Reviewer's report

Title: Severe paraneoplastic hypereosinophilia in metastatic renal cell carcinoma

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Reviewer: Holger Gerullis

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The manuscript entitled „Severe paraneoplastic hypereosinophilia in metastatic renal cell carcinoma“ claims to report the first case of paraneoplastic hypereosinophilia in a patient with renal cell carcinoma. This is an interesting phenomenon, physicians treating those patients with sophisticated drugs should be aware of. However, treatment options are limited, in particular when trying to balance antineoplastic drugs with immunosuppressive approaches. Respective patients are in a fatal situation where oftentimes even mid-term oncologic benefit is difficult to achieve as shown here.

Several concerns that need to be addressed:

1) What did the authors plan for the patient subsequently after nephrectomy with this pT4, pNx, M1, L0, V1, G3 tumor? I imagine, that around day 20-28 a sort of targeted concept should have been prepared?

2) How was this patient stratified according to MSKCC or Motzer criteria? Was not this a high risk patient?

3) What was the rationale for initial sunitinib first line approach in that young patient?

4) The authors state that sunitinib had to be replaced by temsirolimus because of swallowing. Did this patient need parenteral nutrition or did he selectively swallow sunitinib? What about other peroral medications? The justification for the therapy switch sounds awkward.

5) I have the impression that temsirolimus would have been the appropriate first line treatment for this patient.

6) In Fig 2 sunitinib is re-initiated after 6 infusions of temsirolimus, this is not stated in the text and seems not plausible. Why did the authors do so?

7) The retroperitoneal mass was finally defined as what? After first drainage no information of tumor cells is given. No cytology? Was it „just“ an abscess? Later the authors write about a CT scan performed 2 weeks after the drainage of the fluid collection and declare the process as massive progression of the retroperitoneal tumor mass in the surgical bed. Has it already been a local recurrence when first draining? This has to be clarified.

8) A table stating the performed diagnostic/therapeutic activities would help the reader to better perceive the clinical course.

Overall an interesting report with potential to improve before publication.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: I declare that I have no competing interests