

## Letter to the Editor

## In Reply to Wada et al

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We thank Wada et al<sup>1</sup> for their comments on our article, “Breast-directed quad shot radiation therapy (RT) for effective breast symptoms palliation without interrupting or delaying systemic cancer therapy schedule in patients with neglected breast cancer.”<sup>2</sup>

The authors note important points that we will respond to in this letter.

First, regarding the number of breast-directed quad shot (QS), we would like to clarify that only 1 of 3 patients (including a case presented in Fig. E1) received 3 cycles of QS.<sup>2</sup> All patients reported significant subjective and objective symptom relief immediately after the first QS (QS1). The reason for receiving a subsequent QS in 1 patient was an open wet wound in tumor bed with rapid tumor regression after QS1 (Fig. 1D in the article<sup>2</sup>), not for uncontrolled or recurring initially presenting breast symptoms such as pain or bleeding. The open wet wound in the right breast tumor bed nearly completely closed with less discharge after QS2 and completely closed after QS3 (Fig. 1E and 1F in the article<sup>2</sup>). Another patient achieved pain relief from severe to mild after QS1. They pursued QS2 for further lowering pain. The fungating mass in the breast was continuously regressed after QS2, although the patient's diseases elsewhere were progressed. A patient presented in Fig. E1<sup>2</sup> received only 1 QS, which provided relief of their immediate symptoms (pain and edema in left neck and arm) until they passed away at 5 months after QS (Fig. E1). Thus, unlike single fraction

palliative RT,<sup>3</sup> subsequent QS was considered on patients' new palliative needs rather than recurrent or uncontrolled initially presenting breast symptoms after QS1.

Second, QS has been shown rapid and durable symptom palliation in various malignancies including low  $\alpha:\beta$  ratio cancers such as sarcoma, urothelial carcinoma, and thyroid carcinoma.<sup>4,5</sup> Accelerated and hypofractionated schedule of QS may provide particular benefit to those radio-resistant, low  $\alpha:\beta$  ratio cancers, and radiobiologic effectiveness of 3 or more QS is reportedly comparable to that of protracted definitive RT.<sup>6-8</sup> A cyclically hypofractionated RT schedule also permits adaptive replanning subsequent QS and can provide less radiation toxicity compared with other breast-directed palliative RT regimens. That no palliative RT-related dermatitis with breast-directed QS in all patients has appeared is promising.<sup>2</sup> Therefore, selected patients with neglected breast cancer and relatively good general condition can have maximum benefit from additional breast-directed QS.

Finally, we agree with the authors that further studies are needed to establish proper palliative RT regimen that can meet the individual patient's palliative needs efficiently yet minimize palliative RT-related toxicity.

## Disclosures

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Supplementary materials

Supplementary material associated with this article can be found in the online version at [doi:10.1016/j.adro.2023.101294](https://doi.org/10.1016/j.adro.2023.101294).

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