Reviewer's report

Title: Transcriptional profiles of pilocytic astrocytoma are related to the three different locations but not to the radiological features and clinical outcome

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Reviewer: Rui Reis

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The study of Zakrzewski and collaborators analyzed the expression profile of a significant number of pilocytic astrocytomas and correlated with some clinico-pathological features.

Despite the pertinent approach and overall scientific sound study, some major issues should be addressed:

- The authors determined 8 subgroups that are not appropriate, mixing tumor location, with radiological findings, with disease progression and finally genetic background (NF1). This confusing, pointless subgrouping not only complicate the analysis but also withdrawn certainly statistical power to the study, since mixed distinct features of the tumors. The authors should be or unsupervised analysis, or the case of supervised compared only, comparable groups.

- Another important issue is some details of the methodology. It should mentioned the tissue analysed (frozen or FFPE), the tumor content of the tissue from where the RNA was isolated (and how this tumor content was guarantied), and finally and most importantly, the microarray data must be deposited in the GEO database, and the authors mentioned the accession number in the manuscript.

Minor issues:

- Table 1, should also include the data concerning patient age group, extension of resection and current status of patient (dead/alive).

- QRT-PCR, should be changed by RT-qPCR, the current most accepted nomenclature.

- The introduction is extremely poor and short at variance with too long discussion. Revised English with unusual and informal type of writing such as “approx. ¼”. Not updated literature.

- The TCGA and ICGC data current available should be used for in silico validation of the findings.

Level of interest: An article of importance in its field

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.