Author's response to reviews

Title: Somatostatin receptor expression in Merkel cell carcinoma as target for molecular imaging

Authors:

Kristina Buder (Buder_K@ukw.de)
Constantin Lapa (Lapa_C@ukw.de)
Michael C. Kreissl (michael.kreissl@gmx.de)
Andreas Schirbel (Schirbel_A@ukw.de)
Ken Herrmann (Herrmann_K1@ukw.de)
Alexander Schnack (Schnack_A@ukw.de)
Eva-Bettina Bröcker (Broecker_E@ukw.de)
Matthias Goebeler (Goebeler_M1@ukw.de)
Andreas K Buck (Buck_A@ukw.de)
Jürgen C Becker (juergen.becker@medunigraz.at)

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Author's response to reviews: see over
RE: Manuscript 1953419757112834
Somatostatin receptor expression in Merkel cell carcinoma as target for molecular imaging

Dear Editors,

We thank you very much for your efficient and timely handling of our manuscript (No. 1953-4197-5711-2834) entitled “Somatostatin receptor expression in Merkel cell carcinoma as target for molecular imaging”.

We have addressed all points raised by the reviewers in the revised version of the manuscript. Following the suggestions of reviewer #1 we now include a proposed staging algorithm for Merkel cell carcinoma based on our observations (Figure 4). We also included a supplementary figure illustrating the improved imaging by PET/CT-devices (Supplementary Figure 1). All changes to the manuscript are highlighted in yellow. In the following you find the point-by-point response to the reviewer’s comments.

Reviewer’s Comments:

(1) The characteristics of the diverse devices employed in this study can be determinant to the overall results. The PET only device is probably inferior to the PET/CT device. As 19 out of 24 patients were performed with PET only + CT devices don’t the authors think that the
results can be improved with the current PET/CT devices (as it is partially suggested at the end of chapter 4)?

We agree that integrated PET/CT systems provide improved diagnostic imaging over dedicated PET scanners. This notion is now explicitly addressed in the discussion (page 13, lines 11-19). We also include a supplementary figure illustrating improved imaging using hybrid PET/CT devices.

(2) With the results gathered in Table 2 it is advisable to use $^{68}$Ga-DOTATOC/ATE in bone and subcutaneous tissue lesions only? In this sense, I believe that authors, with this great experience must include a complete recommendation of a diagnostic algorithm by including PET/CT.

We thank the reviewer for this valuable suggestion. Our data indeed indicate a high sensitivity of $^{68}$Ga- DOTATOC/ATE-PET for detection of bone and soft tissue metastases and a low sensitivity for liver and lung metastases. Therefore, integrated PET/CT is providing the most informative imaging results. As suggested by the reviewer, we now include our proposal for a staging algorithm in Merkel cell carcinoma (Figure 4).

(3) [...] the references section has a lot of mistakes. Please review all citations and provide them in journal style (normally Vancouver citation style)

We have to apologize for formatting references incorrectly. All references were checked and corrected according to the journal style as described under author instructions on the BMC Cancer website.

(4) The figures are all with old PET device. Could the authors provide a good example with a PET/CT device in order to show the image quality improvement of this study?

Following this suggestions, we now provide an example for the increased sensitivity of integrated PET/CT scanners over dedicated PET devices. The selected patient underwent both dedicated PET as well as combined PET/CT imaging 6 months later. On the PET/CT scan, a suspicious supraclavicular lymph node was clearly depicted. Review of the previous CT scan revealed that this node was present at the earlier CT scan, but was missed in the SSTR-PET using the PET only device. Since the majority of the SSTR-PETs had been performed with the older device, we present this example as supplementary figure.
We hope that the revised manuscript is now acceptable for publication in *BMC Cancer*. All authors have read and approved the revised manuscript. This manuscript is not under consideration elsewhere.

On behalf of all co-authors, C. Lapa, A. Schirbel, K. Herrmann, M.C. Kreissl, A. Schnack, E.-B. Bröcker, M. Goebeler, A.K. Buck, and J.C. Becker.

Yours sincerely,

Kristina Buder, MD