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Title:

Reply LTE, JNUMED/2018/209817,
Comparison of ^{68}Ga-PSMA-11 and ^{18}F-Fluciclovine PET/CT
in a Case Series of 10 Patients with Prostate Cancer Recurrence:
Prospective trial is on its way.

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Response:

We thank Bela Denes and Peter Gardiner from BlueEarth Diagnostics, Inc. for their interest in our case series (*1*) and their relevant letter. BlueEarth Diagnostics, Inc. showed recently with great success how to get a PET probe approved by the FDA (*2*). We agree with each of their comments and concerns. We had clearly highlighted the limitations all along the article and in particular in the discussion section (*1*).

Nevertheless, we are convinced that the cases may be informative even after considering the limitations that you and we highlighted. Except for one patient (#3), the difference in PSA levels between the 2 scans was minimal: median 0.11 ng/ml, mean 0.24, range 0.03-0.86 (*1*). PSMA signals were entirely unambiguous and we did not rely on CT to call findings positive or negative. We also agree that false positive PSMA PET/CT findings can occur. However, the reported specificity and positive predictive values of PSMA PET/CT especially for local and nodal disease are reported to be very high (i.e. > 95%) (*3–6*).

Findings of the two imaging tests were so strikingly different that we felt a brief report would be prudent since no direct comparisons between these two tests have been published thus far. These differences are not surprising as amino acid transport and PSMA expression reflect fundamentally different biological processes. We believe that lesion phenotypes such as concordant and discordant findings by these two imaging tests may give rise to future important research by for instance correlating these patterns with patient outcomes.

We strongly support the notion that ^{18}F-Fluciclovine PET/CT has significantly improved the management of prostate cancer patients as documented in well-designed clinical trials (NCT01666808, NCT02578940). We acknowledge with great enthusiasm that the inclusion of ^{18}F-Fluciclovine PET/CT in the ACR Appropriateness Criteria® guidelines as well as most recently in the NCCN guidelines® is a major milestone for improving the care of prostate cancer patients.

We simply reported that 7/10 patients who underwent ^{18}F-Fluciclovine PET/CT prior to enrollment in our ongoing prospective trial (NCT02940262) exhibited more positive findings on ^{68}Ga-PSMA-11 PET/CT scan. While far from definitive evidence of superiority, these unexpected findings encouraged us to initiate a prospective single center trial to compare ^{68}Ga-PSMA-11 and ^{18}F-Fluciclovine PET/CT for restaging prostate cancer patients with biochemical recurrence after radical prostatectomy at low PSA values (UCLA IRB# 17-001885).

References

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