



# RE: $^{99m}\text{Tc}$ -HMPAO-leucocyte scintigraphy and [ $^{18}\text{F}$ ]FDG-PET/CT in infection

Sir,

I read with interest the article " $^{99m}\text{Tc}$ -HMPAO-white blood cell (WBC) scintigraphy and [ $^{18}\text{F}$ ]FDG-PET/CT for diagnosis and therapy monitoring in eleven patients with skull base osteomyelitis" by Vion Pierre-Adrien and co-workers.<sup>1</sup>

The topic is interesting because there are very few reports on the use of nuclear medicine techniques in the investigation of skull base infections. The study is well designed. This is one of very few studies that evaluate patients' pre- and post-therapy with 2 different modalities.<sup>2</sup>

However, some considerations should be made in order to correctly interpret these data.

1. It is not clear whether there was a time interval between end of antibiotic therapy and scans. This is important because it is known that the sensitivity of WBC scintigraphy is reduced during antibiotic treatment and an interval of 7-14 days should be applied. Nevertheless, it is important to specify the exact time interval for each patient, from end of treatment to WBC scintigraphy and  $^{18}\text{F}$ -fluorodeoxyglucose (FDG) PET.<sup>3</sup>
2. It is not clear which acquisition protocol has been used for WBC scintigraphy. It is known that this is crucial for the correct interpretation of WBC scintigraphy. The European Association of Nuclear Medicine (EANM) has published several guidelines in this respect, and also, an original paper has clearly demonstrated the need for acquiring images at different time points with a "time-corrected for isotope decay" protocol to avoid misvaluation of images and suboptimal data interpretation.<sup>4-6</sup>
3. The protocol for image display on the monitor may also influence the diagnostic accuracy of WBC scintigraphy, and it should be reported in the manuscript.<sup>5</sup>
4. The injected activity for WBC scintigraphy is reported to be between 200 and 500 MBq starting from an activity of 666 MBq. This means that authors had a labelling efficiency between 30% and 75%. However, a LE < 40% is usually not accepted because of possible cell damage.<sup>7</sup> The authors should explain why they administered radiolabelled cells with such a low LE and what image acquisition protocol they used when injected activity was as low as 200 MBq.
5. The authors do not show the confidence intervals of sensitivity and specificity for both WBS scintigraphy and FDG-PET. This limits the interpretation of data.

In summary, despite the interesting topic I am very sceptical about what message that can be drawn from this report. In my opinion, key points 4 and 5, the discussion and conclusions, should be modified since they are not supported by the methodology used and by obtained results.

## CONFLICT OF INTEREST

None to declare.

Alberto Signore

Chiara Lauri

Nuclear Medicine Unit, Department of Medical-Surgical Sciences and of Translational Medicine, "Sapienza" University of Rome, Rome, Italy

## Correspondence

Alberto Signore, Nuclear Medicine Unit, AOU Sant'Andrea, Via di Grottarossa 1035, 00189 Rome, Italy.  
Email: alberto.signore@uniroma1.it

## ORCID

Alberto Signore <https://orcid.org/0000-0001-8923-648X>

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