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Imaging Metastases of Thyroid Carcinoma

TO THE EDITOR: We read with interest the article (*1*) by Joensuu and Ahonen. Since fluorine-18 fluorodeoxyglucose (FDG) scanning was done in presence of thyroxine therapy and thyroxine feeding was interrupted before ^{131}I scans, did this influence the fact that some lung and neck metastases accumulated ^{131}I, but not FDG. Further, it would be of interest to compare and discuss FDG results with radiolabeled antithyroglobulin (*2,3*) scanning which may replace or supplement ^{131}I scans for detecting thyroid metastases. Finally, it is surprising that there was an interval of more than 1 mo between detection of thyroid metastasis by radioiodine and radioiodine therapy (Patient 1), while the usual procedure is to administer iodine-131 (^{131}I) therapy as soon as possible and to start suppressive doses of thyroxine.

References

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3. Shepherd PS, Lazarus CR, Mistry RD, et al. Detection of thyroid tumor using a monoclonal ^{123}I anti-thyroglobulin antibody. *Eur J Nucl Med* 1985; 10:291–295.

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REPLY: Most primary thyroid carcinomas grow during the diagnostic thyroxine suppression test for thyroid nodules (*1*). There is no reason to believe that the same is not true for the metastases originating from these carcinomas. In our view, it is not settled if thyroxine feeding decreases the glucose uptake of metastases originating from thyroid carcinoma, it might even do the opposite, i.e., increase the uptake of glucose, and hence, fluorine-18 fluorodeoxyglucose (FDG). Further, the more differentiated metastatic cells may be more responsive to thyroxine therapy than the less differentiated ones. We feel that these are important questions for future research, particularly because thyroxine feeding is commonly used in the therapy of patients with disseminated thyroid carcinoma. FDG is obviously an interesting agent for this kind of studies. We agree that it would be of interest to compare FDG results with radiolabeled antithyroglobulin, but unfortunately this could not be done. We also agree that iodine-131 (^{131}I) therapy should be initiated immediately after the detection of metastases that accumulate ^{131}I, but this may not always be possible in practice.

Reference

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Alternative Approach to Estimate Lumped Constant in the Deoxyglucose Model: Simulation and Validation

TO THE EDITOR: It was with great interest that I read the article "Alternative Approach to Estimate Lumped Constant in the Deoxyglucose Model: Simulation and Validation" by Matsuda, Nakai, Jovkar et al., *J Nucl Med* 1987; 28:471–480. I think that in an article, where mathematics plays such a very important role, the mathematic formulas and expressions should be very exact. They provide the theoretic background and help in the description of the complicated relations and computational methods. It can be disturbing if they are used incorrectly. Unfortunately, this article contains a number of inaccuracies. I am sure that without these errors the article would have been more easily understandable.

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REPLY: Because of a delay in returning corrections for our article (*J Nucl Med* 1987; 28:471–480) several inaccuracies were published. We agree that it would be easier to read our paper if those errors were not there. However, only one of the errors was of a serious nature. We would appreciate if you would publish corrections to our paper as outlined below.

1. Apparently there were different notations for the tracer concentrations in different biologic compartments. Symbols $Ca^*(t)$, $Cp^*(t)$ and $Cv^*(t)$ have the same meaning as $C_a^*(t)$, $C_p^*(t)$, and $C_v^*(t)$, respectively.

2. α_3 in Eq. (1) should read α_1
e^{Dt} in Eq. (3) should be $e^{D\gamma}$
LC′ in Eq. (5) should be LC″.

3. On p. 473 in the paragraph under title LC calculation, Eq. (12) should read Eq. (A12), and the last constant in the same paragraph should be k_3^* not k_2^*.

4. The first line of Eq. (8) should read $T(t) = \sum_{i=1}^{3} B_i e^{-\beta_i t}$.