



Response to Somay et al. Letter to the Editor Regarding “Trismus Occurrence and Link With Radiotherapy Doses in Head and Neck Cancer Patients Treated With Chemoradiotherapy”

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Dear Editor,

We thank Somay et al for their interest and insightful comments, and we appreciate the continued opportunity to discuss our article “Trismus Occurrence and Link with Radiotherapy Doses in Head and Neck Cancer Patients Treated with Chemoradiotherapy.”¹

The main objective of the OPEN trial (NCT03979924) is to assess the impact of preventive physiotherapy combined with patient education on trismus prevalence in head and neck cancer (HNC) patients treated with chemoradiotherapy (CRT). However, data regarding trismus prevalence are highly heterogeneous. Multiple factors can explain these variations, such as a wide discrepancy in study populations, especially regarding tumor location and HNC treatment modalities (radiotherapy, chemotherapy, or surgery, alone or in combination). In addition, different measurement methods and time points, not always comparable, were used to determine trismus prevalence.^{2,3} Therefore, we first conducted an observational step to evaluate trismus occurrence and its link with radiotherapy dose, in 45 HNC patients 10 weeks after completed CRT with or without previous surgery.¹

Firstly, Somay et al stressed that some patient characteristics known to be associated with a higher prevalence of trismus are not reported in our article. Although we included many of them in our manuscript (eg, tobacco and alcohol consumption, tumor location), we agree that information regarding tumor stages would bring additional value to our article. Therefore, Table 1 provides full details on T and N stages but also TNM stages, for the overall cohort. Author also pointed out we did not provide information about surgical margins. While this information may be interesting, it was not considered relevant to our study as only 33% of patients had previously undergone surgery.

Secondly, Somay et al stated that no information about the temporomandibular joint is provided. Please note that all information regarding the temporomandibular joint is available in Table 3, but also Figures 2 and 3, of the original article. This includes, but is not limited to, the radiation doses and the mean radiation dose in patients with or without trismus at various time points. In addition, we chose not to report the total radiation dose delivered to the masticatory apparatus. Indeed, there is no consensus regarding the link between trismus and radiation doses to the masticatory apparatus as a combined block, and about the role of each muscle in the system. Moreover, we reported the median radiation dose, which, from our perspective, gives the most accurate estimate of the delivered dose for each structure. On the contrary, the maximum dose only provides information about the radiation dose at a specific point or for a limited volume. Thus, the dose delivered to 50% of the volume reflects more accurately the degree of irradiation of the associated structure, as well as possible secondary malfunctions. In our study, we considered the use of the receiver operating characteristic curve analysis as irrelevant because of the relative small size of our cohort and its heterogeneity.

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Table 1. Clinical Features of Included Patients at Baseline.

| Feature | N | N = 45 |
|--------------------|----|--------|
| | | % |
| Tumor localization | | |
| Oropharynx | 33 | 73.3 |
| Oral cavity | 9 | 20.0 |
| Cavum | 3 | 6.7 |
| Previous surgery | 15 | 33.3 |
| cT Stage | | |
| T1 | 4 | 8.89 |
| T2 | 16 | 35.56 |
| T3 | 9 | 20.00 |
| T4 | 15 | 33.33 |
| TX | 1 | 2.22 |
| cN Stage | | |
| N0 | 2 | 4.44 |
| N1 | 9 | 20.00 |
| N2 | 32 | 71.11 |
| N3 | 1 | 2.22 |
| NX | 1 | 2.22 |
| TNM Stage | | |
| Stage I | 4 | 8.89 |
| Stage II | 16 | 35.56 |
| Stage III | 14 | 31.11 |
| Stage IV | 2 | 4.44 |
| Stage IVa | 9 | 20 |

Thirdly, we only made conclusions on the trismus occurrence, but not the overall incidence, because the relatively small size of our cohort (45 HNC patients). We included 24.4% of patients with initial trismus, but this is not discordant with other studies. Indeed, in their meta-analysis, Watters et al reported 17.3% of patients presented with initial trismus.³ Furthermore, we included these patients only when trismus was a HNC-related condition.

Multiple approaches are used in trismus management, including passive and/or active rehabilitation, with various degrees of efficacy.^{4,5} In the ongoing OPEN study, we will assess the benefits of a preventive physiotherapy associated with patient education in a total of 195 patients. Our aim is to identify new approaches to provide a protocol, not too burdensome but still effective, to prevent and manage trismus. In addition, our observational study provided us with

an opportunity to validate not only patients' inclusion criteria but also the methodology to evaluate trismus. As a result, in the current step of the study, we assess the impact of our preventive physiotherapy program in patients with a specific tumor location, and we use a defined schedule combined with precise trismus measurements.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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