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Published online Jun. 1, 2012.
DOI: 10.2967/jnumed.112.105809

REPLY: I would like to thank Schneider et al. for their compliments regarding our article (*1*), and I value and appreciate their time in submitting their concerns regarding our recommendations at the end of the article.

For the reader, the correct quotation of our recommendation from our article was "the use of rhTSH is appropriate for patients who cannot. . .increase their endogenous TSH because their metastases are producing significant thyroid hormone." As Schneider et al. point out correctly, our article does not address the appropriate or inappropriate use of recombinant human thyroid-stimulating hormone (rhTSH) in those rare patients with differentiation thyroid cancer whose endogenous thyroid-stimulating hormone (TSH) cannot be increased because their metastases are producing a significant amount of thyroid hormone. In retrospect, I believe that I could have chosen a better phrase to have communicated my original intent in that "the use of rhTSH injections is still appropriate to *consider* in patients who cannot increase their endogenous TSH because their metastases are producing significant thyroid hormone." Again, I appreciate the time and effort of Dr. Schneider et al. in bringing this to the readers' and my attention.

Having said that, I believe an even more important point is noted by Schneider et al. in their original case report, in which they emphasize that "even standard activities of 7.4 GBq (200 mCi) [of] ^{131}I may constitute a crucial dose in the rare combination of thyroid hormone secreting metastases and rhTSH-stimulation. . ..(*2*)" And as they further state, "higher standard [fixed] activities of ^{131}I should not be used without pretherapeutic dosimetry in patients with such large functioning metastases." I certainly agree with and support this comment. In addition, I believe that pretherapeutic dosimetry should not just be performed in a patient, like theirs, who is being considered for a fixed prescribed activity higher than 7.4 GBq (200 mCi), but pretherapeutic scans and pretherapeutic dosimetry should also be performed in all patients who are being considered for ^{131}I therapy and have documented or suspected functioning metastatic differentiated thyroid cancer. As has been reported by multiple authors, including Leeper (*3*), Tuttle et al. (*4*), and Kulkarni el al. (*5*), as many as approximately 10%–20% of patients may receive over 200 cGy (rad) to the blood (e.g., bone marrow) if prescribed activities of ^{131}I ranging from 3.7 GBq (100 mCi) to 7.4 GBq (200 mCi) are administered. (Additional restrictions apply, including not administering a prescribed activity of ^{131}I that would result in more than 4.44 GBq [120 mCi] of ^{131}I whole-body retention at 48 h in patients without pulmonary metastases and 2.96 GBq [80 mCi] of ^{131}I whole-body retention at 48 h in patients with pulmonary metastases.) In fact, as reported by Schneider et al. and using the OLINDA/EXM software, they calculated that the patient's blood-absorbed dose was 320 cGy (rad). If full dosimetry is not available, then the use of one of the simplified dosimetric alternatives such as percentage 48-h whole-body retention as proposed by Hänscheid et al. (*6*) or Van Nostrand et al. (*7*) should be considered in order to identify those patients whose prescribed activity of ^{131}I should be reduced. These simplified methods can be performed in almost any nuclear medicine facility.

Again, I thank Schneider et al. for their compliments, comments, and time.

REFERENCES

1. Van Nostrand D, Khorjekar GR, O'Neil J, et al. Recombinant human thyroid-stimulating hormone versus thyroid hormone withdrawal in the identification of metastasis in differentiated thyroid cancer with ^{131}I planar whole-body imaging and ^{124}I PET. *J Nucl Med.* 2012;53:359–362.
2. Schneider C, Dietlein M, Eschner W, Schmidt M, Kahraman D, Kobe C. Recombinant human TSH increase uptake and effective half life of radioiodine in thyroid hormone secreting metastases of follicular thyroid cancer. *Exp Clin Endocrinol Diabetes.* 2012;120:160–163.
3. Leeper RD. Thyroid cancer. *Med Clin North Am.* 1985;69:1079–1096.
4. Tuttle RM, Leboeuf R, Robbins RJ, et al. Empiric radioactive iodine dosing regimens frequently exceed maximum tolerated activity levels in elderly patients with thyroid cancer. *J Nucl Med.* 2006;47:1587–1591.
5. Kulkarni K, Van Nostrand D, Atkins F, Aiken M, Burman K, Wartofsky L. The relative frequency in which empiric dosages of radioiodine would potentially overtreat or undertreat patients who have metastatic ill-differentiated thyroid cancer. *Thyroid.* 2006;16:1019–1023.
6. Hänscheid H, Lassmann M, Luster M, et al. Iodine biokinetics and dosimetry in radioiodine therapy of thyroid cancer: procedures and results of a prospective international controlled study of ablation after rhTSH or hormone withdrawal. *J Nucl Med.* 2006;47:648–654.
7. Van Nostrand D, Atkins F, Moreau S, et al. Utility of the radioiodine whole body retention at 48 hours for modifying empiric activity of 131-iodine for the treatment of metastatic ill-differentiated thyroid carcinoma. *Thyroid.* 2009;19:1093–1098.

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Published online Jun. 1, 2012.
DOI: 10.2967/jnumed.112.106617

Palliation and Survival After Repeated ^{188}Re-HEDP Therapy of Hormone-Refractory Bone Metastases of Prostate Cancer: A Retrospective Analysis

TO THE EDITOR: We read with great interest the article by Biersack et al. published in the November 2011 issue (*1*). Because our group shares with the authors a similar interest in the potentials of therapeutic bone-seeking radiopharmaceuticals not only for palliation of bone pain but also for some objective antitumor activity (especially when administered in combination with other therapies) (*2,3*), this article constitutes for us an additional source of inspiration and stimulates further impetus to our ongoing investigations in this field.

Considering this evolving scenario, we believe that clarifying somewhat further some of the issues addressed by Biersack et al. would contribute to enhancing the value of the overall information that the nuclear medicine community (as well as the medical