from 4.47 to 7.9 which is impossible.
- In the multiple logistic regression, just one OR was reported for each of the quantitative variables with

more than two categories. Considering a category as the baseline, four ORs must be reported for intra-thyroidal localization and two ORs for tumor subtype. So, the current ORs are not valid.

- The confidence interval of OR for gender ranges from 0.99 to 1.55 which contains one and cannot be significant; so,  $P$  value=0.025 is not true and the correct  $P$  value is greater than 0.05, indicating gender is not statistically significant.

I hope this note shows some deleterious effects of inappropriate statistical analysis in medical research.

#### Competing Interests

Nothing to declare.

#### Ethical Approval

Not applicable.

#### References

1. Altiner S, Kozan R, Emral AC, Taneri F, Karamercan A. Effects of Patient and Tumor Characteristics on Central Lymph Node Metastasis in Papillary Thyroid Cancer: A Guide for Selective Node Dissection. Arch Iran Med. 2022;25(11):730-6. doi: [10.34172/aim.2022.115](https://doi.org/10.34172/aim.2022.115).

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