Quantification of the $\alpha_v\beta_6$ Integrin by PET/CT Imaging in the Lungs of Patients After SARS-CoV2 Infection and Comparison to Fibrotic Lungs

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TO THE EDITOR: We were interested to read the recent article by Foster et al. (*1*) describing early experience of $\alpha_v\beta_6$ PET/CT imaging of the lungs after severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection.

We would like to point out that the suggestion that the $\alpha_v\beta_6$ uptake in lung regions affected by SARS-CoV-2 is 3 times that which we reported previously for fibrotic lung (*2*) may be misleading. Foster et al. report an SUV_{max} of approximately 3.0 in SARS-CoV-2 and compare this with our reported value of 1.03 in subjects with idiopathic pulmonary fibrosis. However, our value is the SUV_{mean} averaged over the whole lung volume, which will be systematically lower than SUV_{max}. Although we did not perform an equivalent analysis, and the color scale in our example images (Lukey et al. (*2*), Fig. 1) was chosen to enable comparison with the healthy participants rather than visualization of the maximal value, we can confirm qualitatively that localized SUVs of 3.0 or more were observed widely in the fibrotic lung regions in our study.

Clearly, more data and appropriate analyses (*3*) would be needed to make a valid quantitative comparison, particularly given the potential influence of tissue fraction (*4*) and the known (micro)-vascular component of the SARS-CoV-2 disease mechanism (*5*), which might influence the blood signal.

We look forward to seeing more results from this important work in due course.

DISCLOSURE

Pauline T. Lukey was previously an employee of GlaxoSmithKline and is currently a shareholder. She now works or has worked as an independent consultant to GlaxoSmithKline R&D, the Francis Crick Institute, Galecto, Mereo BioPharma, BerGenBio, Revolo, DJS Antibodies. Frederick J. Wilson is an employee and shareholder of GSK. No other potential conflict of interest relevant to this article was reported.

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Potential Theranostic Role of Bone Marrow Glucose Metabolism on Baseline ^{18}F-FDG PET/CT in Metastatic Melanoma

TO THE EDITOR: We have read with great interest the article "Prognostic Value of Bone Marrow Metabolism on Pretreatment ^{18}F-FDG PET/CT in Patients with Metastatic Melanoma Treated with anti-PD-1 Therapy" from Nakamoto et al. (*1*). Although *The Journal of Nuclear Medicine* has published several papers highlighting the clinical value of sequential ^{18}F-FDG PET/CT for response assessment (*2*,*3*), this new article showed that baseline ^{18}F-FDG PET/CT could also be used to guide treatment decisions.

To this end, the authors studied a population of 92 patients with a diagnosis of metastatic melanoma treated with immune checkpoint inhibitors (ICIs) (*1*). ICIs included anti-PD1 as single-agent (88%) or in combination (12%) with anticytotoxic T-lymphocyte antigen-4 or antilymphocyte activation gene-3. The authors have evaluated whether patients' overall survival (OS) could be predicted by biomarkers such as demographic or clinical ($n = 4$), biologic ($n = 1$), pathologic ($n = 1$), and imaging variables extracted from baseline and on treatment ^{18}F-FDG PET/CT ($n = 6$).

Confirming Prognostic Significance of BM Metabolism

In this population, the authors confirmed that noninvasive measurement of glucose metabolism on nontumoral bone marrow can be used to predict OS in patients with a diagnosis of advanced melanoma treated with ICIs (*4*). They demonstrated that mean bone marrow–to–liver uptake ratio (BLR_{mean} = bone marrow SUV_{mean}/liver SUV_{mean}) was the most valuable prognostic imaging biomarker. High baseline BLR_{mean} predicted a significantly poor progression-free survival and OS. The finding that bone marrow glucose metabolism is an imaging biomarker correlated with survival is of interest and aligns with findings in existing literature (*4*,*5*). Hence, this letter aims to share with the readership of *The Journal of Nuclear Medicine* (*JNM*) recent publications in the field to provide a deeper understanding on the relationship between bone marrow and clinical outcomes.

Association Between Bone Marrow (BM) Metabolism and Systemic Inflammation

In a recent review published in *JNM*, tumor and bone marrow glucose metabolism were analyzed in 12 studies including 2,588 cancer patients who underwent both ^{18}F-FDG PET/CT scans and biochemical assessments with blood samples (*6*). Most studies showed that